IDEM SAFETY SWITCHES

RFID Locking Switches

IDEM

Providing Machine Safety for YOU at Work

Designed and Manufactured in the United Kingdom

IEC IECEx Ex ATEX cULus TÜV CE

The history of IDEM - back to where it all started

IDEM's UK Manufacturing Base

IDEM's UK-based facility for research and development and manufacturing of safety interlock switches for machines and industry.

2 Ormside Close
Hindley Industrial Estate
Hindley Green
Wigan WN2 4HR
United Kingdom

ABOUT IDEM - who are we and what do we do?

- IDEM Safety Switches was created in 2003 by Medi Motasham who was the former Head of Research and Development at EJA/Guardmaster.
- Over a period spanning 18 years as Technical Director of EJA/Guardmaster and subsequently Rockwell Automation, Medi designed and developed the popular Guardmaster brand products that included Trojan, Titan, Cadet, Rotacam, Ferrogard, Spartan, Lifeline, etc.
- Today, IDEM's team with over 200 years' of combined experience have set a new industry standard by offering the "Next Generation" of machine safety interlocks and devices with higher reliability, increased innovative features and up to date durability to cope with the continually increasing environmental demands placed on machine safety devices.

IDEM's journey to date

1985	Medi commences employment at EJA Engineering which began life as a small local distributor of electrical products at Hindley in the UK.
1986	Medi creates the Research & Development Department and commences design of Trojan, Atlas, Rotacam and LRS1 rope switches.
1988	The Guardmaster brand is established and EJA Engineering becomes the UK's top supplier of machine safety switches.
1990-96	The Guardmaster brand becomes established worldwide with the popular product lines of Trojan, Titan, Ferrogard and LRS4.
1996	Medi is a member of the MBO team which acquires the EJA Engineering Group (Guardmaster, Sigma Controls and Nelsa).
1999	Rockwell Automation completes the acquisition of the EJA Group and markets the safety switches as AB-Guardmaster brand globally.
2003	Medi departs Rockwell Automation and forms IDEM Safety Switches with a vision to design the "Next Generation" of safety switches which will be designed and manufactured in the United Kingdom.
2005	IDEM Safety Switches manufactures the first of the "Next Generation" products in a purpose-built factory near Manchester, UK.
2006-10	IDEM becomes established as the leading developer of "Next Generation" safety interlocks, specialising in products for the food industry, explosion proof applications and factory automation. The new brands of Kobra Tongue, Guardian Line Rope, Idemag, Idecode, Euromag, Hygiemag, Hygiecode and Modus are sold globally.
2011-12	Rockwell Automation cease manufacturing on their site at Hindley, UK. IDEM acquire the site with a vision to set up a World Class Centre of Excellence for the Design and Manufacture of Machine Safety Devices. 80% of IDEM's staff are ex-Guardmaster and Rockwell Automation. **IDEM's people are now back where the story began!**
2014 -18	IDEM is now the UK's largest manufacturer of machine safety switches in addition to manufacturing the world's largest range of Stainless Steel machine safety switches. **IDEM introduce new products and continue to develop the "Next Generation" of machine safety.**

Research & Development with Innovation and Spirit

- As a technology company our R&D efforts focus on producing the finest products by fostering **innovation** and **ingenuity,** whilst maintaining compliance with the latest standards and approvals. Our expertise has resulted in numerous inventions - providing ideal solutions for the human-machine environment.
- IDEM's ever-increasing product portfolio affirms IDEM as the leading developer of machine safety interlocks by employing the best minds in the business and extensive investment in R&D to provide the "Next Generation" of safety switches and devices.

Quality and Manufacturing

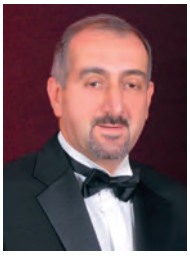
- IDEM are extremely proud to manufacture in the UK and our policy is to ensure World Class Products to support all industry sector customers.

A PROUD ACHIEVEMENT - MOTASHAM WINS ROCKWELL AUTOMATION'S ODO J. STRUGER AUTOMATION AWARD

The Odo J. Struger Automation Award is an honour bestowed annually on the engineer who has made the most outstanding contributions in the field of automation. The winner for 2000 was Medi Motasham, Director of R&D at Guardmaster UK in the Components and Packaging Group. Medi, an employee of Rockwell Automation following the acquisition of EJA Ltd. in 1999, was honoured for his contributions to the development of machine safety components.

Having been responsible for the initial set up of the R&D Department of EJA, Medi initiated the design and invention of the majority of EJA's Safety Switches, and was responsible for the launch of Trojan, Titan, Atlas, LRS rope switches and many other safety products which are distributed on a worldwide basis.

His distinguished contributions to the Guardmaster line of safety products culminated in his increased responsibility for the design of Guardmaster, Sigma and Nelsa product lines.



Medi Motasham

Contents

Safety Switches from IDEM

International and European Standards

BASIC SAFETY STANDARDS

EN ISO12100-1 EN ISO12100-2 (supersedes EN292-1 EN292-2) Safety of Machinery - Basic Terminology and concepts for Design
Outlines the concepts for Risk Assessment, Interlocking, Emergency Stops and references other standards and directives, e.g. EN60204-1.

ISO14121-4 (supersedes EN1050 Safety of Machines - Risk Evaluation)
Outlines the requirements for assessing Hazard Analysis and Risk Reduction for the machine.

EN60204-1 Electrical Equipment of Machines - General Requirements
Outlines the requirements for Electrical Wiring Safety on machines and specifies the Emergency Stop function and requirements.

DESIGN STANDARDS

ISO14119 Interlocking Devices - Principles for Design (supersedes EN1088)
Outlines the principles for the design and selection of Interlock and Emergency Stop devices. Provides references to the other basic standards and to standards for verifying the performance of various devices. References EN ISO13849-1 for functional safety.

EN ISO13849-1 Safety of Machinery - Safety related parts of control systems - General Principles for Design
Describes the safety categories which apply to Safety related parts of machine controls. It examines the complete safety functions, including the components used in their design. A performance level (PL) is used to quantify the safety fucntions. There are five PL (a to e) where e is the highest level of safety function.

EN60947-5-1 Low voltage switchgear and controlgear - Electro-Mechanical control circuit devices
Describes the Mechanical Design and Test requirements for control circuit devices incorporating positive break contacts.
Designates Electrical switching characteristics e.g. AC15 3A.

EN60947-5-3 Low voltage switchgear and controlgear - Proximity devices with defined behaviour under fault conditions
Describes the Design and Test requirements for Non Contact devices with defined behaviour under fault conditions. Specifies 4 categories to define Fault Behaviour.

EN60947-5-5 Low voltage switchgear and controlgear - Emergency Stop devices with mechanical latching
In addition to the requirements of IEC947-5-1, describes the Mechanical Design and Test requirements for Control circuit devices with Emergency Stop Functions with mechanical latching. Provides specific requirements relating to Safety Rope switches and systems.

EN ISO13850 (supersedes EN418) - Emergency Stop Design guidelines
Provides principles for design of latching Emergency Stop devices. Specifies the requirement for Emergency Stop devices to be latching with a mechanical reset.

UL508 Industrial Control Equipment
Describes the Electrical performance requirements and material specification used for Industrial Control switchgear in USA.

IEC61508 Functional Safety for Safety Related E/E/PES- Functional Safety for Electrical, Electronic or Programmable Electronic Systems
A generic standard covering various industries - Measures the Safety of an E/E/PES by using Safety Integrity Levels (SIL's).
Provides a SIL based upon the Probability of Failure on demand (PFd) or the Probability of Failure per hour (PFh) up to SIL4.

EN62061 Safety of Machines - Safety related parts of controls
In addition to IEC61508 and specifically for Machine Safety Systems this standard covers the entire life cycle of a "system" or devices used to make up a system from concept through to shutdown. Measures Safety the same as IEC61508 by using Safety Integrity Level up to SIL3.
Provides a SIL based upon the Probability of Failure on demand (PFd) or the Probability of Failure per hour (PFh) up to SIL3.
IDEM devices will be specified as up to SIL3 for devices provided as sub systems or intended to be used in sub systems by the end user.

EC DIRECTIVES CE

All products are supplied with a Declaration of Conformity to the following EC Directive:

RoHS	2011/65/EU

and to one or more of the following EC Directives:

Machinery Directive	2006/42/EC
Low Voltage Directive	2006/95/EC
EMC Directive	2014/30/EU
Potentially Explosives Atmospheres	2014/34/EU

THIRD PARTY APPROVALS

All products are supplied with independent testing and approval by one or more of the following organisations:
Check ***www.idemsafety.com*** for latest information on Approvals, CE marking.

IMPORTANT:

The information and application examples shown in this catalogue are for illustration only. The installer of these devices must satisfy themselves that each application meets all the requirements of the intended function and local and international regulations.
IDEM Safety Switches reserves the right to revise the information in this catalogue and disclaims all liability for any incidental damages resulting from the use of this material.
Installation of these devices must be carried out by a competent person with appropriate experience of Machine Control Integration.

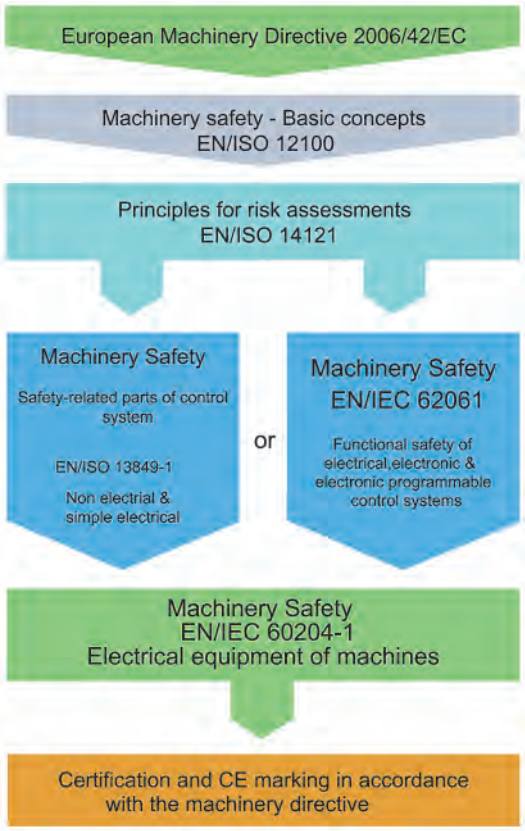
Terms and conditions of use are available at *www.idemsafety.com.*

ABOUT SAFETY LEVELS FOR MACHINERY

Companies involved in building, refurbishing or maintaining machinery need to consider the standards especially when designing new machinery or planning a major upgrade.
Designers and installers of safety systems can choose to conform to the requirements of either of two standards - EN/ISO13849-1 or EN/IEC62061.
Figure 1 shows the design process and how the standards relate. For most non electrical or simple electrical machine controls ISO13849-1 will be sufficient.
EN/IEC62061 is a derivative from the software based standard EN/ISO61508 which covers programmable devices such as Safety PLCs or sophisticated safety electronics, and covers specifically machine safety.

Before these standards can be applied a risk assessment as defined in EN/ISO14121 should have been performed, to identify potential risks and risk reduction measures.
Best practice dictates the assessments are documented and in many cases produced in addition to the equipment operating instructions and technical documentation

Figure 1



EN/ISO13849-1 Machine Safety - safety-related parts of control systems non electrical and simple electrical.

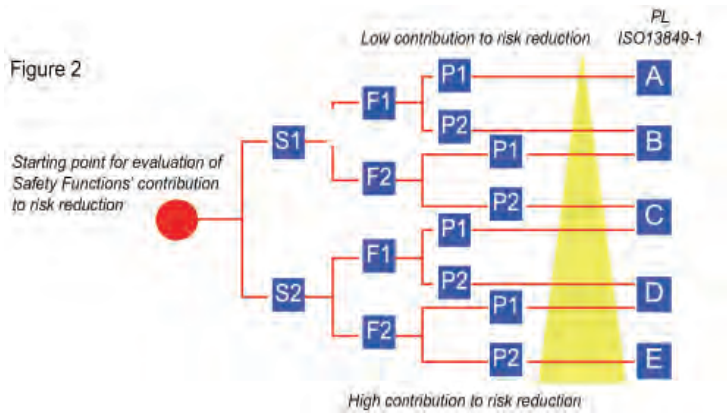
This standard provides safety requirements and guiding principles for design and integration of safety-related parts of control systems.
EN/ISO13849-1 adds a quantitative calculation to the qualitative requirements and considers the likelihood of safety system component failure. An estimation of risk is used to determine the required performance level (PL). EN/ISO13849-1 establishes Performance Levels PLa to PLe (highest).

This is done using a risk graph (see Figure 2).
S = Severity of injury
S1 = Slight (normally reversible)
S2 = Serious (normally irreversible injury including death)

F = Frequency and/or exposure to a hazard
F1 = Seldom to less often and/or the exposure time is short
F2 = Frequent to continuous and/or the exposure time is long

P = Possibilities of avoiding the Hazard or limiting the harm
P1 = Possible under specific conditions
P2 = Scarcely possible

Figure 2



Following on from this graph, further guidance is included in the new standards to assist with the system design, meaning that the math's required is minimal.

In general terms, EN/ISO13849-1 takes a four-stage approach to the design of safety-related control systems.

1. Perform a risk assessment (EN/ISO14121).
2. For the identified risks, allocate the safety measure, Performance Level (PL).
3. Devise a system architecture that is suitable for the Performance Level or Category.
4. Validate the design to check that it meets the requirements of the initial risk assessment.

For ISO13849-1 and EN/IEC62061 this last step involves using manufacturers' data for the reliability of the components, including the calculation of MTTFd (Mean Time to Dangerous Failure) and DC (Diagnostic Capability) and accounting for common mode failure of components.
PL data for each IDEM device is shown in the specification table on the product page.

EN/IEC62061 Machine Safety- Functional safety of electrical, electronic and programmable electronic control systems.
Safety-related electrical control systems in machines (SRECS) are playing an increasing role in ensuring the overall safety of machines and are more and more frequently using complex electronic technology. EN/IEC62061 is a machinery sector standard and is derived from the more complex EN/IEC61508 (Functional safety of electrical/electronic/programmable electronic safety-related systems). EN/IEC62061 describes both the amount of risk to be reduced and the ability of a control system to reduce that risk in terms of SIL (Safety Integrity Level). There are 3 SILs used in the machinery sector, SIL1 is the lowest and SIL3 is the highest. Risks of greater magnitude can occur in other sectors such as the process industry and for that reason EN/IEC61508 includes SIL4. A SIL applies to a safety function. The subsystems that make up the system that implements the safety function must have an appropriate SIL capability. This is sometimes referred to as the SIL Claim Limit (SIL CL).
The detailed requirements and steps to ensure compliance with EN/IEC62061 are too complex to be covered in detail here.

PL and SIL Level
EN/ISO13849-1 uses the term PL (Performance Level), EN/IEC62061 will use SIL, and in many respects the five performance levels PLa to PLe can be related to SIL. Figure 3 shows the approximate relationship between PL and SIL when applied to typical circuit structures achieved by low complexity electro-mechanical technology e.g. a Switch with a Safety Monitoring Relay. This is for general guidance and to help show the relationship between the two standards. It should not be used for direct conversion purposes.

Figure 3

PL (Performance Level)	PFHd (Probability of a failute to danger per hour)	SIL (Safety Integrity Level)
a	$\geq 10^{-5}$ to $< 10^{4}$	none
b	$\geq 3 \times 10^{-6}$ to $< 10^{-5}$	1
c	$\geq 10^{-6}$ to $< 3 \times 10^{-6}$	1
d	$\geq 10^{-7}$ to $< 10^{-6}$	2
e	$\geq 10^{-8}$ to $< 10^{-7}$	3

Explosion Proof Safety Switches

IDEM's range of Explosion Proof Safety Switches have been developed to satisfy the latest IECEx and ATEX standards and provide explosion proof switching to satisfy the hazardous conditions created within the petro-chemical, pharmaceutical, food processing and packaging industries. They combine explosion proof protection and satisfy high functional safety requirements all in one device.

FEATURES:

- SAFETY SWITCHES FOR USE IN HAZARDOUS AREAS GAS AND DUST
- HIGH STRENGTH PLASTIC, DIE CAST OR STAINLESS STEEL 316
- HIGH TEMPERATURE STABILITY UP TO 80°C
- FUNCTIONAL SAFETY UP TO PLe ISO13849-1
- IP69K SUITABLE FOR HARSH ENVIRONMENTS
- ELECTRICAL SWITCHING ELEMENTS FULLY ENCAPSULATED
- RESISTANT TO HIGH TEMPERATURE HOSING AND DETERGENT WASH DOWN - IP67 RATING

APPLICATION:

Interlock and Emergency Stop Safety Switches for use in hazardous areas - positively operated contacts or high life non contact dry reed switching.
For use in hazardous areas IECEx and ATEX IIC T6. (Gas and Dust).
Designed for petro-chemical, pharmaceutical and food processing and packaging applications where explosive atmospheres exist.

Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb	Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db	Mechanical Interlock Switches and Emergency Stop Switches
II 2G Ex mb IIC T6 Gb	II 2D Ex mb IIIC T80C Db	Non Contact Magnetic Interlock Switches

IDEM explosion proof safety interlock switches are designed to fit to the leading edge of sliding, hinged or lift off machine guards to provide safe electrical switching within explosion risk environments like petro-chemical, pharmaceutical, food production and packaging. IDEM explosion proof rope pull switches are designed to provide protection to conveyors used in hazardous areas like beverage production and chemical handling.
In addition to explosion proof switching and depending upon the risk assessment for the application, they can also be used in combination with any dual channel safety monitoring relays to provide high functional safety up to Category 4 and PLe ISO13849-1 or SIL3 EN62061.

Tongue and Emergency Stop Switches

Zones 1,21,2,22
High power switching up to 230Vac 4A
Positive break contacts to EN60947-5-1
USR - For use in CLass 1, Zone 1, AEx dbIIC Hazardous Locations
CNR - For use in Class 1, Zone 1, Ex db IIC Hazardous Locations

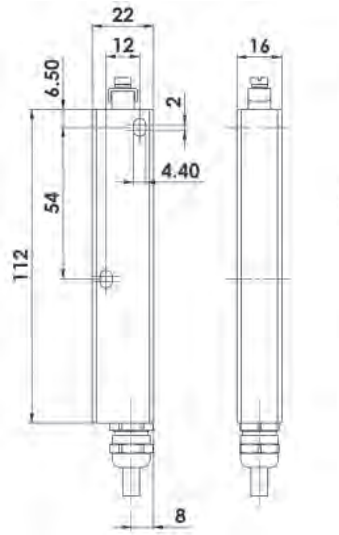
Non Contact Switches

Zones 0,20,1,21,2,22
Highly reliable high power reed switching elements
Contacts de-rated and protected by internal fuses
High tolerance to guard misalignment

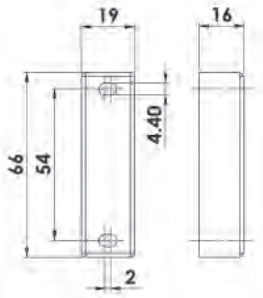
Explosion Proof Non Contact Safety Interlock Switches

CM1-Ex STAINLESS STEEL 316

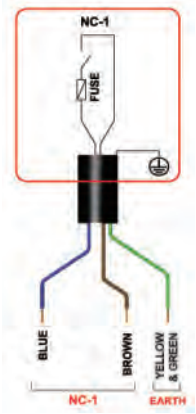
II 2G Ex mb IIC T6 Gb **II 2D Ex mb IIIC T80 Db IP67*** **Zones 1, 21, 2, 22 Gas and Dust**



SWITCH



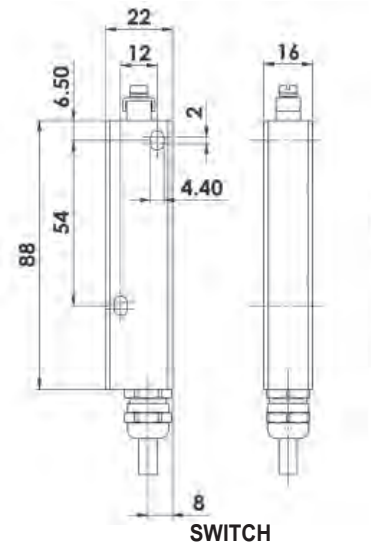
ACTUATOR



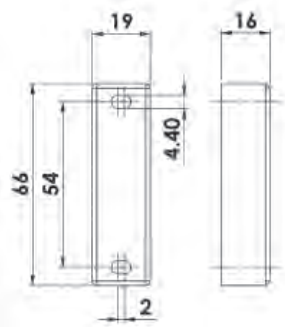
SALES NUMBER	TYPE ZONES 1,21,2,22	BODY HOUSING	CABLE LENGTH 6mm OD	CIRCUITS	ELECTRICAL RATING NORMALLY CLOSED CIRCUITS (Actuator Present) NC
901101	CM1-Ex	S/Steel	5M	1NC	230Vac/24Vdc 2A Max. INTERNALLY FUSED
901102	CM1-Ex	S/Steel	10M	1NC	

CM2-Ex STAINLESS STEEL 316

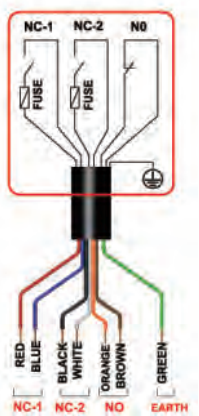
II 2G Ex mb IIC T6 Gb **II 2D Ex mb IIIC T80 Db IP67*** **Zones 1, 21, 2, 22 Gas and Dust**



SWITCH



ACTUATOR



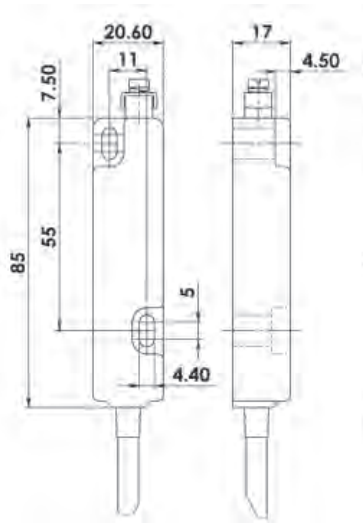
SALES NUMBER	TYPE ZONES 1,21,2,22	BODY HOUSING	CABLE LENGTH 6mm OD	CIRCUITS	ELECTRICAL RATING NORMALLY CLOSED CIRCUITS (Actuator Present) NC	ELECTRICAL RATING NORMALLY OPEN CIRCUITS (Actuator Present) NO
902103	CM2-Ex	S/Steel	5M	1NC	230Vac/24Vdc 1A Max. INTERNALLY FUSED	
902104	CM2-Ex	S/Steel	10M	1NC		
902105	CM2-Ex	S/Steel	5M	2NC 1NO	230Vac/24Vdc 0.6A Max. INTERNALLY FUSED	230Vac/24Vdc 200mA. Max.
902106	CM2-Ex	S/Steel	10M	2NC 1NO		

***Product is fully encapsulated which is considered to provide ingress protection to at least IP67.**

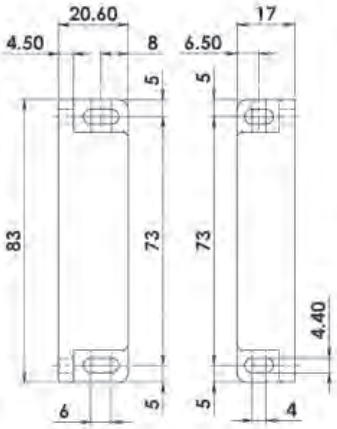
Explosion Proof Non Contact Safety Interlock Switches

CM3-Ex STAINLESS STEEL 316

II 2G Ex mb IIC T6 Gb **II 2D Ex mb IIIC T80 Db IP67*** **Zones 1, 21, 2, 22 Gas and Dust**



SWITCH



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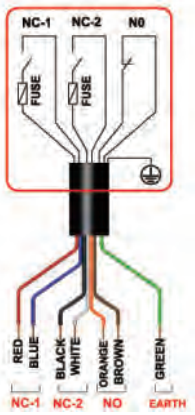
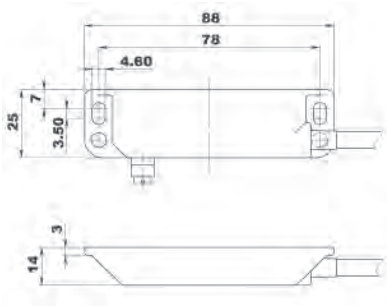


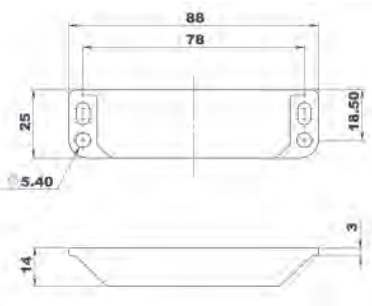
SALES NUMBER	TYPE ZONES 1,21,2,22	BODY HOUSING	CABLE LENGTH 6mm OD	CIRCUITS	ELECTRICAL RATING NORMALLY CLOSED CIRCUITS (Actuator Present) NC	ELECTRICAL RATING NORMALLY OPEN CIRCUITS (Actuator Present) NO
903101	CM3-Ex	S/Steel	5M	2NC 1NO	230Vac/24Vdc 0.6A Max. INTERNALLY FUSED	230Vac/24Vdc 200mA. Max.
903102	CM3-Ex	S/Steel	10M	2NC 1NO		

LM-Ex STAINLESS STEEL 316

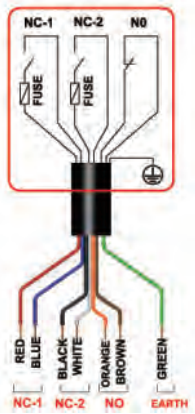
II 2G Ex mb IIC T6 Gb **II 2D Ex mb IIIC T80 Db IP67*** **Zones 1, 21, 2, 22 Gas and Dust**



SWITCH



ACTUATOR



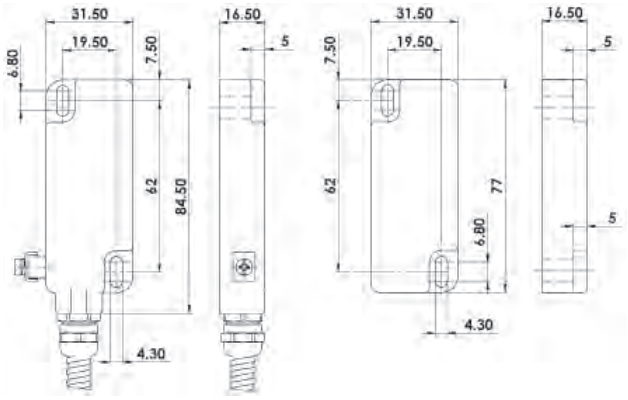
SALES NUMBER	TYPE ZONES 1,21,2,22	BODY HOUSING	CABLE LENGTH 6mm OD	CIRCUITS	ELECTRICAL RATING NORMALLY CLOSED CIRCUITS (Actuator Present) RED/BLUE NC1 WHITE/BLACK NC2	ELECTRICAL RATING NORMALLY OPEN CIRCUITS (Actuator Present) ORANGE/BROWN NO
904101	LM-Ex	S/Steel	5M	2NC 1NO	230Vac/24Vdc 0.6A Max. INTERNALLY FUSED	230Vac/24Vdc 200mA. Max.
904102	LM-Ex	S/Steel	10M	2NC 1NO		

*Product is fully encapsulated which is considered to provide ingress protection to at least IP67.

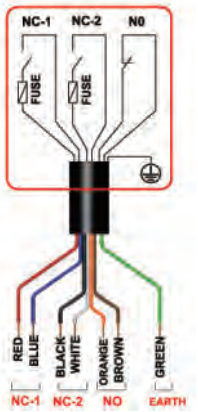
Explosion Proof Non Contact Safety Interlock Switches

WM1-Ex STAINLESS STEEL 316 (supplied fitted with Stainless Steel Flexible Conduit)

II 1G Ex ma IIC T6 Ga **II ID Ex ma IIIC T80 Da IP67*** **Zones 0, 20, 1, 21, 2, 22 Gas and Dust**



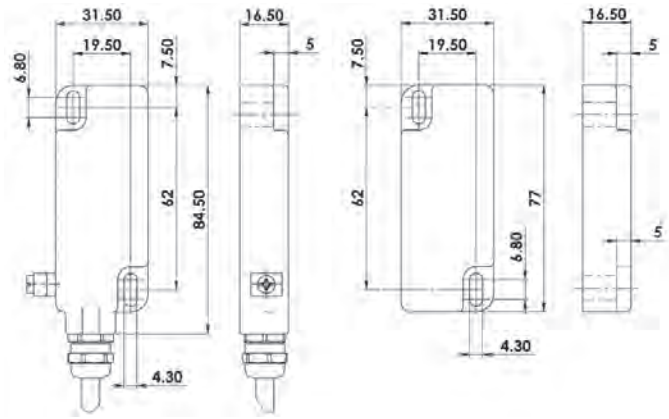
SWITCH ACTUATOR



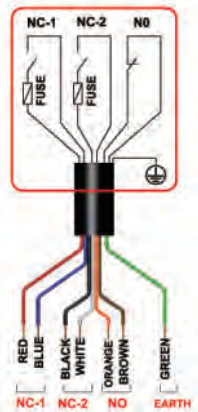
SALES NUMBER	TYPE ZONES 0,20	BODY HOUSING	CABLE/ CONDUIT LENGTH 10mm OD	CIRCUITS	ELECTRICAL RATING NORMALLY CLOSED CIRCUITS (Actuator Present) RED/BLUE NC1 WHITE/BLACK NC2	ELECTRICAL RATING NORMALLY OPEN CIRCUIT (Actuator Present) ORANGE/BROWN NO
900101	WM1-Ex	S/Steel	5M	2NC 1NO	230Vac/24Vdc 0.6A Max. INTERNALLY FUSED	230Vac/24Vdc 200mA. Max.
900102	WM1-Ex	S/Steel	10M	2NC 1NO		

WM2-Ex STAINLESS STEEL 316

II 2G Ex mb IIC T6 Gb **II 2D Ex mb IIIC T80 Db IP67*** **Zones 1, 21, 2, 22 Gas and Dust**



SWITCH ACTUATOR



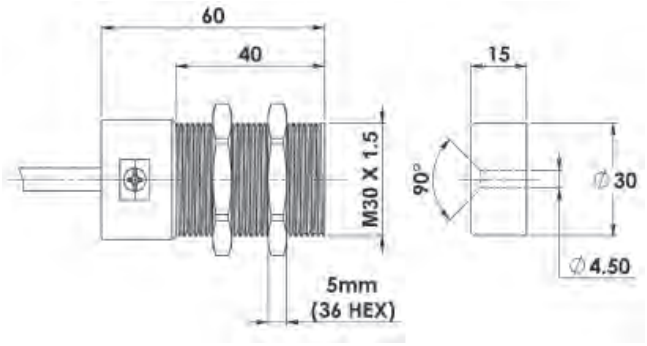
SALES NUMBER	TYPE ZONES 1,21,2,22	BODY HOUSING	CABLE LENGTH 6mm OD	CIRCUITS	ELECTRICAL RATING NORMALLY CLOSED CIRCUITS (Actuator Present) RED/BLUE NC1 WHITE/BLACK NC2	ELECTRICAL RATING NORMALLY OPEN CIRCUITS (Actuator Present) ORANGE/BROWN NO
900201	WM2-Ex	S/Steel	5M	2NC 1NO	230Vac/24Vdc 2A Max. INTERNALLY FUSED	230Vac/24Vdc 200mA. Max.
900202	WM2-Ex	S/Steel	10M	2NC 1NO		

***Product is fully encapsulated which is considered to provide ingress protection to at least IP67.**

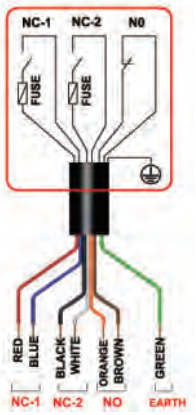
Explosion Proof Non Contact Safety Interlock Switches

RM-Ex STAINLESS STEEL 316 M30 x 1.5mm threaded body

II 2G Ex mb IIC T6 Gb **II 2D Ex mb IIIC T80 Db IP67*** **Zones 1, 21, 2, 22 Gas and Dust**



SWITCH ACTUATOR



SALES NUMBER	TYPE ZONES 1,21,2,22	BODY HOUSING	CABLE LENGTH 6mm OD	CIRCUITS	ELECTRICAL RATING NORMALLY CLOSED CIRCUITS (Actuator Present) RED/BLUE NC1 WHITE/BLACK NC2	ELECTRICAL RATING NORMALLY OPEN CIRCUITS (Actuator Present) ORANGE/BROWN NO
905101	RM-Ex	S/Steel	5M	2NC 1NO	230Vac/24Vdc 0.6A Max. INTERNALLY FUSED	230Vac/24Vdc 200mA. Max.
905102	RM-Ex	S/Steel	10M	2NC 1NO		

Explosion Proof Non Contact Safety Interlock Switches

SUMMARY SPECIFICATION AND SELECTION GUIDE:

SWITCH TYPE	HOUSING MATERIAL	PART NUMBER SERIES	MAXIMUM CURRENT	ZONES
WM1-Ex	Stainless Steel 316 and fitted with Stainless Steel Flexible Conduit	9001.....	0.6A	Zone 0 Gas Zone 20 Dust (An area where Gas and Dust are continuously present)
WM2-Ex	Stainless Steel 316	9002.....	2.0A	Zone 1 Gas Zone 21 Dust Zone 2 Gas Zone 22 Dust (An area where Gas and Dust is likely to occur in use)
CM1-Ex	Stainless Steel 316	901.....	2.0A	
CM2-Ex	Stainless Steel 316	902.....	1.0A / 0.6A	
CM3-Ex	Stainless Steel 316	903.....	0.6A	
LM-Ex	Stainless Steel 316	904.....	0.6A	
RM-Ex	Stainless Steel 316	905.....	0.6A	

TECHNICAL AND SAFETY SPECIFICATIONS:

Standards: IEC/EN60079-0 IEC/EN60079-18
ISO14119 EN60947-5-3 EN60204-1
ISO13849-1 EN62061

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm

Switching Distance	Sao 10mm Close
(Target to Time)	Sar 22mm Open
Approach Speed	200mm/m to 1000mm/s
Temperature Range	-20/+80 (or +60C for 2A version)
Enclosure Protection	IP67
Shock Resistance	IEC 68-2-27 11ms 30g
Vibration Resistance	IEC 68-2-6 10-55Hz 1mm
Body Material	Stainless Steel 316
Cable Type	6mm OD
Mounting Position	Any
Approval Body	BASEEFA UK

***Product is fully encapsulated which is considered to provide ingress protection to at least IP67.**

Explosion Proof Emergency Stop Switches

Emergency Stop Switches with ATEX EExd IIC T6 certified explosion proof contact blocks.
The internal explosion proof contact blocks (Type LS-EX) conform to European harmonized standard EN60079-0 and EN60079-1 and can be used in European Zone 1, 2, 21, 22 environments. (Gas and Dust).
Designed to the latest standard ISO13850, the switch mechanism will latch the instant the safety contacts open.
Designed for use in oil, petro-chemical, pharmaceutical, food processing and packaging applications where the potential for explosive atmospheres are present.

Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb **Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db**

ESL-SS(P)-Ex ESL-SS-Ex STANDARD DUTY MUSHROOM BUTTON TYPES

Protection shroud and lock off versions
Special Lid Safety Trip Mechanism - contacts will open if the lid is removed
Positive break contacts to EN60947-5-1
Resistant to high temperature hosing and detergent washdown.
Outer enclosure protected to IP67 and IP69K
Robust Stainless Steel 316 housings
Pre-wired 1NC 1NO, 2NC or 2NC 2NO contacts


ESL-SS(P)-Ex


ESL-SS-Ex

GLES-Ex GLES-SS-Ex HEAVY DUTY MUSHROOM BUTTON TYPES

High impact robust housings -
Die Cast (painted yellow) or Stainless Steel 316
Button mounted on top of enclosure
Positive break contacts to EN60947-5-1
Resistant to high temperature hosing and detergent washdown.
Outer enclosure protected to IP67 and IP69K
Available with up to 4 pole contacts
1NC 1NO, 2NC, 3NC 1NO or 2NC 2NO contacts

GLES-Ex

GLES-SS-Ex

GLS-Ex GLS-SS-Ex STANDARD DUTY ROPE PULL TYPES

High impact robust housings -
Die Cast (painted yellow) or Stainless Steel 316
Positive break contacts to EN60947-5-1
Resistant to high temperature hosing and detergent washdown
Outer enclosure protected to IP67 and IP69K
Available with up to 4 pole contacts
1NC 1NO, 2NC, or 2NC 2NO contacts


GLS-Ex
Protects up to 80m


GLS-SS-Ex
Protects up to 100m

GLH-Ex GLH-SS-Ex HEAVY DUTY ROPE PULL TYPES


GLHD-SS-Ex


GLHL-Ex


GLHD-Ex

Dual Head version covers up to 250m with one switch or can be connected in series with other switches to protect long lengths up to 4Km.

High impact robust housings -
Die Cast Metal or Stainless Steel 316
Available with up to 4 pole contacts

Button mounted on top of enclosure
Resistant to high temperature hosing
1NC 1NO, 2NC, 3NC 1NO or 2NC 2NO

Positive break contacts to EN60947-5-1
Outer enclosure protected to IP67 and IP69K

TECHNICAL AND SAFETY SPECIFICATIONS:

Standards: IEC/EN60079-0 IEC/EN60079-1
ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061

Safety Classification and Reliability Data:

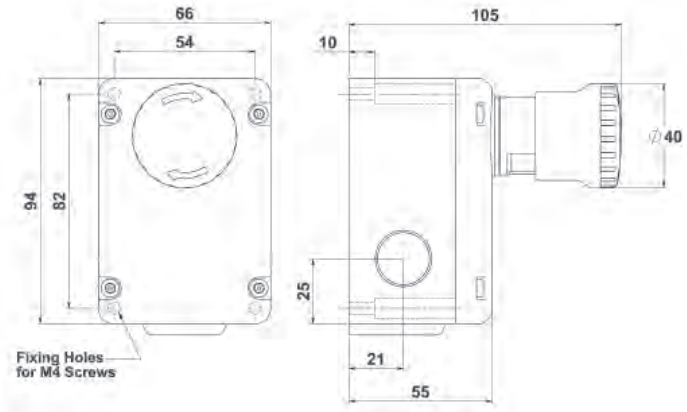
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
	MTTFd 214 years
Enclosure Protection	IP69K IP67
Operating Temperature	-20C +60C
Vibration	IEC 68-2-6 10-50Hz + 1Hz
	Excursion 0.35mm 1 octave/min
Internal Contact Switch	Type LS-EX
Classification	Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
	Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db
Rated Voltage	250Vac
Rated Current	2 Pole 4.0A 4 Pole 2.5A
Cable Length	3m

Explosion Proof Emergency Stop Switches

ESL-SS(P)-Ex ESL-SS-Ex STANDARD DUTY MUSHROOM BUTTON TYPES

ZONES 1 and 2 ZONES 21 and 22 GAS and DUST

(P) versions are built with a button protection shroud and padlock holes that enable lock off - especially useful in maintenance situations.



ESL-SS(P)-Ex

ESL-SS-Ex

All switches are pre-wired with 3m length of cabling through the cable glands as shown. Other lengths and cable exits available on request.

SALES NUMBER	TYPE	CONTACTS
232015	ESL-SS(P)-Ex	1NC 1NO
232016	ESL-SS(P)-Ex	2NC
232030	ESL-SS(P)-Ex	2NC 2NO
232007	ESL-SS-Ex	1NC 1NO
232008	ESL-SS-Ex	2NC
232029	ESL-SS-Ex	2NC 2NO

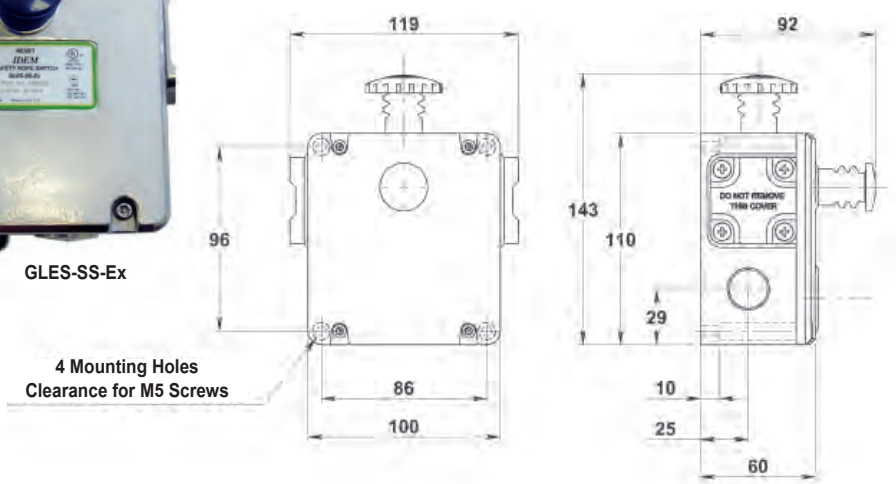
GLES-Ex GLES-SS-Ex HEAVY DUTY MUSHROOM BUTTON TYPES

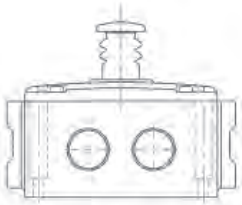
ZONES 1 and 2 ZONES 21 and 22 GAS and DUST

GLES-Ex

GLES-SS-Ex

All switches are pre-wired with 3m length of cabling through the cable glands as shown. Other lengths and cable exits available on request.





All Dimensions in mm

SALES NUMBER	TYPE	CONTACTS
146003	GLES-Ex	1NC 1NO
146004	GLES-Ex	3NC 1NO
146005	GLES-Ex	2NC
146006	GLES-Ex	2NC 2NO
147003	GLES-SS-Ex	1NC 1NO
147004	GLES-SS-Ex	3NC 1NO
147005	GLES-SS-Ex	2NC
147006	GLES-SS-Ex	2NC 2NO

Explosion Proof Emergency Stop Switches

ROPE PULL EMERGENCY STOP SWITCHES

ZONES 1 and 2 **ZONES 21 and 22** **GAS and DUST**

GLHL-Ex

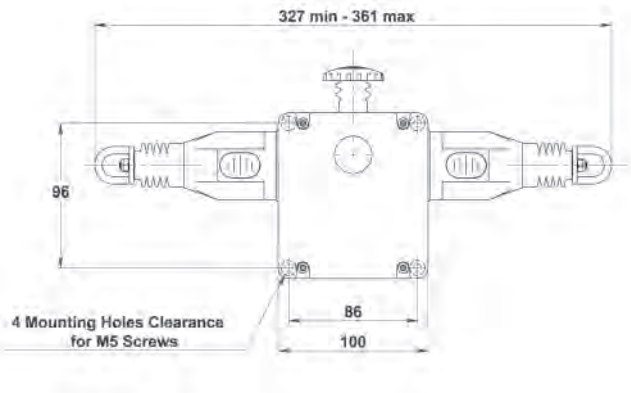
GLHD-Ex

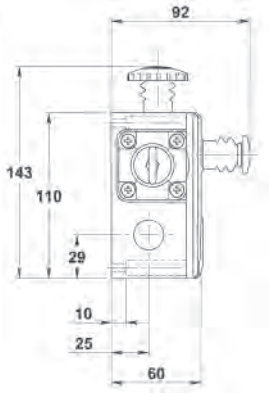
GLHR-Ex

GLHL-SS-Ex

GLHD-SS-Ex

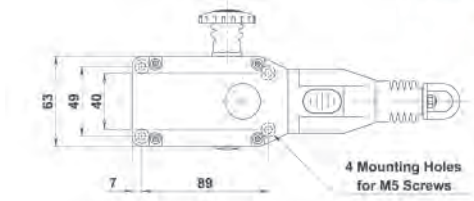
GLHR-SS-Ex



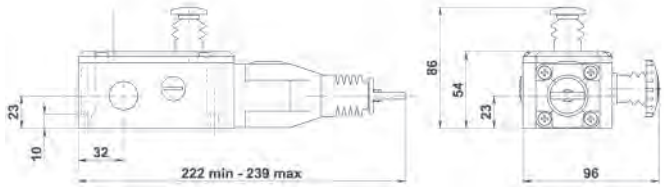


GLS-SS-Ex

GLS-Ex



All Dimensions in mm



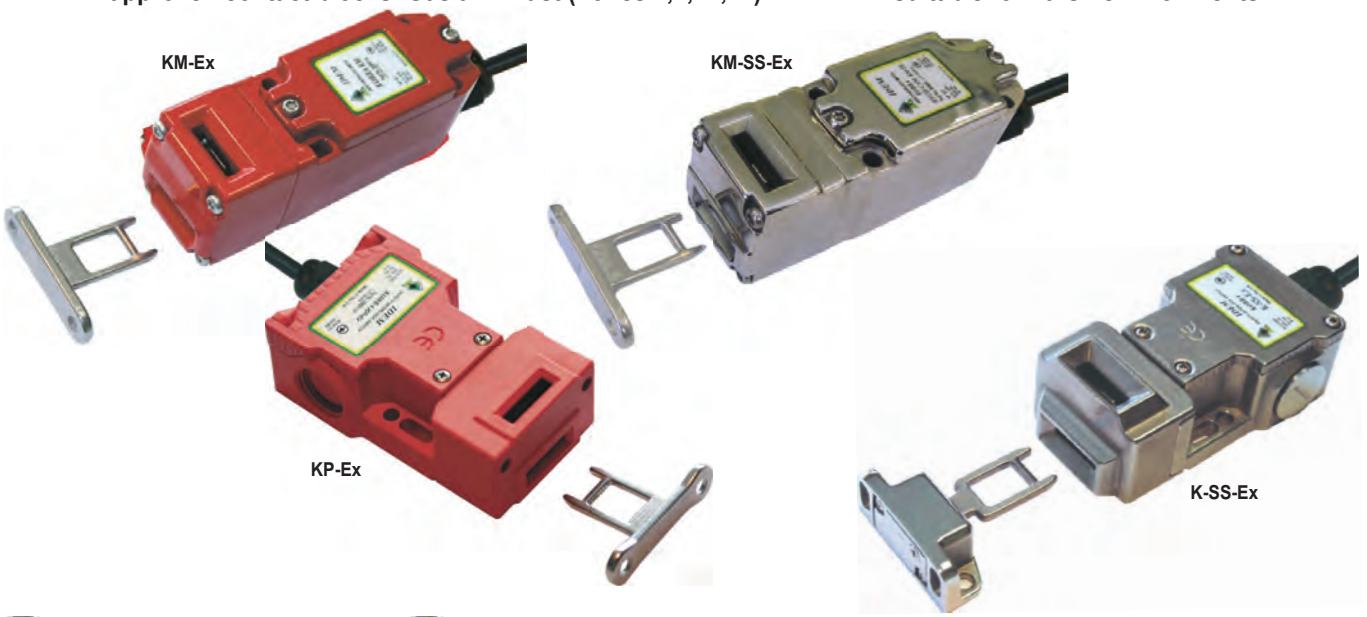
SALES NUMBER	TYPE	CONTACTS
141003	GLHD-Ex	1NC 1NO
141014	GLHD-Ex	3NC 1NO
141017	GLHD-Ex	2NC
141018	GLHD-Ex	2NC 2NO
141007	GLHL-Ex	1NC 1NO
141015	GLHL-Ex	3NC 1NO
141019	GLHL-Ex	2NC
141020	GLHL-Ex	2NC 2NO
141011	GLHR-Ex	1NC 1NO
141016	GLHR-Ex	3NC 1NO
141021	GLHR-Ex	2NC
141022	GLHR-Ex	2NC 2NO
145003	GLHD-SS-Ex	1NC 1NO
145014	GLHD-SS-Ex	3NC 1NO
145017	GLHD-SS-Ex	2NC
145018	GLHD-SS-Ex	2NC 2NO
145007	GLHL-SS-Ex	1NC 1NO
145015	GLHL-SS-Ex	3NC 1NO
145019	GLHL-SS-Ex	2NC
145020	GLHL-SS-Ex	2NC 2NO
145011	GLHR-SS-Ex	1NC 1NO
145016	GLHR-SS-Ex	3NC 1NO
145021	GLHR-SS-Ex	2NC
145022	GLHR-SS-Ex	2NC 2NO
142025	GLS-Ex	1NC 1NO
142028	GLS-Ex	2NC
142030	GLS-Ex	2NC 2NO
144025	GLS-SS-Ex	1NC 1NO
144026	GLS-SS-Ex	2NC
144030	GLS-SS-Ex	2NC 2NO

All switches are pre-wired with 3m length of cabling through the cable glands as shown. Other lengths and cable exits available on request.

KOBRA - Explosion Proof Tongue Interlock Switches

Tongue Interlock Switches for use in hazardous areas.
ATEX approved contact blocks. Gas and Dust (Zones 1,2,21,22)

Functional Safety up to PLe ISO13849-1
IP69K suitable for harsh environments



Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb **Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db**

GENERAL:

Tongue Interlock Safety Switches for use in hazardous areas - positively operated ATEX Certified contact blocks.
For use in hazardous areas IECEx and ATEX EExd IIC T6 (Gas and Dust).
The internal explosion proof contact blocks (Type LS-EX) conform to harmonized standards IEC/EN60079-0 and IEC/EN60079-1.
Suitable for European Zones 1, 2, 21, 22.
Designed for use in the petro-chemical, pharmaceutical, food processing and packaging industries where explosive environments may be present.

APPLICATION:

IDEM ATEX approved Tongue operated Safety Interlock switches are designed to fit to the leading edge of sliding, hinged or lift off machine guards to provide positively operated switching contacts and provide a tamper resistant, not easily defeatable key mechanism.
They are designed to provide robust position interlock detection for moving guards within areas which have an explosion risk atmosphere.
Depending upon the risk assessment for the application, they can be used independently to provide positive interlocking to EN60947-5-1 or they can be used in combination with any dual channel safety monitoring relays to provide functional safety up to PLe ISO13849-1 or SIL3 EN62061.

OPERATION:

The switch is rigidly mounted to the frame of the guard or machine. The actuator is fitted to the moving part (frame) of the guard and is aligned to the switch entry aperture. The actuator profile is designed to match a cam mechanism within the switch head and provides a positively operated not easily defeatable interlock switch. When the actuator is inserted into the switch the safety contacts close and allow the machine start circuit to be enabled. When the actuator is withdrawn from the switch the safety contacts are positively opened and the machine circuit is broken. The internal contact blocks are robust, fully encapsulated and pre-wired.

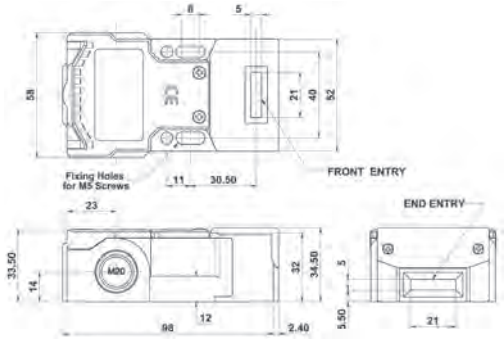
FEATURES:

- High Power Switching up to 230Vac 4A
- Contacts - 1NC 1NO or 2NC or 2NC 2NO
- High tolerance to guard misalignment
- Outer enclosure protection to IP67 and IP69K
- Conformance to EN60947-5-1 Positively operated contacts
- Resistant to high temperature hosing and detergent washdown
- Two enclosure shapes available
- Housings in either Plastic, Die Cast (painted red) or Stainless Steel 316
- High temperature stability up to 60C
- Resistance to many organic and inorganic chemicals
- Rotatable heads that give up to 8 actuator entry positions
- Choice of actuators to suit mounting conditions and alignment

ACTUATOR OPTIONS

KOBRA - Explosion Proof Tongue Interlock Switches

KOBRA KP-Ex Explosion Proof Tongue Interlock Switch

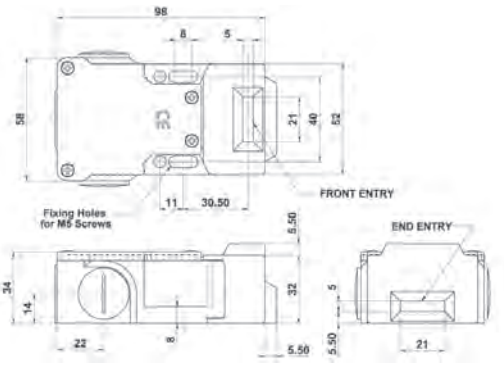


Polyester Housing
Zones 1, 2, 21, 22 Gas and Dust
IP67

SALES NUMBER	TYPE	PRE-WIRED	CONTACTS
200016	Kobra KP-Ex	3m 4 core	1NC 1NO
200019	Kobra KP-Ex	3m 4 core	2NC
200026	Kobra KP-Ex	3m 8 core	2NC 2NO
Stainless Steel Head Version		Add SS to Sales Part Number	

Add Actuator code to part number:
A-Standard, F-Flat, PF-Plastic Flexible, HF- Heavy Flexible, HFH-Heavy Flexible S/Steel

KOBRA K-SS-Ex Explosion Proof Tongue Interlock Switch

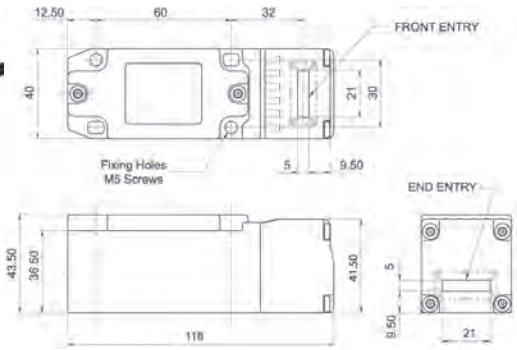


Stainless Steel 316 Housing
Zones 1, 2, 21, 22
Gas and Dust IP67

SALES NUMBER	TYPE	PRE-WIRED	CONTACTS
208016	Kobra K-SS-Ex	3m 4 core	1NC 1NO
208019	Kobra K-SS-Ex	3m 4 core	2NC
208026	Kobra K-SS-Ex	3m 8 core	2NC 2NO

Add Actuator code to part number:
A-Standard, F-Flat, PF-Plastic Flexible, HF- Heavy Flexible, HFH-Heavy Flexible S/Steel

KOBRA KM-Ex Explosion Proof Tongue Interlock Switch

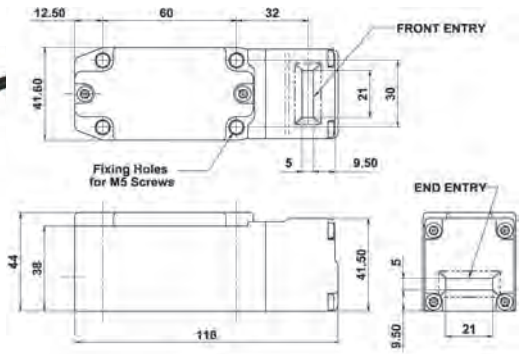


Die Cast Housing (painted red)
Zones 1, 2, 21, 22
Gas and Dust IP67

SALES NUMBER	TYPE	PRE-WIRED	CONTACTS
203016	Kobra KM-Ex	3m 4 core	1NC 1NO
203019	Kobra KM-Ex	3m 4 core	2NC
203026	Kobra KM-Ex	3m 8 core	2NC 2NO
Stainless Steel Head Version		Add SS to Sales Part Number	

Add Actuator code to part number:
A-Standard, F-Flat, PF-Plastic Flexible, HF- Heavy Flexible, HFH-Heavy Flexible S/Steel

KOBRA KM-SS-Ex Explosion Proof Tongue Interlock Switch



Stainless Steel 316 Housing
Zones 1, 2, 21, 22
Gas and Dust IP67

SALES NUMBER	TYPE	PRE-WIRED	CONTACTS
204016	Kobra KM-SS-Ex	3m 4 core	1NC 1NO
204019	Kobra KM-SS-Ex	3m 4 core	2NC
204026	Kobra KM-SS-Ex	3m 8 core	2NC 2NO

Add Actuator code to part number:
A-Standard, F-Flat, PF-Plastic Flexible, HF- Heavy Flexible, HFH-Heavy Flexible S/Steel

Standards: IEC/EN60079-0 IEC/EN60079-1
ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
	MTTFd 356 years
Travel for Positive Opening	8mm
Actuator Entry Minimum Radius	175mm Standard

Enclosure Protection	IP69K IP67
Operating Temperature	-20C +60C
Vibration	IEC 68-2-6 10-50Hz + 1Hz
	Excursion 0.35mm 1 octave/min
Internal Contact Switch	Type LS-EX
Classification	Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
	Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db
Rated Voltage	250Vac
Rated Current	2 Pole 4.0A 4 Pole 2.5A
Cable Length	3m

KOBRA - Tongue Operated Safety Interlock Switches

APPLICATION:

IDEM Tongue operated Safety Interlock switches are designed to fit to the leading edge of sliding, hinged or lift off machine guards to provide positively operated switching contacts and provide a tamper resistant, not easily defeatable key mechanism.
They are designed to provide robust position interlock detection for moving guards.
Depending upon the risk assessment for the application, they can be used independently to provide positively operated contacts to EN60947-5-1 or they can be used in combination with any dual channel safety monitoring relays to provide up to Category 4 PLe ISO13849-1.
They are available in various materials and housing styles to provide complete flexibility of choice depending upon the application.
They offer a choice of contact blocks (including Explosion Proof) and various actuators to aid installation and maintain durability.

OPERATION:

The switch is rigidly mounted to the frame of the guard or machine. The actuator is fitted to the moving part (frame) of the guard and is aligned to the switch entry aperture. The actuator profile is designed to match a cam mechanism within the switch head and provides a positively operated not easily defeatable interlock switch. When the actuator is inserted into the switch the safety contacts close and allow the machine start circuit to be enabled. When the actuator is withdrawn from the switch the safety contacts are positively opened and the machine circuit is broken. Standard versions use high specification plastic or die-cast housings and are sealed to IP67 and provide long term protection against moisture ingress. For harsh applications like Food Processing, Pharmaceutical and Petro-Chemical Industries the Stainless Steel 316 range offers protection up to IP69K for use in high pressure chemical cleaning or CIP/SIP applications.

INCH-1 (Plastic)

8 Actuator entry positions - designed with a rotatable Stainless Steel 316 head
2 pole contact blocks
IP67 ingress protection
Miniature housing:
25mm wide 77mm long 18mm fixing

INCH-3 (Plastic)

8 Actuator entry positions - designed with a rotatable Stainless Steel 316 head
3 pole contact blocks
Choice of 3 conduit entries
IP67 ingress protection
25mm wide 103mm long 18mm fixing

IDIS-1 (Plastic)

8 Actuator entry positions - designed with a rotatable head
3 pole contact blocks or 2 pole snap action
32mm wide 97mm long 22mm fixing
IP67 ingress protection rating

K-15 (Plastic)

4 Actuator entry positions - designed with a rotatable head
Compact body with 3 conduit entries
3 pole contact blocks
54mm wide 86mm long 40mm fixing
Plastic or Stainless Steel 316 Head options
IP67 ingress protection rating

KP (Plastic)

4 Actuator entry positions - designed with a rotatable head
3 pole or 4 pole contact blocks
3 conduit entries
52mm wide 98mm long 40mm fixing
Plastic or Stainless Steel 316 Head options
IP67 ingress protection rating

KM (Die Cast Metal)

8 Actuator entry positions - designed with a rotatable head
3 pole or 4 pole contact blocks
40mm wide 118mm long 30mm fixing
IP67 ingress protection rating

KP and KM also provide the option of Explosion Proof pre-wired versions.

MK1-SS (Fully Stainless Steel 316)

8 Actuator entry positions - designed with a rotatable head
3 pole contact blocks
Compact 30mm housing
IP69K ingress protection
30mm wide 98mm long 22mm fixing

KM-SS (Fully Stainless Steel 316)

8 Actuator entry positions - designed with a rotatable head
3 pole or 4 pole contact blocks
42mm wide 118mm long 30mm fixing
IP69K ingress protection rating - high temperature hose down

K-SS (Fully Stainless Steel 316)

4 Actuator entry positions - designed with a rotatable head
3 pole or 4 pole contact blocks
3 conduit entries
52mm wide 99mm long 40mm fixing
IP69K ingress protection rating

KM-SS and K-SS also provide the option of Explosion Proof pre-wired versions.

Tongue Interlock Safety Switch **Type: INCH-1**

FEATURES:

IDEM INCH-1 Compact Safety Interlock switches are designed to provide position interlock detection for small moving guards.

They are designed to fit to the leading edge of sliding, hinged or lift off machine guards.

The rugged Stainless Steel actuator profile is designed to match a cam mechanism to provide a positively operated not easily defeated interlock mechanism.

The compact body only 25mm wide with 18mm fixing centres and rotatable head make them easy to install where space is restricted.

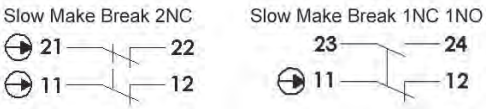
The rotatable heads have dual actuator entry positions to give up to 8 different entry positions.

A Plastic Flexible Actuator is available for tight radius guards.

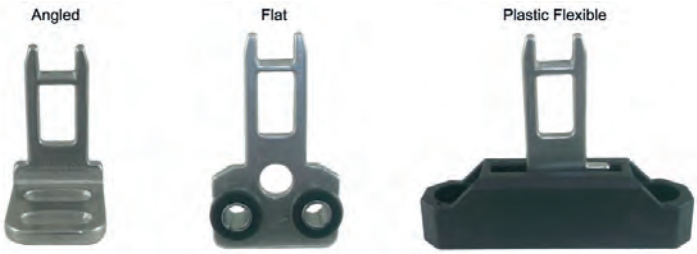
Contact blocks are replaceable 2NC or 1NC 1NO.

STAINLESS STEEL HEAD

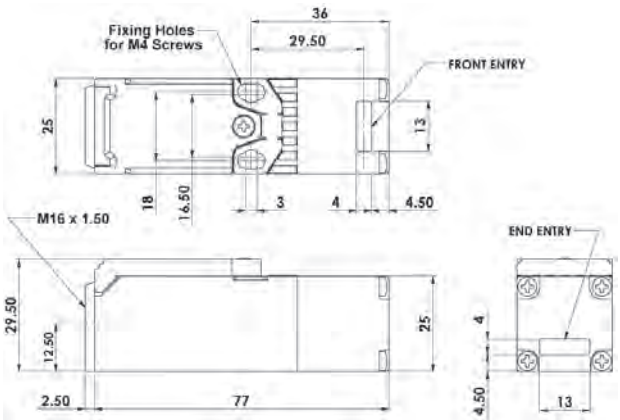
CONTACT BLOCK OPTIONS:



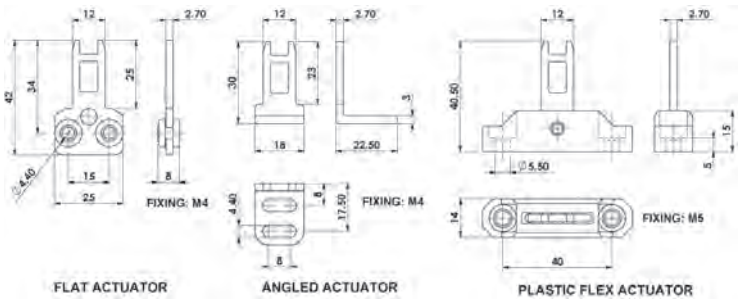
INCH-1 ACTUATOR OPTIONS:



PRODUCT DIMENSIONS:



ACTUATOR DIMENSIONS:



CONTACT OPERATION:

2NC: 4.0 0mm

11/12	Open	
21/22	Open	

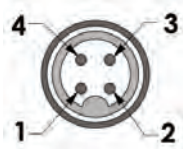
1NC 1NO: 4.5 4.0 0mm

11/12	Open	
23/24		Open

Stainless Steel Guide:
To assist with guard alignment IDEM recommend that you use the Stainless Steel Guide accessory (supplied with two stainless steel self-tapping screws).

SALES NUMBER - INCH 1 STAINLESS STEEL GUIDE	140179

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current	10A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	6mm
Actuator Entry Minimum Radius	150mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	UL approved glass fibre Polyester
Head Material	Stainless Steel 316
Enclosure Protection	IP67
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	M16
Fixing	2 x M4



Switch Circuit	Quick Connect (QC) M12 4 Way Male (on Flying Lead 250mm) Pin View from Switch
11/12	1 3
21/22 or 23/24	4 2

PRODUCT	CONTACTS	SALES NUMBER M16	SALES NUMBER QC M12 4 WAY
INCH-1 Switch	2NC	222001	222002
INCH-1 Switch	1NC 1NO	222003	222004
Actuator	Flat	Add F to Sales Number	
Actuator	Angled	Add A to Sales Number	
Actuator	Plastic Flexible	Add PF to Sales Number	

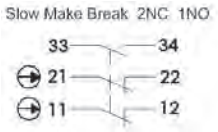
Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 222001-GC

Tongue Interlock Safety Switch **Type: INCH-3**

FEATURES:

IDEM INCH-3 Compact Safety Interlock switches are designed to provide position interlock detection for small moving guards.
They are designed to fit to the leading edge of sliding, hinged or lift off machine guards.
The rugged Stainless Steel actuator profile is designed to match a cam mechanism to provide a positively operated not easily defeated interlock mechanism.
The compact body, 18mm fixing profile and rotatable head make them easy to install where space is restricted.
The rotatable heads have dual actuator entry positions to give up to 8 different entry positions.
3 conduit entry points are available to give flexible mounting options.
Contact blocks are replaceable.

CONTACT BLOCK:

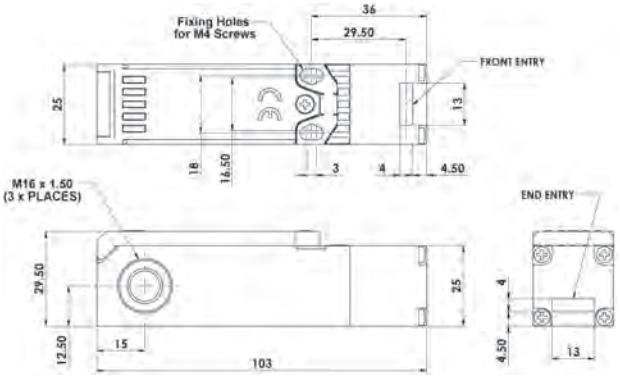


CONTACT OPERATION:

2NC 1NO 4.5 4.0 0mm

11/12	Open	
21/22	Open	
33/34		Open

PRODUCT DIMENSIONS:



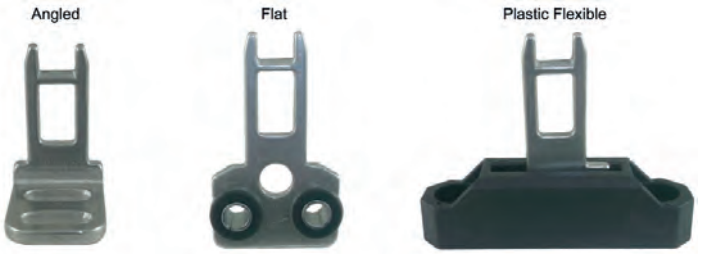
Stainless Steel Guide:
To assist with guard alignment IDEM recommend that you use the Stainless Steel Guide accessory (supplied with two stainless steel self-tapping screws).

SALES NUMBER - INCH 3 STAINLESS STEEL GUIDE	140179

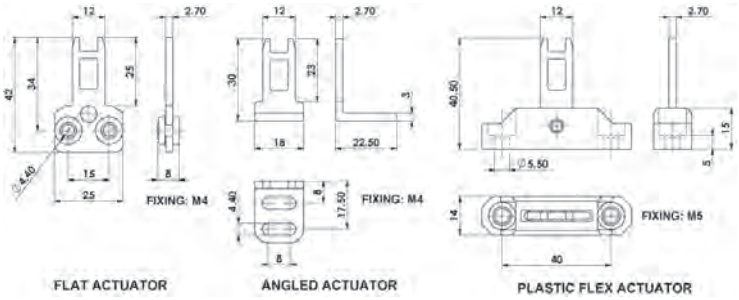
Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
11/12	1 7
21/22	6 5
33/34	4 3

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

INCH-3 ACTUATOR OPTIONS:



ACTUATOR DIMENSIONS:



Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current	10A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	6mm
Actuator Entry Minimum Radius	150mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	UL approved glass fibre Polyester
Head Material	Stainless Steel 316
Enclosure Protection	IP67
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	3xM16
Fixing	2 x M4

PRODUCT	CONTACTS	SALES NUMBER M16	SALES NUMBER QC M12 8 WAY
INCH-3 Switch	2NC 1NO	223001	223002
Actuator	Flat	Add F to Sales Number	
Actuator	Angled	Add A to Sales Number	
Actuator	Plastic Flexible	Add PF to Sales Number	

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 223001-GC

Tongue Interlock Safety Switch **Type: IDIS-1**

FEATURES:

IDEM IDIS-1 Compact Safety Interlock switches are designed to provide position interlock detection for small moving guards.

They are designed to fit to the leading edge of sliding, hinged or lift off machine guards.

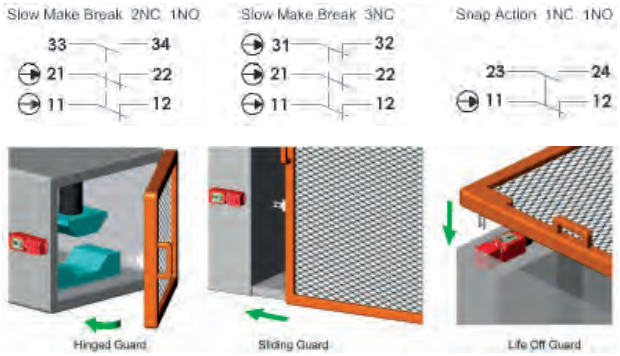
The rugged Stainless Steel actuator profile is designed to match a cam mechanism to provide a positively operated not easily defeatable interlock mechanism.

The compact body, 22mm fixing profile and rotatable head make them easy to install where space is restricted.

A Plastic Flexible Actuator is available for tight radius guards.

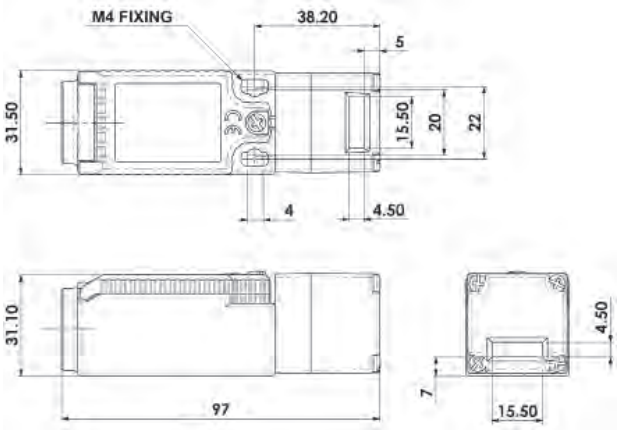
Contact blocks are replaceable with optional slow or snap break operation.

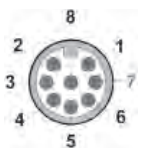
CONTACT BLOCK OPTIONS:



ACTUATOR OPTIONS:

DIMENSIONS:

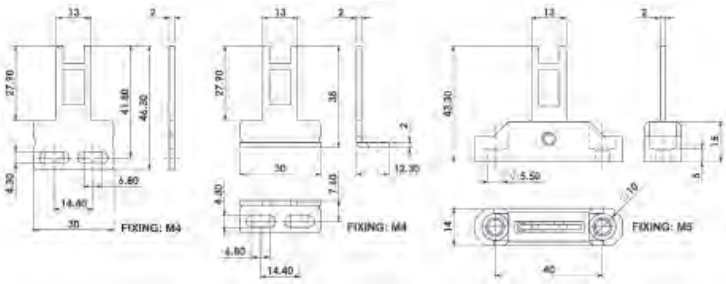




Quick Connect (QC) 1/2" UNF 6 Way Male (connector length 14mm) Pin View from Switch	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
1 5	11/12	1 7
2 6	21/22 or 23/24	6 5
3 4	33/34 or 31/32	4 3

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102
1/2" UNF	2m (6ft)	140141
1/2" UNF	5m (15ft)	140142

ACTUATOR DIMENSIONS:



Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current	10A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	6mm
Actuator Entry Minimum Radius	175mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	Polyester
Enclosure Protection	IP67
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M4

PRODUCT	CONTACTS	SALES NUMBER			
		M20	1/2" NPT	QC 1/2" UNF 6 WAY	QC M12 8 WAY
IDIS-1 Switch	2NC 1NO	190050	190051	190052	190053
IDIS-1 Switch	3NC	190054	190055	190056	190057
IDIS-1 Switch	1NC 1NO Snap	190058	190059	190060	190061
Actuator	Flat	Add F to Sales Number			
Actuator	Angled	Add A to Sales Number			
Actuator	Plastic Flexible	Add PF to Sales Number			

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 190050-GC

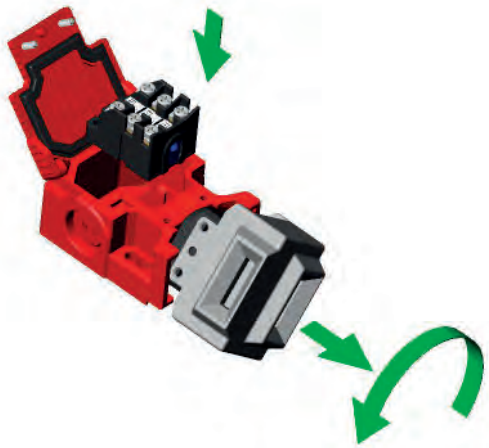
KOBRA - Tongue Operated Switch Type: K-15

FEATURES:

The K-15 Safety Interlock switch is designed to provide position interlock detection for moving guards.

They are designed to fit to the leading edge of sliding, hinged or lift off machine guards.

They offer a compact 86mm long body to fit to applications where space is restricted, yet offer 3 pole contacts and choice of 3 conduit entries for wiring versatility.

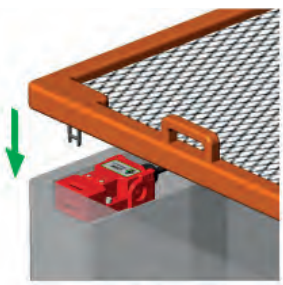


The head can be rotated to give 4 actuator entry positions.

Designed with a hinged lid to fit replaceable contact blocks.

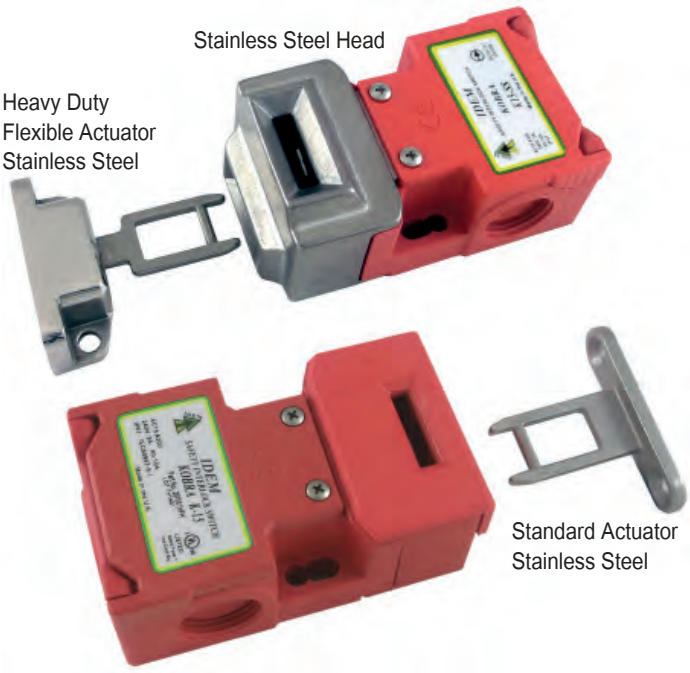
Flexible actuators are available and the K-15 is available with a Stainless Steel head.

Hinged Guard

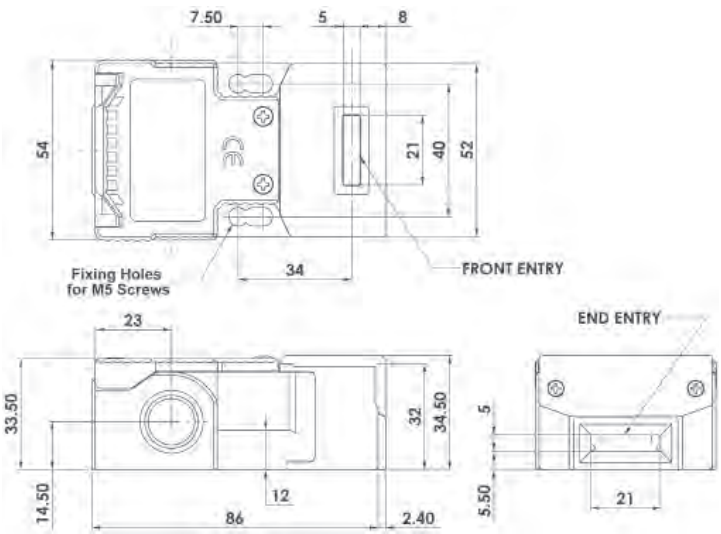


Lift Off Guard

Sliding Guard



DIMENSIONS:



Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

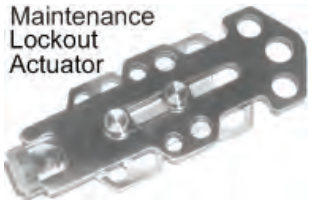
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	500Vac/2500Vac
Travel for Positive Opening	8mm
Actuator Entry Minimum Radius	175mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	Polyester
Head Material	Polyester or Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M5

KOBRA - Tongue Operated Switch **Type: K-15**

ACTUATOR OPTIONS (see p100)

CONTACT BLOCK OPTIONS:

ACCESSORIES (see p100-101)

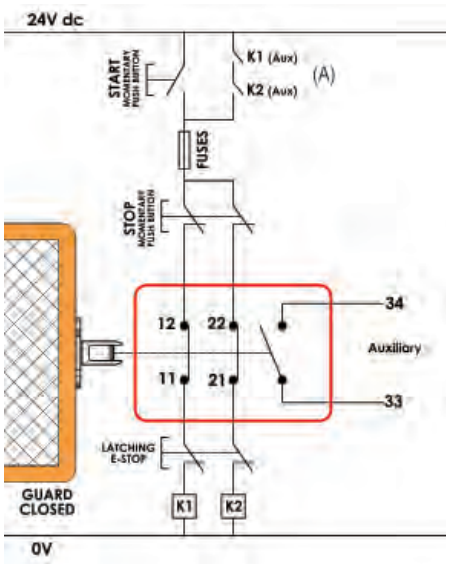


Fits to switch aperture during maintenance and provides multiple padlock holes.

Flat Actuator supplied with 300mm (12") chain. Can be used where poor alignment exists and provides manual insertion of actuator by operator.

2 colour LED (3 wires) Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

APPLICATION EXAMPLE



Guard Door Interlocked - Dual Channel (Non Monitored)

This system shows interlock switch circuits 11-12 and 21-22 configured to allow direct feed to contactor coils K1 and K2.

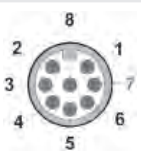
This provides Dual Channel wiring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

Opening the interlock switch or depressing the Emergency Stop will isolate power to the contactor coils.

Re-start can only occur providing the Guard is closed, and the Emergency Stop is reset.

The system is shown with the Machine Stopped, the Guard Closed and the contactors able to be energised.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102
1/2" UNF	2m (6ft)	140141
1/2" UNF	5m (15ft)	140142



Quick Connect (QC) 1/2" UNF 6 Way Male (connector length 14mm) Pin View from Switch	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
1 5	11/12	1 7
2 6	21/22 or 23/24	6 5
3 4	33/34 or 31/32	4 3

SALES NUMBER	CONTACTS	M20	1/2" NPT	QC 1/2" UNF 6 WAY	QC M12 8 WAY
K-15 Switch	2NC 1NO	207001	207002	207003	207008
K-15 Switch	3NC	207004	207005	207006	207009

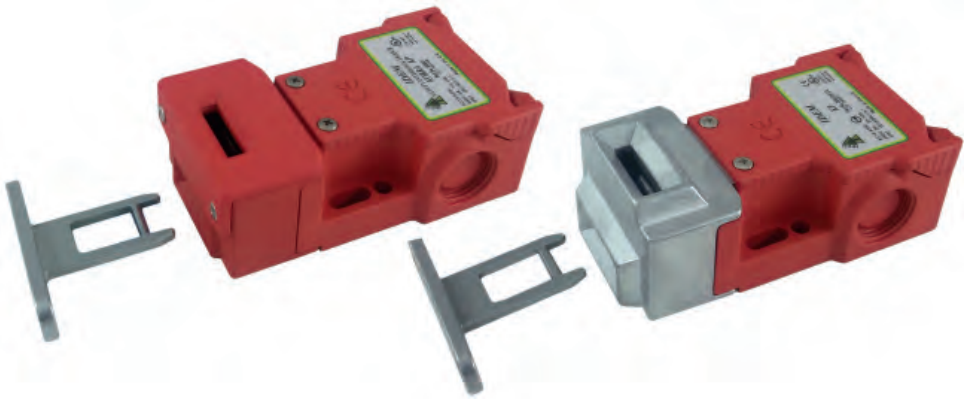
Actuator	Standard	Add A to Sales Part Number
Actuator	Flat	Add F to Sales Part Number
Actuator	Plastic Flexible	Add PF to Sales Part Number
Actuator	Heavy Duty Flexible	Add HF to Sales Part Number
Actuator	Heavy Duty S/Steel	Add HFH to Sales Part Number
Stainless Steel Head Version		Add SS to Sales Part Number
Actuator Holding 40N		Add 40N to Sales Part Number

Ordering example: Kobra K-15 M20 2NC 1NO with Standard Actuator and Stainless Steel Header Sales Number: 207001-A-SS
Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 207001-A-GC

Also available with 3NO Contacts for use as indication purposes only.
Please contact us for further information.

KOBRA - Tongue Operated Switch **Type: KP**

FEATURES:



The head can be rotated to give 4 actuator entry positions.

Designed with a hinged lid to fit replaceable contact blocks.

Flexible actuators are available and the KP is available with a Stainless Steel head.

IDEM KP Interlock switches are designed to provide position interlock detection for moving guards.

They are designed to fit to the leading edge of sliding, hinged or lift off machine guards.

They provide a forced disconnect of the safety contacts at the withdrawal of the actuator and have an anti-tamper not easily defeatable mechanism.

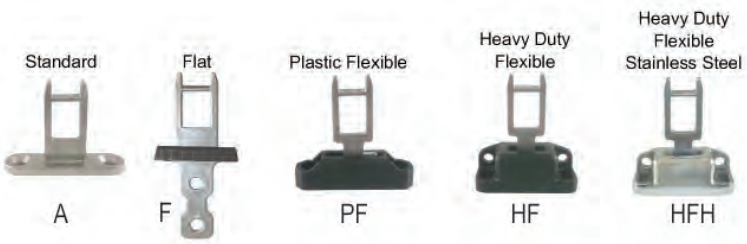
The head can be rotated to give 4 actuator entry positions. For extra durability, Flexible Actuators and Stainless Steel head versions are available.

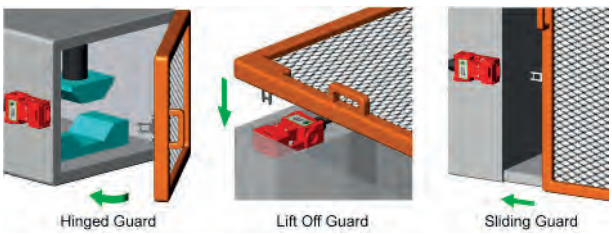
Contact blocks are replaceable with optional explosion proof versions. They are sealed to IP67 and survive most wash down solutions due to the high specification materials.

FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
3 pole, 4 pole or Explosion Proof Contact Blocks
Stainless Steel Head version available
Connects to most Safety Relays to give up to PLe Cat.4
Industry Standard Fitting:
52mm wide 98mm long 40mm fixing

ACTUATOR OPTIONS (see p100)

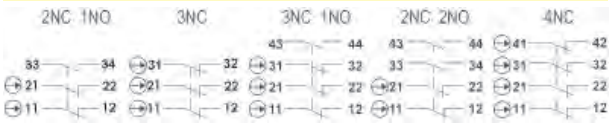




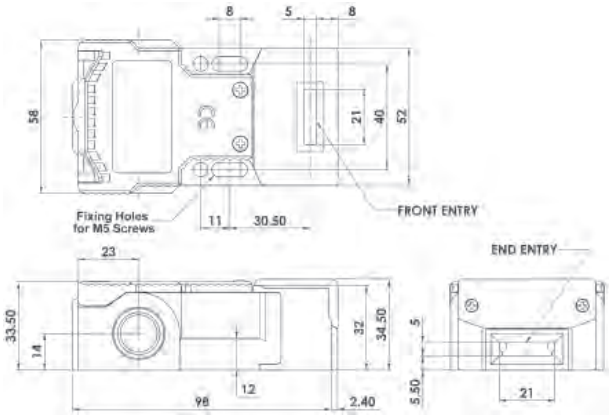
PRE-WIRED EXPLOSION PROOF:

CLASSIFICATION:
Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

CONTACT BLOCK OPTIONS:



DIMENSIONS:



Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	500Vac/2500Vac
Travel for Positive Opening	8mm
Actuator Entry Minimum Radius	175mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	Polyester
Head Material	Polyester or Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M5

KOBRA - Tongue Operated Switch **Type: KP**

CONTACT OPERATION AT WITHDRAWAL OF ACTUATOR

2NC 1NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
33/34		Open

3NC 1NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
31/32	Open	
43/44		Open

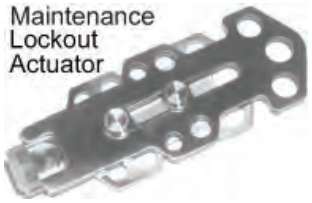
4NC 6.0 0mm

11/12	Open	
21/22	Open	
31/32	Open	
41/42	Open	

2NC 2NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

ACCESSORIES (see p100-101)

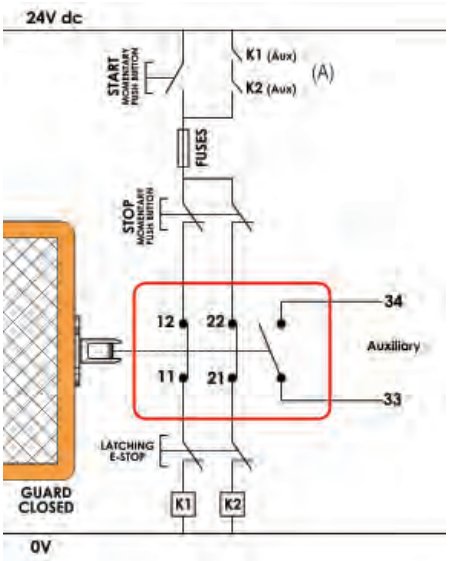


Fits to switch aperture during maintenance and provides multiple padlock holes.

Flat Actuator supplied with 300mm (12") chain. Can be used where poor alignment exists and provides manual insertion of actuator by operator.

2 colour LED (3 wires) Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

APPLICATION EXAMPLE



Guard Door Interlocked - Dual Channel (Non Monitored)

This system shows interlock switch circuits 11-12 and 21-22 configured to allow direct feed to contactor coils K1 and K2.

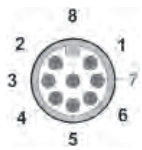
This provides Dual Channel wiring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

Opening the interlock switch or depressing the Emergency Stop will isolate power to the contactor coils.

Re-start can only occur providing the Guard is closed, and the Emergency Stop is reset.

The system is shown with the Machine Stopped, the Guard Closed and the contactors able to be energised.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102
1/2" UNF	2m (6ft)	140141
1/2" UNF	5m (15ft)	140142



Quick Connect (QC) 1/2" UNF 6 Way Male (connector length 14mm) Pin View from Switch	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
1 5	11/12	1 7
2 6	21/22	6 5
3 4	33/34 or 31/32	4 3
	41/42 or 43/44	8 2

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

SALES NUMBER	CONTACTS	M20	1/2" NPT	QC 1/2" UNF 6 WAY	QC M12 8 WAY
Kobra KP Switch	2NC 1NO	200001	200002	200003	200021
Kobra KP Switch	3NC	200004	200005	200006	200022
Kobra KP Switch	3NC 1NO	200007	200008		200023
Kobra KP Switch	2NC 2NO	200010	200011		200024
Kobra KP Switch	4NC	200013	200014		200025
Kobra KP Switch	1NC 1NO Ex	200016	3m 4 Core Ex		
Kobra KP Switch	2NC Ex	200019	3m 4 Core Ex		
Kobra KP Switch	2NC 2NO Ex	200026	3m 8 Core Ex		
Actuator	Standard	Add A to Sales Part Number			
Actuator	Flat	Add F to Sales Part Number			
Actuator	Plastic Flexible	Add PF to Sales Part Number			
Actuator	Heavy Duty Flexible	Add HF to Sales Part Number			
Actuator	Heavy Duty S/Steel	Add HFH to Sales Part Number			
Stainless Steel Head Version		Add SS to Sales Part Number			
Actuator Holding 40N (3 pole version only)		Add 40N to Sales Part Number			

Ordering example: Kobra KP M20 2NC 3NC with Stainless Steel Head and Heavy Duty Flexible Actuator Sales Number: 200004-HF-SS
Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 200001-A-GC

Also available with 3NO Contacts for use as indication purposes only.
Please contact us for further information.

SALES NUMBER	CONTACTS	M20			
Kobra KP Switch	3NO	200001			

KOBRA - Tongue Operated Switch (Metal) Type: KM

FEATURES:

IDEM KM Interlock switches are designed to provide position interlock detection for medium to heavy duty moving guards.

They have robust die-cast housings and are designed to fit to the leading edge of sliding, hinged or lift off machine guards. They provide a forced disconnect of the safety contacts at the withdrawal of the actuator and have an anti-tamper mechanism.

The rotatable heads have dual actuator entry positions to give up to 8 different entry positions. For extra durability, Flexible Actuators and Stainless Steel head versions are available.

Contact blocks are replaceable with optional explosion proof versions. High holding force versions are available for applications where vibration can be a nuisance.

The head can be rotated to give 8 actuator entry positions.

Designed with a removable lid to fit replaceable contact blocks.

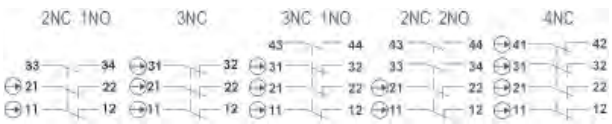
Flexible actuators are available and the KM is available with a Stainless Steel head.

FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
3 pole, 4 pole or Explosion Proof Contact Blocks
Stainless Steel Head version available
Connects to most Safety Relays to give up to PLe Cat.4
Industry Standard Fitting:
118mm long 40mm wide 30mm fixing

ACTUATOR OPTIONS (see p100)

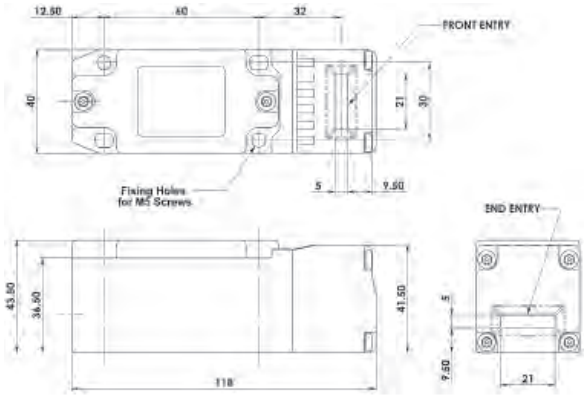
CONTACT BLOCK OPTIONS:



PRE-WIRED EXPLOSION PROOF:

CLASSIFICATION:
Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

DIMENSIONS:



Standards: ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	500Vac/2500Vac
Travel for Positive Opening	8mm
Actuator Entry Minimum Radius	175mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	Die Cast (Painted Red)
Head Material	Die Cast (Painted Red) or Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

KOBRA - Tongue Operated Switch (Metal) **Type: KM**

CONTACT OPERATION AT WITHDRAWAL OF ACTUATOR

2NC 1NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
33/34		Open

3NC 1NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
31/32	Open	
43/44		Open

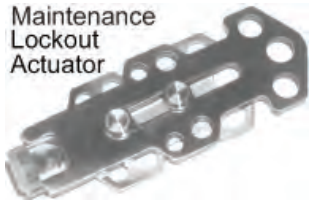
4NC 6.0 0mm

11/12	Open	
21/22	Open	
31/32	Open	
41/42	Open	

2NC 2NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

ACCESSORIES (see p100-101 and Gate Bolts Section 6)

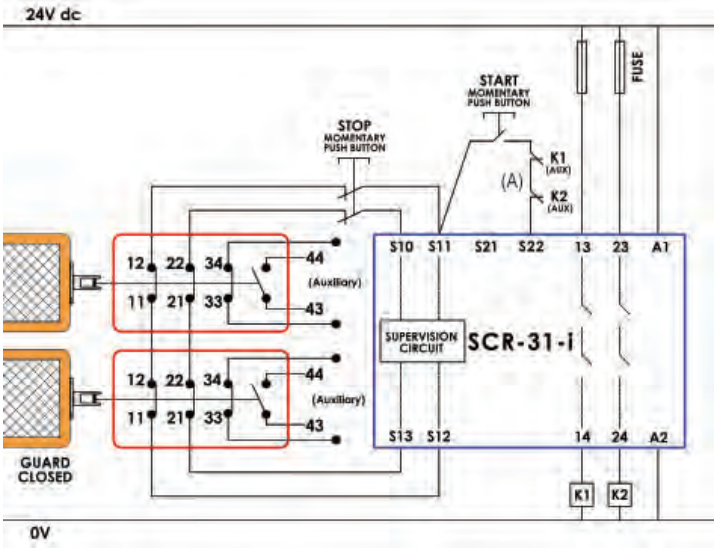


Fits to switch aperture during maintenance and provides multiple padlock holes.

Flat Actuator supplied with 300mm (12") chain. Can be used where poor alignment exists and provides manual insertion of actuator by operator.

GBA-1 Gate Bolt
Shown fitted with KM Tongue Switch.

APPLICATION EXAMPLE



Multiple Guard Door Interlocks - Dual Channel (Monitored)

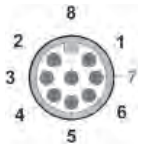
The switch contacts 11-12 and 21-22 from each switch are wired in series to an SCR-31-i Safety Relay to monitor for wiring short circuits.

This provides Dual Channel monitoring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

The SCR-31-i monitors the switch and the contactors K1 and K2 and provides its own self-monitoring via force guided internal relays.

The system is shown with the Machine Stopped, Guards Closed and the contactors able to be energised.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144



Quick Connect (QC) M23 12 Way Male (connector length 26mm) Pin View from Switch	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
1 3	11/12	1 7
4 6	21/22	6 5
7 8	33/34 or 31/32	4 3
9 10	41/42 or 43/44	
12	Earth	8

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

SALES NUMBER	CONTACTS	M20	1/2" NPT	QC M23 12 WAY	QC M12 8 WAY
Kobra KM Switch	2NC 1NO	203001	203002	203003	203021
Kobra KM Switch	3NC	203004	203005	203006	203022
Kobra KM Switch	3NC 1NO	203007	203008	203009	
Kobra KM Switch	2NC 2NO	203010	203011	203012	
Kobra KM Switch	4NC	203013	203014	203015	
Kobra KM Switch	1NC 1NO Ex	203016	3m 4 Core Ex		
Kobra KM Switch	2NC Ex	203019	3m 4 Core Ex		
Kobra KM Switch	2NC 2NO Ex	203026	3m 8 Core Ex		
Actuator	Standard	Add A to Sales Part Number			
Actuator	Flat	Add F to Sales Part Number			
Actuator	Plastic Flexible	Add PF to Sales Part Number			
Actuator	Heavy Duty Flexible	Add HF to Sales Part Number			
Actuator	Heavy Duty S/Steel	Add HFH to Sales Part Number			
Stainless Steel Head Version		Add SS to Sales Part Number			
Actuator Holding 40N (3 pole version only)		Add 40N to Sales Part Number			

Ordering example: Kobra KM M20 2NC 1NO with Heavy Duty Flexible Actuator: Sales Number: 203001-HF
Gold Plated Contacts available for low power circuits (5V 5mA). Add GC to Sales Number e.g. 203001-A-GC

Also available with 3NO Contacts for use as indication purposes only. Please contact us for further information.

KOBRA - Stainless Steel Switch Type: HYGIECAM MK1-SS

FEATURES:

IDEM's new MK1-SS Compact Safety Interlock switches are designed to provide position interlock detection for small moving guards.

They are designed to fit to the leading edge of sliding, hinged or lift off machine guards.

Mirror polished surface finish to RA10 makes the MK1-SS ideally suited to the food processing and packaging environments.

The rugged Stainless Steel actuator profile is designed to match a cam mechanism to provide a positively operated not easily defeatable interlock mechanism.

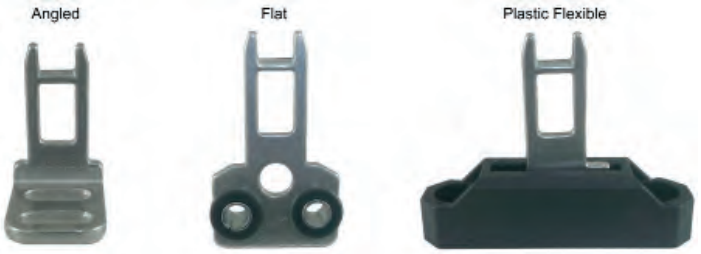
The compact body, 30mm wide with 22mm fixing centres and rotatable head make them easy to install where space is restricted.

The rotatable heads have dual actuator entry positions to give up to 8 different entry positions.

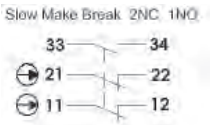
A Plastic Flexible Actuator is available for tight radius guards.

Contact blocks are replaceable.

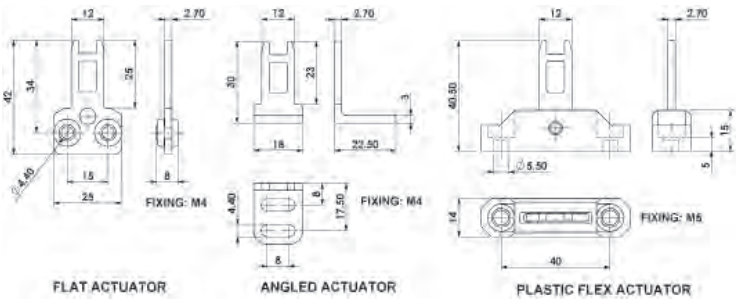
ACTUATOR OPTIONS:



CONTACT BLOCK:



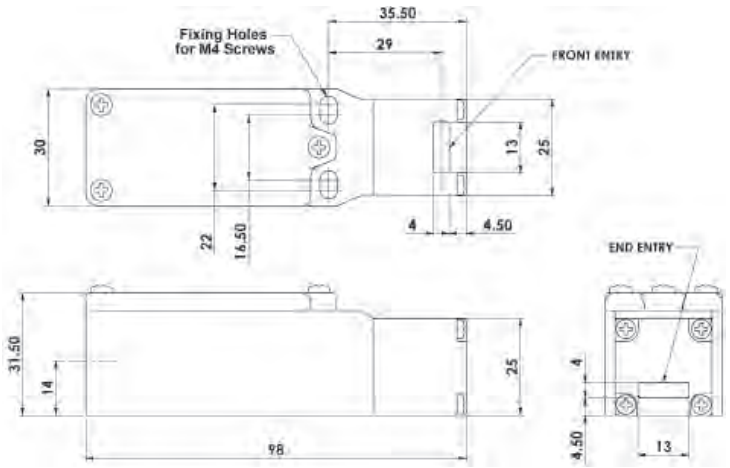
ACTUATOR DIMENSIONS:

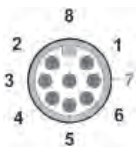


FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
3 pole
Connects to most Safety Relays to give up to PLe Cat.4
Industry Standard Fitting:
98mm long 30mm wide 22mm fixing

PRODUCT DIMENSIONS:





Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
11/12	1 7
21/22	6 5
33/34	4 3
Earth	8

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

		SALES NUMBER		
PRODUCT	CONTACTS	M20	1/2" NPT	QC M12 8 WAY
MK1-SS Switch	2NC 1NO	224001	224002	224003
Actuator	Flat	Add F to Sales Number		
Actuator	Angled	Add A to Sales Number		
Actuator	Plastic Flexible	Add PF to Sales Number		

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 224001-GC

KOBRA - Stainless Steel Switch **Type: HYGIECAM MK1-SS**

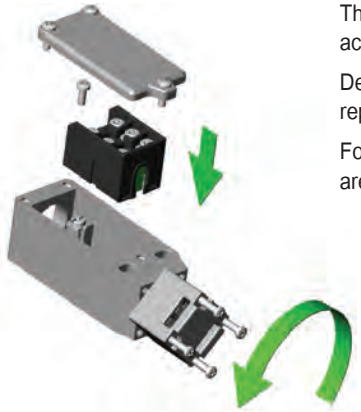
CONTACT OPERATION AT WITHDRAWAL OF ACTUATOR:

2NC 1NO 4.5 4.0 0mm

11/12	Open	
21/22	Open	
33/34		Open

Stainless Steel Guide:
To assist with guard alignment IDEM recommend that you use the Stainless Steel Guide accessory (supplied with two x M3 stainless steel screws).

SALES NUMBER - MK1-SS STAINLESS STEEL GUIDE	140179-SS

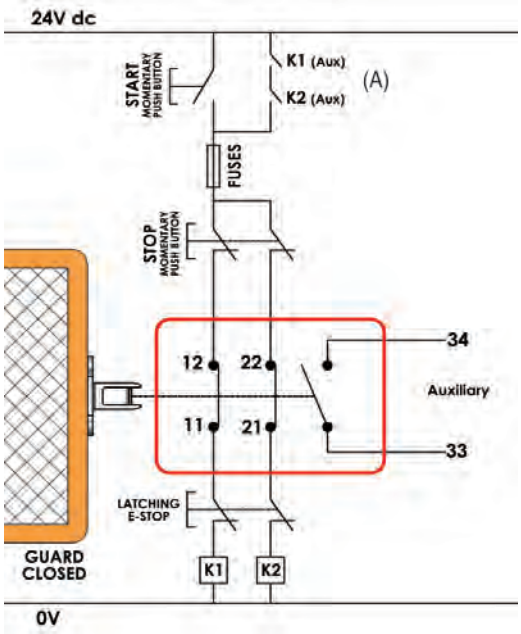


The head can be rotated to give 8 actuator entry positions.

Designed with a removable lid to fit replaceable contact blocks.

For extra durability flexible actuators are available.

APPLICATION EXAMPLE



Guard Door Interlocked - Dual Channel (Non Monitored)

This system shows interlock switch circuits 11-12 and 21-22 configured to allow direct feed to contactor coils K1 and K2.

This provides Dual Channel wiring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

Opening the interlock switch or depressing the Emergency Stop will isolate power to the contactor coils.

Re-start can only occur providing the Guard is closed, and the Emergency Stop is reset.

The system is shown with the Machine Stopped, the Guard Closed and the contactors able to be energised.

Hinged Guard | Sliding Guard | Lift Off Guard

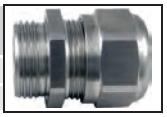
Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:
Mechanical Reliability B10d2.5 x 10^6 operations at 100mA load

ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current	10A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	6mm
Actuator Entry Minimum Radius	150mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	Stainless Steel 316 (mirror polished finish)
Enclosure Protection	IP69K
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M4
Mounting Position	Any

IDEM recommend using our Stainless Steel 316 Gland with this switch.

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

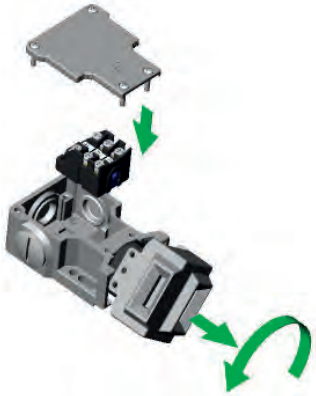


For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

KOBRA - Stainless Steel Switch Type: HYGIECAM K-SS

FEATURES:

IP69K



IDEM's HYGIECAM Series of Interlock Switches have a rugged Stainless Steel 316 body and have been designed to cope with the rigorous applications of the Food Processing, Pharmaceutical, Packaging and Petro-Chemical Industries.

They have IP69K enclosure protection (maintained by a double seal lid gasket and seals) and can be high pressure hosed with detergent at high pressure and high temperature.

Designed to fit to the leading edge of sliding, hinged or lift off machine guards. They provide a forced disconnect of the safety contacts at the withdrawal of the actuator and have an anti-tamper mechanism.

The head can be rotated to give 4 actuator entry positions. For extra durability, Flexible Actuators are available.

Contact blocks are replaceable with optional explosion proof versions.

They are sealed to IP69K and survive most caustic wash down solutions.

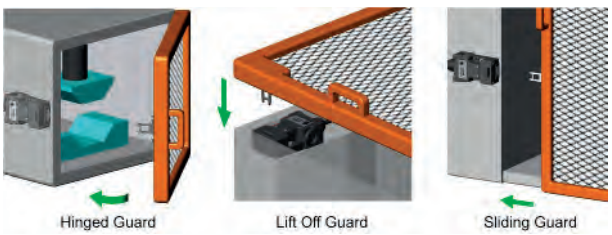
The head can be rotated to give 4 actuator entry positions.

Designed with a removable lid to fit replaceable contact blocks.

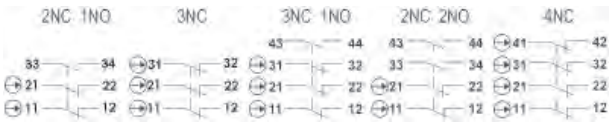
For extra durability flexible actuators are available.

FUNCTIONAL SPECIFICATIONS:

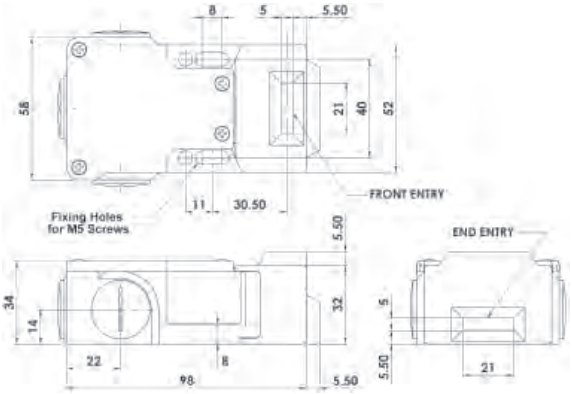
Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
3 pole, 4 pole or Explosion Proof Contact Blocks
Stainless Steel 316 Body and External Fixings
Connects to most Safety Relays to give up to PLe Cat.4
Industry Standard Housing - will fit on 40mm fixing centres
IP69K - suitable for SIP and CIP Processes



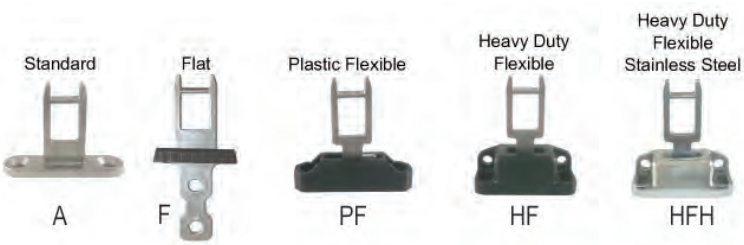
CONTACT BLOCK OPTIONS:



DIMENSIONS:



ACTUATOR OPTIONS (see p100)



PRE-WIRED EXPLOSION PROOF:

CLASSIFICATION:
Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	500Vac/2500Vac
Travel for Positive Opening	8mm
Actuator Entry Minimum Radius	175mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	Stainless Steel 316
Head Material	Stainless Steel 316
Enclosure Protection	IP67 IP69K
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

KOBRA - Stainless Steel Switch **Type: HYGIECAM K-SS**

CONTACT OPERATION AT WITHDRAWAL OF ACTUATOR

2NC 1NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
33/34		Open

3NC 1NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
31/32	Open	
43/44		Open

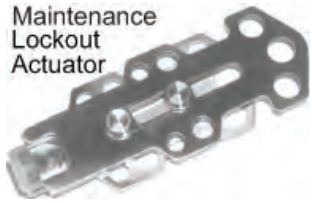
4NC 6.0 0mm

11/12	Open	
21/22	Open	
31/32	Open	
41/42	Open	

2NC 2NO 6.8 6.0 0mm

11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

ACCESSORIES (see p100-101)

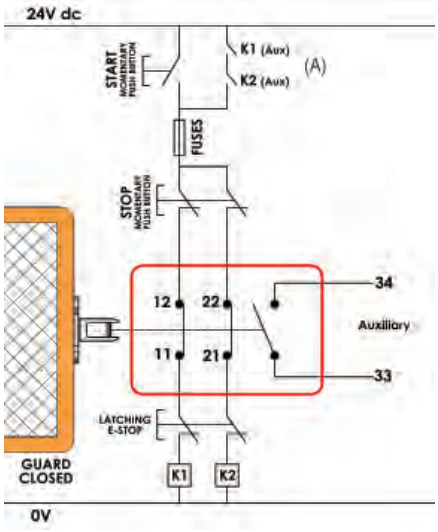


Fits to switch aperture during maintenance and provides multiple padlock holes.

Flat Actuator supplied with 300mm (12") chain. Can be used where poor alignment exists and provides manual insertion of actuator by operator.

2 colour LED (3 wires) Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

APPLICATION EXAMPLE



Guard Door Interlocked - Dual Channel (Non Monitored)

This system shows interlock switch circuits 11-12 and 21-22 configured to allow direct feed to contactor coils K1 and K2.

This provides Dual Channel wiring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

Opening the interlock switch or depressing the Emergency Stop will isolate power to the contactor coils.

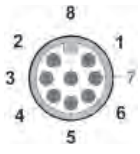
Re-start can only occur providing the Guard is closed, and the Emergency Stop is reset.

The system is shown with the Machine Stopped, the Guard Closed and the contactors able to be energised.

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144



Quick Connect (QC) M23 12 Way Male (connector length 26mm) Pin View from Switch	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
1 3	11/12	1 7
4 6	21/22	6 5
7 8	33/34 or 31/32	4 3
9 10	41/42 or 43/44	
12	Earth	8

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

SALES NUMBER	CONTACTS	M20	1/2" NPT	QC M23 12 WAY	QC M12 8 WAY
Kobra K-SS Switch	2NC 1NO	208001	208002	208003	208021
Kobra K-SS Switch	3NC	208004	208005	208006	208022
Kobra K-SS Switch	3NC 1NO	208007	208008	208009	
Kobra K-SS Switch	2NC 2NO	208010	208011	208012	
Kobra K-SS Switch	4NC	208013	208014	208015	
Kobra K-SS Switch	1NC 1NO Ex	208016	3m 4 Core Ex		
Kobra K-SS Switch	2NC Ex	208019	3m 4 Core Ex		
Kobra K-SS Switch	2NC 2NO Ex	208026	3m 8 Core Ex		
Actuator	Standard	Add A to Sales Part Number			
Actuator	Flat	Add F to Sales Part Number			
Actuator	Plastic Flexible	Add PF to Sales Part Number			
Actuator	Heavy Duty Flexible	Add HF to Sales Part Number			
Actuator	Heavy Duty S/Steel	Add HFH to Sales Part Number			
Actuator Holding 40N (3 pole versions only)		Add 40N to Sales Part Number			

Ordering example: Kobra K-SS M20 3NC 1NO with Standard Actuator:
Sales Number: 208007-A
Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 208001-A-GC

Also available with 3NO Contacts for use as indication purposes only. Please contact us for further information.

KOBRA - Stainless Steel Switch Type: HYGIECAM KM-SS

FEATURES:

IP69K

HYGIECAM Series Interlock Switches have a rugged Stainless Steel 316 body and have been designed to cope with the rigorous applications of the Food Processing, Pharmaceutical, Packaging and Petro-Chemical Industries. The surface finish is mirror polished to Ra10 to resist the accumulation of food debris and is suitable for high pressure hosing at high temperature.

They offer a compact slimline housing which will fit to areas where there are space restrictions and are sealed to IP69K enclosure protection. They can be high pressure hosed with most detergents at high temperature.

They are designed to fit to the leading edge of sliding, hinged or lift off machine guards. They provide a forced disconnect of the safety contacts at the withdrawal of the actuator and have an anti-tamper not easily defeatable mechanism.

The rotatable heads have dual actuator entry positions to give up to 8 different entry positions. High holding force versions are available for applications where vibration can be a nuisance.

The head can be rotated to give 8 actuator entry positions.

Designed with a removable lid to fit replaceable contact blocks.

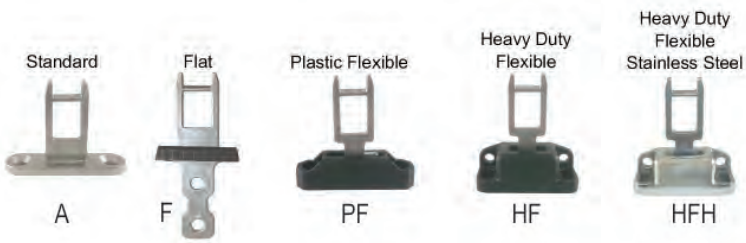
For extra durability flexible actuators are available.

FUNCTIONAL SPECIFICATIONS:

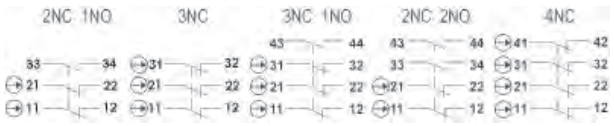
Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
3 pole, 4 pole or Explosion Proof Contact Blocks
Stainless Steel 316 Body and External Fixings
Connects to most Safety Relays to give up to PLe Cat.4
IP69K - suitable for SIP and CIP Processes
Will fit on 30mm fixing centres - DIN standard body mounting

Hinged Guard | Sliding Guard | Lift Off Guard

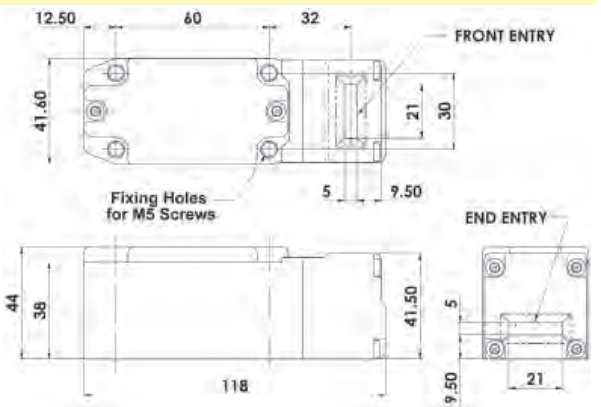
ACTUATOR OPTIONS (see p100)



CONTACT BLOCK OPTIONS:



DIMENSIONS:



PRE-WIRED EXPLOSION PROOF:

CLASSIFICATION:
Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

Standards: ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	500Vac/2500Vac
Travel for Positive Opening	8mm
Actuator Entry Minimum Radius	175mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	Stainless Steel 316
Head Material	Stainless Steel 316
Enclosure Protection	IP67 IP69K
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

KOBRA - Stainless Steel Switch **Type: HYGIECAM KM-SS**

CONTACT OPERATION AT WITHDRAWAL OF ACTUATOR

2NC 1NO — 6.8 6.0 — 0mm

11/12	Open	
21/22	Open	
33/34		Open

3NC 1NO — 6.8 6.0 — 0mm

11/12	Open	
21/22	Open	
31/32	Open	
43/44		Open

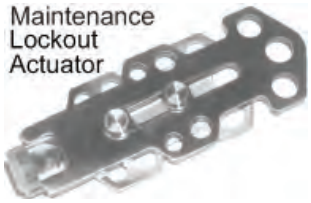
4NC — 6.0 — 0mm

11/12	Open	
21/22	Open	
31/32	Open	
41/42	Open	

2NC 2NO — 6.8 6.0 — 0mm

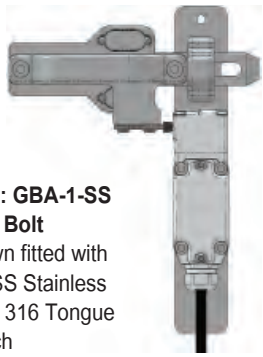
11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

ACCESSORIES (see p100-101 and Gate Bolts Section 6)



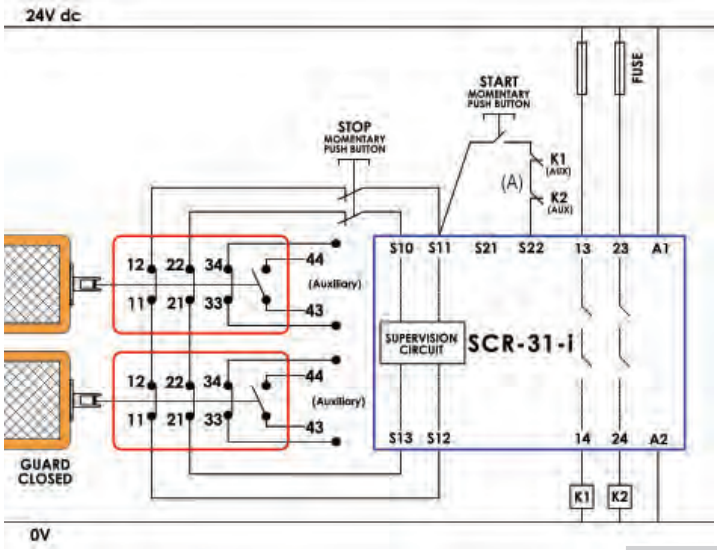
Fits to switch aperture during maintenance and provides multiple padlock holes.

Flat Actuator supplied with 300mm (12") chain. Can be used where poor alignment exists and provides manual insertion of actuator by operator.



Type: GBA-1-SS Gate Bolt
Shown fitted with KM-SS Stainless Steel 316 Tongue Switch

APPLICATION EXAMPLE



Multiple Guard Door Interlocks - Dual Channel (Monitored)

The switch contacts 11-12 and 21-22 from each switch are wired in series to an SCR-31-i Safety Relay to monitor for wiring short circuits.

This provides Dual Channel monitoring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

The SCR-31-i monitors the switch and the contactors K1 and K2 and provides its own self-monitoring via force guided internal relays.

The system is shown with the Machine Stopped, Guards Closed and the contactors able to be energised.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

Quick Connect (QC) M23 12 Way Male (connector length 26mm) Pin View from Switch	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
1 3	11/12	1 7
4 6	21/22	6 5
7 8	33/34 or 31/32	4 3
9 10	41/42 or 43/44	
12	Earth	8

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

SALES NUMBER	CONTACTS	M20	1/2" NPT	QC M23 12 WAY	QC M12 8 WAY
Kobra KM-SS Switch	2NC 1NO	204001	204002	204003	204021
Kobra KM-SS Switch	3NC	204004	204005	204006	204022
Kobra KM-SS Switch	3NC 1NO	204007	204008	204009	
Kobra KM-SS Switch	2NC 2NO	204010	204011	204012	
Kobra KM-SS Switch	4NC	204013	204014	204015	
Kobra KM-SS Switch	1NC 1NO Ex	204016	3m 4 Core Ex		
Kobra KM-SS Switch	2NC Ex	204019	3m 4 Core Ex		
Kobra KM-SS Switch	2NC 2NO Ex	204026	3m 8 Core Ex		
Actuator	Standard	Add A to Sales Part Number			
Actuator	Flat	Add F to Sales Part Number			
Actuator	Plastic Flexible	Add PF to Sales Part Number			
Actuator	Heavy Duty Flexible	Add HF to Sales Part Number			
Actuator	Heavy Duty S/Steel	Add HFH to Sales Part Number			
Actuator Holding 40N (3 pole version only)		Add 40N to Sales Part Number			

Ordering example: Kobra KM-SS 1/2" NPT 2NC 2NO with Heavy Flexible Actuator: Sales Number: 204011-HF
Gold Plated Contacts available for low power circuits (5V 5mA). Add GC to Sales Number e.g. 204001-A-GC

Also available with 3NO Contacts for use as indication purposes only. Please contact us for further information.

Hinge Interlock Safety Switch **Type: IDIS-2**

FEATURES:

IDEM IDIS-2 Compact Hinge Safety Interlock switches are designed to provide position interlock detection for moving guards.

They are designed to fit to the hinged axis of machine guard doors. The switch body fits to the door frame and the leaf actuator fits to the door.

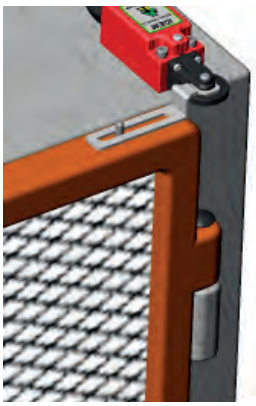
The rugged Stainless Steel actuator profile is designed to fix to the door and provide a positively operated not easily defeatable interlock mechanism. They can be mounted unobtrusively away from direct vision or contact.

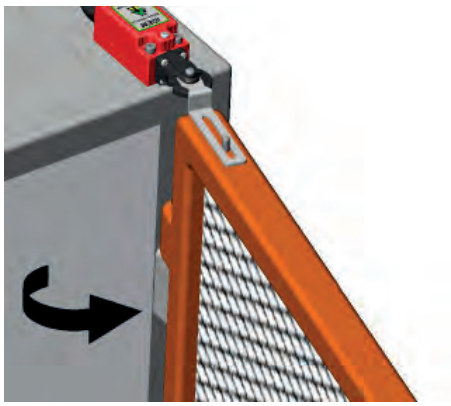
The compact body and 22mm fixing profile make them easy to install where space is restricted.

The head can be rotated through 90 degree increments to provide ease of mounting in 4 positions.

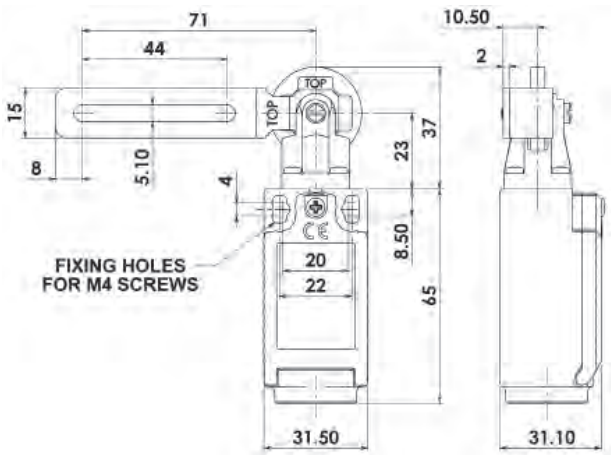
Contact blocks are replaceable with optional slow or snap break operation.

Universal fitting - Opening Angle 180 degrees for swing doors



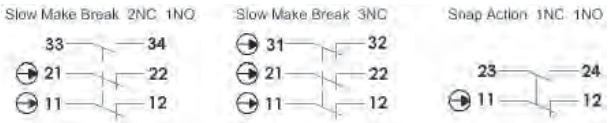


DIMENSIONS:



Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Actuator Rotation for Positive Opening	7 degrees 0.5Nm
Materials	UL Approved Glass Fibre Polyester
Enclosure Protection	IP67
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M4

CONTACT BLOCK OPTIONS:



Quick Connect (QC) 1/2" UNF 6 Way Male (connector length 14mm) Pin View from Switch	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
1 5	11/12	1 7
2 6	21/22 or 23/24	6 5
3 4	33/34 or 31/32	4 3

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102
1/2" UNF	2m (6ft)	140141
1/2" UNF	5m (15ft)	140142

SALES NUMBER	CONTACTS	M20	1/2" NPT	QC 1/2" UNF 6 WAY	QC M12 8 WAY
Universal Actuator	2NC 1NO	192001	192002	192003	192022
Universal Actuator	3NC	192004	192005	192006	192023
Universal Actuator	1NC 1NO Snap	192007	192008	192009	192024

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 192001-GC

Hinge Interlock Safety Switch **Type: HINGECAM HC-1**

FEATURES:

IDEM's HC-1 is a member of the HINGECAM family which is a range of Compact Hinge Safety Interlock switches and has been designed to provide position interlock detection for moving guards.

They are designed to fit to the hinged axis of machine guard doors. The switch body fits to the door frame and the shaft fits to the door.

The rugged Stainless Steel shaft profile is designed to fix to the door and provide a positively operated not easily defeatable interlock mechanism. They can be mounted unobtrusively away from direct vision or contact.

The compact body and 18mm fixing profile make them easy to install where space is restricted.

The head can be rotated through 90 degree increments to provide ease of mounting in 4 positions.

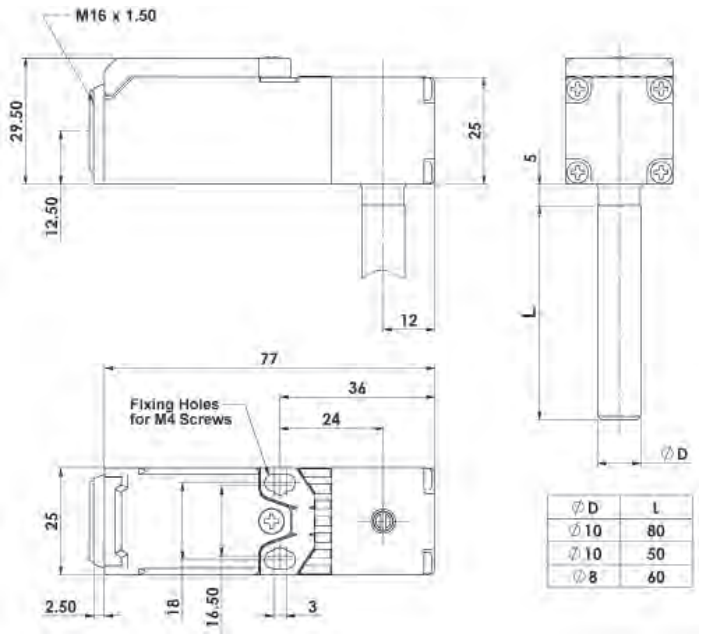
Contact blocks are replaceable.

Solid shafts are available as: 10mm dia. and 50 or 80mm long or as 8mm dia. and 60mm long.

Hollow shafts also available (see dimensions opposite).

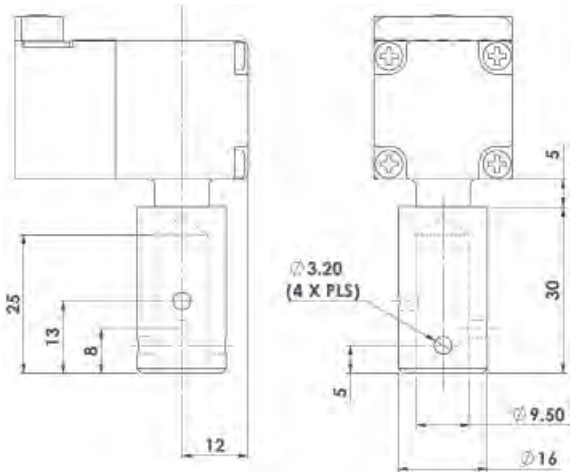
STAINLESS STEEL HEAD

DIMENSIONS:



ØD	L
Ø10	80
Ø10	50
Ø8	60

HOLLOW SHAFT DIMENSIONS:



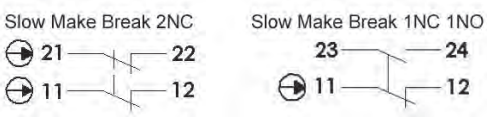
Switch Circuit	Quick Connect (QC) M12 4 Way Male (on Flying Lead 250mm) Pin View from Switch
11/12	1 3
21/22 or 23/24	4 2

Standards: ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Actuator Rotation for Positive Opening	7 degrees 0.5Nm
Housing Materials	UL Approved Glass Fibre Polyester
Shaft Material	Stainless Steel
Enclosure Protection	IP67
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	M16
Fixing	2 x M4

CONTACT BLOCK OPTIONS:



SALES NUMBER	CONTACTS	SHAFT	M16	QC M12 4 WAY
HC-1	2NC	Dia. 10mm x 80mm	193001	193002
		Dia. 10mm x 50mm	193003	193004
		Dia. 8mm x 60mm	193005	193006
		Hollow Dia. 16mm x 30mm	193007	193008
HC-1	1NC 1NO	Dia. 10mm x 80mm	193009	193010
		Dia. 10mm x 50mm	193011	193012
		Dia. 8mm x 60mm	193013	193014
		Hollow Dia. 16mm x 30mm	193015	193016

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 193001-GC

Hinge Interlock Safety Switch **Type: HINGECAM HC-3**

FEATURES:

IDEM's HC-3 is a member of the HINGECAM family which is a range of Compact Hinge Safety Interlock switches and has been designed to provide position interlock detection for moving guards.

They are designed to fit to the hinged axis of machine guard doors. The switch body fits to the door frame and the shaft fits to the door.

The rugged Stainless Steel shaft profile is designed to fix to the door and provide a positively operated not easily defeatable interlock mechanism. They can be mounted unobtrusively away from direct vision or contact.

The compact body and 18mm fixing profile make them easy to install where space is restricted.

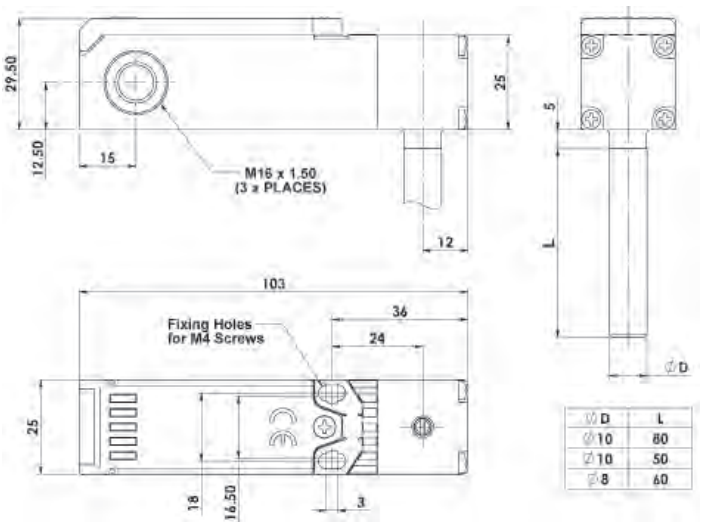
The head can be rotated through 90 degree increments to provide ease of mounting in 4 positions.

Contact blocks are replaceable.

Solid shafts are available as: 10mm dia. and 50 or 80mm long or as 8mm dia. and 60mm long.

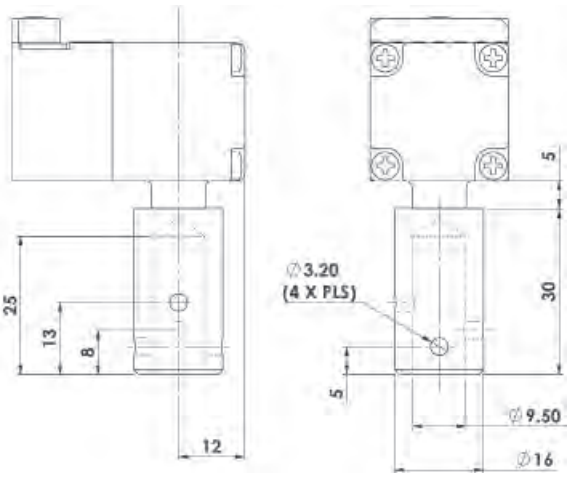
Hollow shafts also available (see dimensions opposite).

DIMENSIONS:



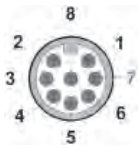
ØD	L
Ø10	80
Ø10	50
Ø8	60

HOLLOW SHAFT DIMENSIONS:



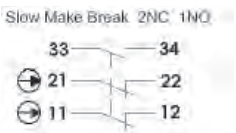
Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Actuator Rotation for Positive Opening	7 degrees 0.5Nm
Housing Materials	UL Approved Glass Fibre Polyester
Shaft Material	Stainless Steel
Enclosure Protection	IP67
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	3xM16
Fixing	2 x M4

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102



Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
11/12	1 7
21/22	6 5
33/34	4 3

CONTACT BLOCK:



SALES NUMBER	CONTACTS	SHAFT	M16	QC M12 8 WAY
HC-3	2NC 1NO	Dia. 10mm x 80mm	194001	194002
		Dia. 10mm x 50mm	194003	194004
		Dia. 8mm x 60mm	194005	194006
		Hollow Dia. 16mm x 30mm	194007	194008

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 194001-GC

Hinge Interlock Safety Switch **Type: HINGECAM HC-SS**

FEATURES:

IDEM's HC-SS is a member of the HINGECAM family which is a range of Compact Hinge Safety Interlock switches and has been designed to provide position interlock detection for moving guards.

They are designed to fit to the hinged axis of machine guard doors. The switch body fits to the door frame and the shaft fits to the door.

The rugged Stainless Steel 316 body and Stainless Steel shaft profile is designed to fix to the door and provide a positively operated not easily defeatable interlock mechanism. They can be mounted unobtrusively away from direct vision or contact.

The compact body and 22mm fixing profile make them easy to install where space is restricted.

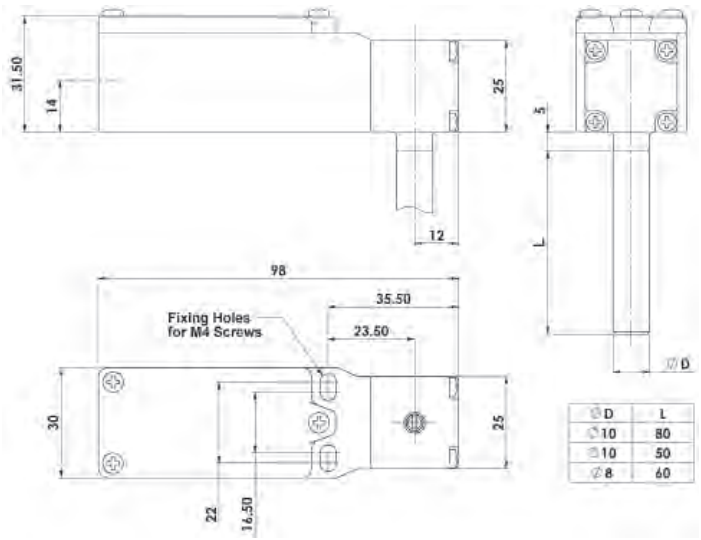
The head can be rotated through 90 degree increments to provide ease of mounting in 4 positions.

Contact blocks are replaceable.

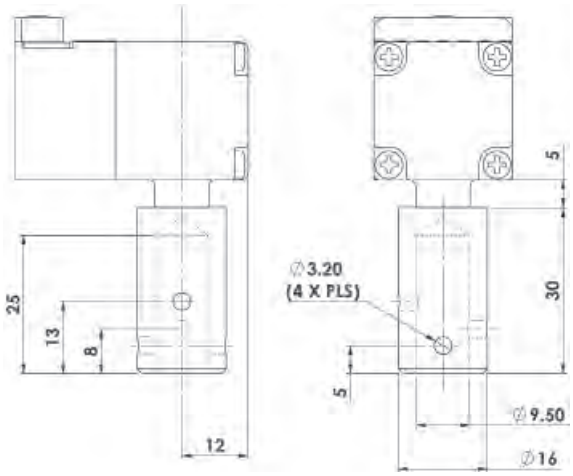
Solid shafts are available as: 10mm dia. and 50 or 80mm long or as 8mm dia. and 60mm long.

Hollow shafts also available (see dimensions opposite).

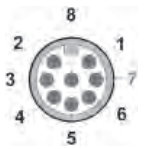
DIMENSIONS:



HOLLOW SHAFT DIMENSIONS:



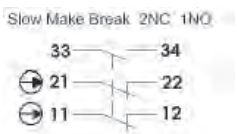
FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102



Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch
11/12	1 7
21/22	6 5
33/34	4 3

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Actuator Rotation for Positive Opening	7 degrees 0.5Nm
Housing Materials	Stainless Steel 316
Shaft Material	Stainless Steel
Enclosure Protection	IP69K
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (see Sales Number)
Fixing	2 x M4

CONTACT BLOCK:



SALES NUMBER	CONTACTS	SHAFT	M20	1/2" NPT	QC M12 8 WAY
HC-SS	2NC 1NO	Dia. 10mm x 80mm	195001	195002	195003
		Dia. 10mm x 50mm	195004	195005	195006
		Dia. 8mm x 60mm	195007	195008	195009
		Hollow Dia. 16mm x 30mm	195010	195011	195012

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 195001-GC

Guard Locking Safety Interlock Switches

APPLICATION:

IDEM Guard Locking Interlock switches are designed to provide robust position interlock detection for moving guards and provide a lock mechanism to keep the guard closed until the hazard has been removed.

They are Tongue operated and are designed to fit to the leading edge of sliding or hinged machine guards to provide positively operated switching contacts and provide a tamper resistant, not easily defeatable key mechanism.

They are available in various materials and housing styles of provide completely flexibility of choice depending upon the application. Offered with a choice of output circuits, LED diagnostics and various actuators to aid installation and maintain durability throughout the rigorous applications associated with Factory Automation, Packaging, food Processing, Pharmaceutical and Petro-Chemical industries.

OPERATION:

The switch is rigidly mounted to the frame of the guard or machine. The actuator is fitted to the moving part (frame) of the guard and is aligned to the switch entry aperture. The actuator profile is designed to match a cam mechanism within the switch head and provides a positively operated interlock switch.

For **Standard and RFID versions** the actuator is inserted into the switch and the safety contacts close and allow the machine start circuit to be enabled. When the solenoid receives the required signal the safety contacts are positively opened, the machine circuit is broken and the guard door can be opened.

They can be used in combination with safety timers to provide a delay before allowing the guard to open (e.g. for machines which require run down).

For **Power to Lock (P2L) versions** the safety circuits can only close and switch locks when the power is applied to the solenoid.

They offer a choice of high specification plastic or die-cast housings and are sealed to IP67 and provide long term protection against moisture ingress. For harsh applications like Food Processing, Pharmaceutical and Petro-Chemical Industries the Stainless Steel 316 range offers protection up to IP69K for use in high pressure chemical cleaning or CIP/SIP applications.

RFID INTEGRATED VERSIONS:

Uses RFID interlocking with solid state outputs. (Energise the switch solenoid to unlock).

KLP-Z

KLM-Z

KL-SS-Z

KLTM-RFID

KLT-SS-RFID

STANDARD VERSIONS:

Uses Mechanical Interlocking. (Energise the switch solenoid to unlock).

KL1-P

KLP

KLM

KLTM

KL1-SS

KL3-SS

KL4-SS

KLT-SS

Guard Locking Safety Interlock Switches

FUNCTION GUIDE:

All Guard Locking Switches are intended to prevent an operator accidentally opening a guard door and being exposed to a hazard.

When choosing the correct switch it is necessary to take into account the dimensions and weight of the guard door and to install the switch so as to avoid applying unnecessary forces to the switch locking mechanism during normal use.

All switches are specified with a holding force value (Fzh), and it is important to select the correct device to withstand the static forces applied during normal use and dynamic effects caused by bouncing of the guard shall not create an impact reaction force with exceeds the holding force. If the expected impact reaction forces are higher than the specified holding force for the switch, then design measures must be applied to avoid the force.

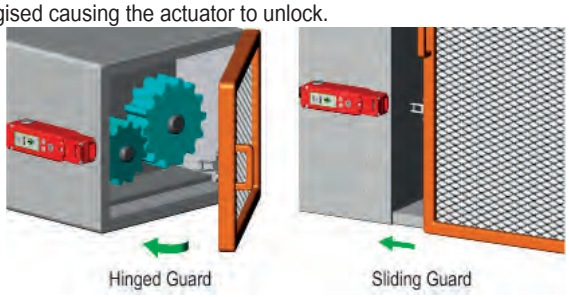
Door catches, stops and guides should always be fitted in addition to the safety switch to prevent unnecessary damage to the switch.
When the guard is closed the switch actuator is automatically locked and the switch safety contacts close.

The guard will be held closed and can only be opened after the switch solenoid is energised causing the actuator to unlock.

The operator cannot accidentally open the guard until the hazard is removed. When the solenoid is energised the safety contacts open and the actuator can be released.

Depending on risk assessment for the application, the solenoid is usually energised either by:

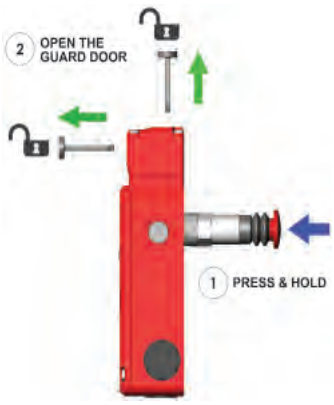
1. A request push button (for applications with immediate removal of the hazard).
2. A request push button and safety timer (for applications with a run down hazard after removing the machine power).
3. From a PLC or if necessary a Safety PLC via a machine control command.



RFID & STANDARD VERSIONS with Rear Manual Release Buttons:

KLM-RR

KL3-SS-RR



KLTM-RFID-RR

KLTM-RFID-RR

All the features and specifications of the standard solenoid locking switches are maintained.

Where the risk assessment for the application permits, a non-latching manual escape release is provided to enable quick release of the switch lock in case of emergency.

The switch can be mounted such that access to the release button is available from inside the active guard area. Pressing and holding the red button releases the lock mechanism and opens the lock monitoring safety contacts to allow the guard to be pushed open.

POWER TO LOCK VERSIONS (energise the solenoid to keep the switch locked):

Only suitable for applications where immediate unlocking is required at removal or loss of solenoid power.
Not suitable for machines with a running down time.

KLP-P2L

KLM-P2L

KLTM-P2L

KL3-SS-P2L

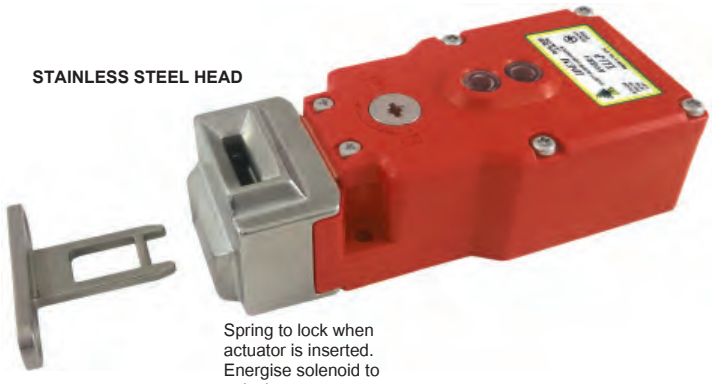
When the guard is closed the switch actuator will only lock and allow the safety contacts to close after the solenoid is energised.

The guard will be held closed and can only be opened after the solenoid is de-energised either by controlled request (or by power loss).

A latching Stop/Start circuit or a PLC or Safety PLC machine command usually energises the solenoid.

Guard Locking Switch Plastic **Type: LEILOCK KL1-P**

FEATURES:



Spring to lock when actuator is inserted. Energise solenoid to unlock.

Solenoid Locking Interlock Safety Switch featuring Guard Holding up to 1400N (140Kg) (F1Max)

The KL1-P Series Guard Locking switches have a compact plastic body design and have been developed with a holding force of 1400N to keep small to medium guard doors closed until hazards have been removed.

IP67 enclosure protection is maintained by a double seal lid gasket design and metal fixings.

The KL1-P switch has a low profile and fixing holes are on an industry standard 40mm centre to enable easy fitting to new or existing guards (or where replacement of a non locking tongue switch is required).

The head will rotate to provide up to 4 actuator entry positions.

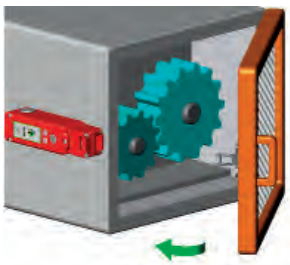
CONTACTS/LED DIAGNOSTICS:

STANDARD - Version 1:

2NC Safety Contacts
1NO Auxiliary Contact (Guard Open)
1NO Auxiliary Contact (Lock Open)
LED1 Solenoid Power

EXTRA LED2 - Version 2:

2NC Safety Contacts
1NO Auxiliary Contact (Guard Open)
LED2 Lock Status:
Closed and Locked
LED1 Solenoid Power



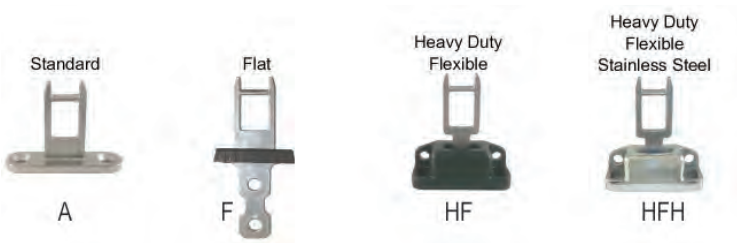
Hinged Guard

Sliding Guard

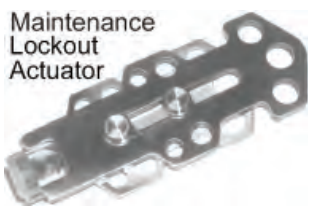
FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
High specification polyester housing with Stainless Steel Head
Connects to most Safety Relays to give up to PLe Cat.4
Will fit on 40mm fixing centres
2 manual override points
Universal M12 8 way microlock
Quick Connector version available for ease of installation

ACTUATOR OPTIONS (see p100)



ACCESSORIES (see p100-101)



Fits to switch aperture during maintenance and provides multiple padlock holes.

INSERTION OF ACTUATOR

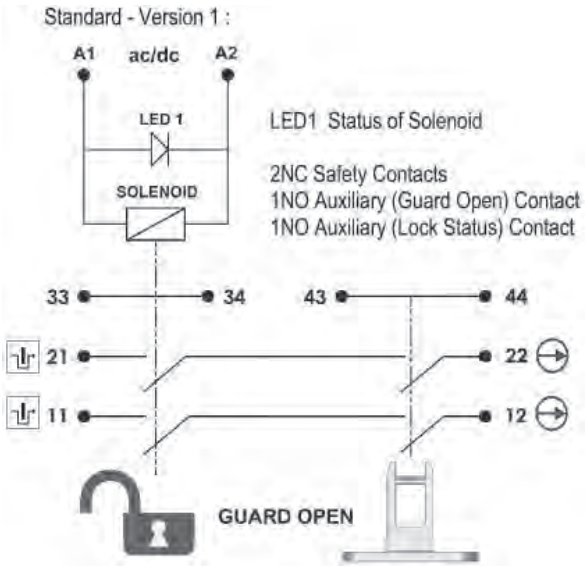
6.0 5.0 0mm

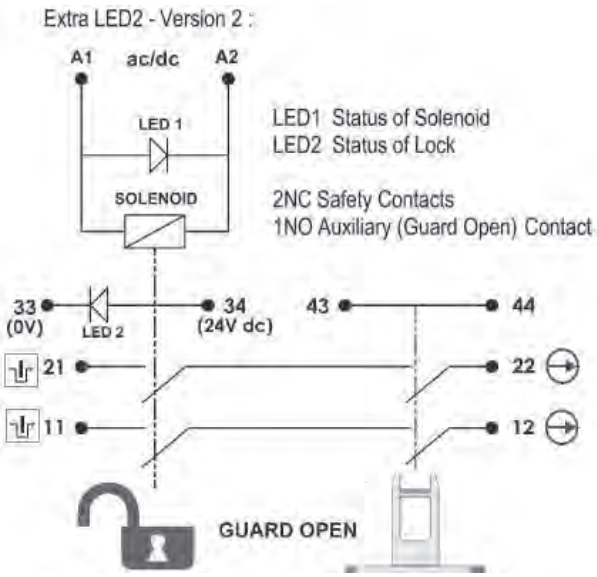
11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V ac/dc or 110Vac or 230Vac
Solenoid Wattage	12W
LED 2 Version Supply Voltage	24Vdc
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 1400N Fzh 1076N
Body Material	Polyester
Head Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +50C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M5

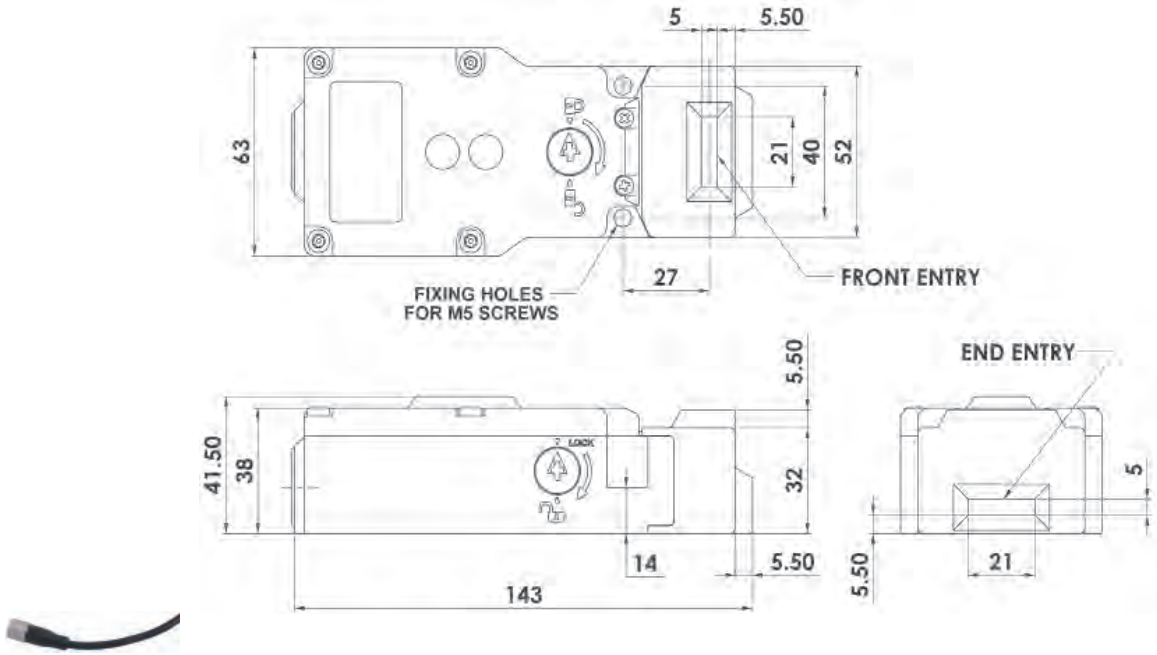
Guard Locking Switch Plastic **Type: LEILOCK KL1-P**

SCHEMATIC CIRCUITS:





DIMENSIONS:



FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch	Switch Circuit
2 7	A1 A2
4 6	11/12
8 5	21/22
3 1	43/44

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

STANDARD VERSION 1 (Solenoid LED only)

EXTRA LED VERSION 2 (Lock Status)

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M12	M20	1/2" NPT
Kobra KL1-P Switch	24V ac/dc	221001	221002	221003	221301	221302
Kobra KL1-P Switch	110V ac	221004	221005	221006	221304	221305
Kobra KL1-P Switch	230V ac	221007	221008	221009	221307	221308

Kobra Actuator	Standard	Add A to Sales Part Number
Kobra Actuator	Flat	Add F to Sales Part Number
Kobra Actuator	Heavy Duty Flexible	Add HF to Sales Part Number
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number

Ordering Examples:
Kobra KL1-P 24V Solenoid M20 Conduit LED2 Version Heavy Flexible Actuator: Sales Number: 221301-HF
Kobra KL1-P 110V Solenoid 1/2" NPT Conduit Standard Version Standard Actuator: Sales Number: 221005-A

Guard Locking Switch Plastic **Type: SEZYLOCK KLP**

FEATURES:

Solenoid Locking Interlock Safety Switch featuring Guard Holding up to 2000N (200Kg) (F1Max)

The KLP Series of Guard Locking switches have a slim plastic body design and have been developed with a holding force of 2000N to keep medium guard doors closed until hazards have been removed.

The high specification polyester body has a high resistance to chemical and washdown solutions and the stainless steel head provides a durable robust protection of the cam interlock.

IP67 enclosure protection is maintained by a double seal lid gasket design and metal fixings.

They have a slim profile and are designed to fit on 50mm (2") frame sections or to applications where space is restricted.

The Head will rotate to provide up to 8 actuator entry positions.

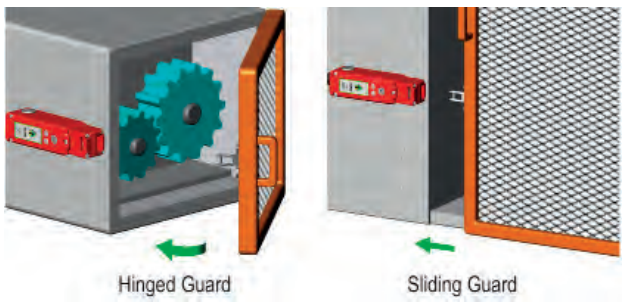
An LED is available to indicate Lock Status.

Accessories include a Sliding Handle Gate Bolt and lock off actuators.

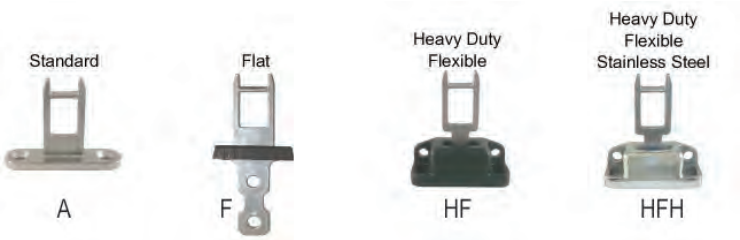
FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
High specification polyester housing with Stainless Steel Head
Connects to most Safety Relays to give up to PLe Cat.4
Will fit on 50mm (2") frame sections or where space is restricted
Quick Connector version available for ease of installation

2NC Safety Circuits:
Solenoid/Lock and Actuator/Guard wired in series
1NO Auxiliary Circuit:
For indication of Actuator Status
1NO Auxiliary Circuit:
For Lock Status (selectable with LED2)



ACTUATOR OPTIONS (see p100)



INSERTION OF ACTUATOR

6.0 5.0 0mm

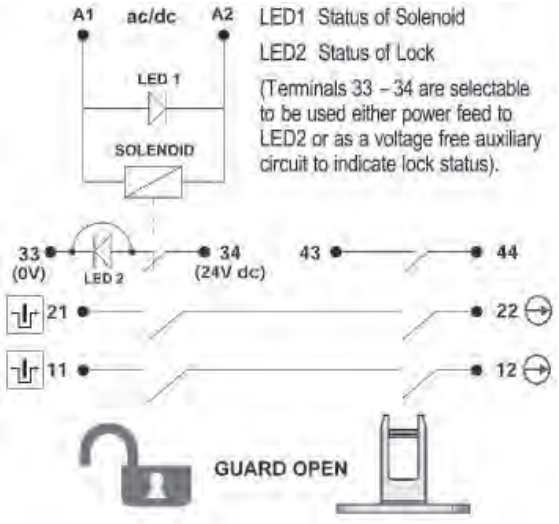
11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

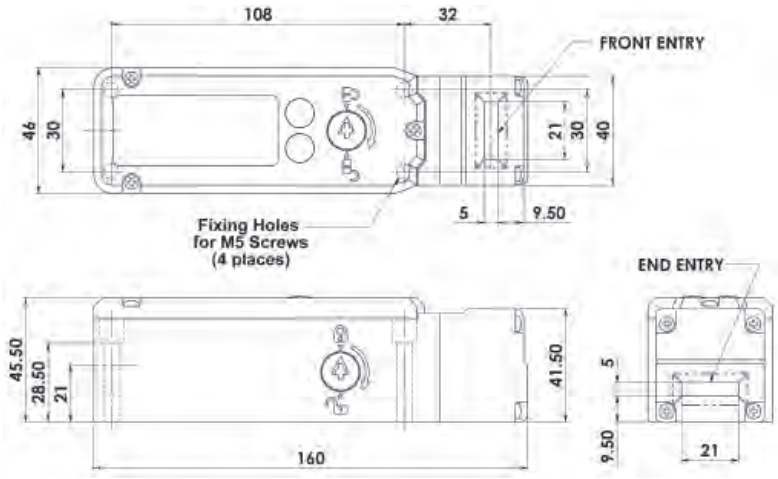
Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V ac/dc or 110Vac or 230Vac
Solenoid Wattage	12W
LED 2 Supply Voltage	24Vdc
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 2000N Fzh 1538N
Body Material	Polyester
Head Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +50C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

Guard Locking Switch Plastic **Type: SEZYLOCK KLP**

SCHEMATIC CIRCUIT:



DIMENSIONS:



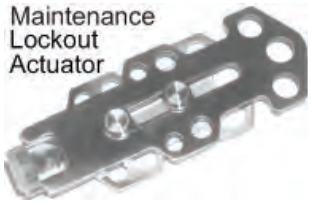
RELATED PRODUCTS & ACCESSORIES (see p100-101 and Gate Bolts Section 6)

GATE BOLT LOCK

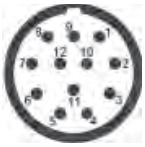
Rugged metal construction, easy to install on sliding or hinged guards.

Holes for fitting padlocks during maintenance.

Painted yellow and supplied with plastic handle and flat actuator.



Fits to switch aperture during maintenance and provides multiple padlock holes.



FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9 10	33/34

		STANDARD MANUAL RELEASE LID AND SIDE			MANUAL RELEASE LID ONLY (Not SIDE)			NO MANUAL RELEASE FITTED (Blanked)		
SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23	M20	1/2" NPT	QC M23	M20	1/2" NPT	QC M23
Kobra KLP Switch	24V ac/dc	201001	201002	201003	201401	201402	201403	201301	201302	201303
Kobra KLP Switch	110V ac	201004	201005	201006	201404	201405	201406	201304	201305	201306
Kobra KLP Switch	230V ac	201007	201008	201009	201407	201408	201409	201307	201308	201309
Kobra Actuator	Standard	Add A to Sales Part Number								
Kobra Actuator	Flat	Add F to Sales Part Number								
Kobra Actuator	Heavy Duty Flexible	Add HF to Sales Part Number								
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number								

Ordering Examples:

Kobra KLP 24V Solenoid M20 Conduit Standard Manual Release Heavy Flexible Actuator: Sales Number: 201001-HF

Kobra KLP 110V Solenoid 1/2" NPT Conduit Manual Release Lid only Standard Actuator: Sales Number: 201405-A

Guard Locking Switch Metal **Type: SAMLOCK KLM**

FEATURES:

Spring to lock when actuator is inserted. Energise solenoid to unlock.

STAINLESS STEEL HEAD

Solenoid Locking Interlock Safety Switch featuring Guard Holding up to 3000N (300Kg) (F1Max)

The KLM Series Guard Locking safety switches have rugged Die Cast housings and have been developed with a high holding force of 3000N to keep medium to large guard doors closed until hazards have been removed.

They have a slim profile and are designed to fit on 50mm (2") frame sections or to applications where space is restricted.

The Head will rotate to provide up to 8 actuator entry positions.

They have 2 independent contact blocks to individually monitor the Lock Status and Door Status.

An LED is available to indicate Lock Status.

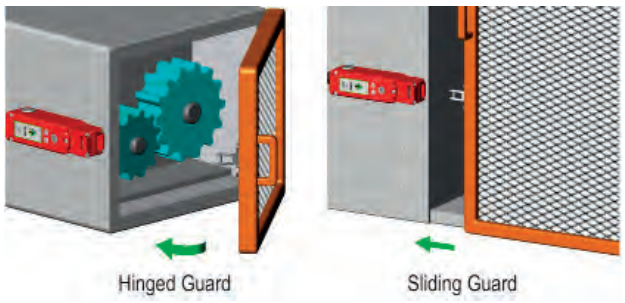
Versions are available offering a Rear Manual Escape Release.

Accessories include a Sliding Handle Bolt to provide holding of heavy or hinged doors and lock off actuators.

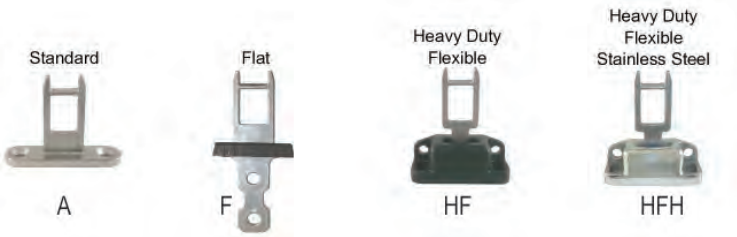
FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Stainless Steel 316 Head version available
Connects to most Safety Relays to give up to PLe Cat.4
Quick Connector version available for ease of installation

4NC Safety Circuits:
2 Solenoid/Lock 2 Actuator/Guard
1NO Auxiliary Circuit:
For indication of Actuator Status (guard open)
1NO Auxiliary Circuit:
For Lock Status (selectable with LED2)



ACTUATOR OPTIONS (see p100)



INSERTION OF ACTUATOR

6.0 5.0 0mm

11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

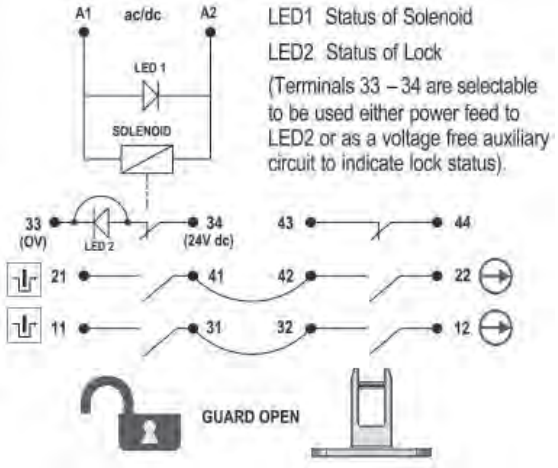
Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V ac/dc or 110Vac or 230Vac
Solenoid Wattage	12W
LED 2 Supply Voltage	24Vdc
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Die Cast (painted red)
Head Material	Die Cast (painted red) or Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +50C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

Guard Locking Switch Metal **Type: SAMLOCK KLM**

SCHEMATIC CIRCUIT:

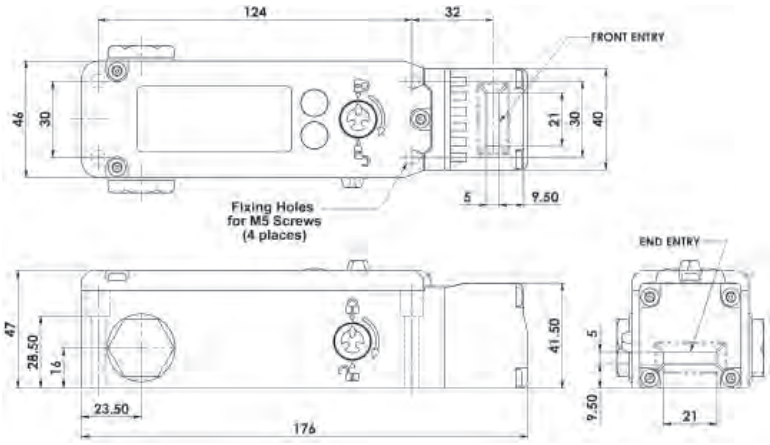


LED1 Status of Solenoid

LED2 Status of Lock

(Terminals 33 – 34 are selectable to be used either power feed to LED2 or as a voltage free auxiliary circuit to indicate lock status).

DIMENSIONS:



RELATED PRODUCTS & ACCESSORIES (see p100-101 and Gate Bolts Section 6)

Sliding Handle Gate Bolt with Lock Off Feature

GATE BOLT LOCK

Rugged metal construction, easy to install on sliding or hinged guards.

Holes for fitting padlocks during maintenance.

Painted yellow and comes with plastic handle and flat actuator.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

2 colour LED (3 wires) Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

REAR MANUAL RELEASE VERSION

Rear push button manual release version provides a means of escape from inside the guarded area.

Fits to switch aperture during maintenance and provides multiple padlock holes.

Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
12	Earth

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23	M20	1/2" NPT	QC M23	M20	1/2" NPT	QC M23
Kobra KLM Switch	24V ac/dc	202001	202002	202003	202401	202402	202403	202301	202302	202303
Kobra KLM Switch	110V ac	202004	202005	202006	202404	202405	202406	202304	202305	202306
Kobra KLM Switch	230V ac	202007	202008	202009	202407	202408	202409	202307	202308	202309

Kobra Actuator	Standard	Add A to Sales Part Number
Kobra Actuator	Flat	Add F to Sales Part Number
Kobra Actuator	Heavy Duty Flexible	Add HF to Sales Part Number
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number
Stainless Steel Head Versions		Add SS to Sales Part Number

Ordering Examples:

Kobra KLM 24V Solenoid M20 Conduit Standard Manual Release Stainless Steel Head Flat Actuator: Sales Number: 202001-SS-F

Kobra KLM 110V Solenoid 1/2" NPT Conduit No Manual Release Standard Actuator: Sales Number: 202305-A

Guard Locking Switch Metal **Type: RAMZLOCK KLTM**

FEATURES:

Spring to lock when actuator is inserted. Energise solenoid to unlock.

Solenoid Locking Door Interlock Safety Switch
Guard Holding up to 3000N (300Kg) (F1Max)

The KLTM Series Guard Locking switch is a tongue type safety interlock switches incorporating traditional mechanical anti-tamper tongue technology utilising IDEM Safety Switches patented cam system.

They interlock and hold closed guard doors to protect operators from moving or hazardous machinery.
They are particularly suited to where a high degree of anti-tamper technology is required to prevent accidental or deliberate attempts to by-pass the interlock.

The KLTM solenoid locking switch has a rugged metal body design and has been developed with a maximum holding force of 3000N which enables it to keep medium to large guard doors closed until hazards have been removed.

IP67 enclosure protection is maintained by a special double seal lid gasket design and metal fixings.

The KLTM has a low profile and the fixing holes are on an industry standard 73mm centre to enable easy retrofitting to new or existing guards (or where extra anti-tamper is required).

The head has the ability to rotate and provides the end user with up to 4 actuator entry positions.

CONTACTS:

KLTM

4NC Safety Contacts

1NO Auxiliary Contact (Guard Open)
1NO Auxiliary Contact (Guard Locked)
(selectable option for LED2 Guard Locked)

LED1 RED Solenoid Power On
LED2 GREEN Switch Locked (if selected)

FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
Rugged Die Cast Metal Housing with Stainless Steel 316 Head
Will fit on 73mm fixing centres
Connects to most Safety Relays to give up to PLe Cat.4
M23 Quick Connector version available for ease of installation
2 manual override points
LED diagnostics for Solenoid, Lock and faults

ACTUATOR OPTIONS (see p100)


A - Standard


HF - Heavy Duty Flexible


F - Flat

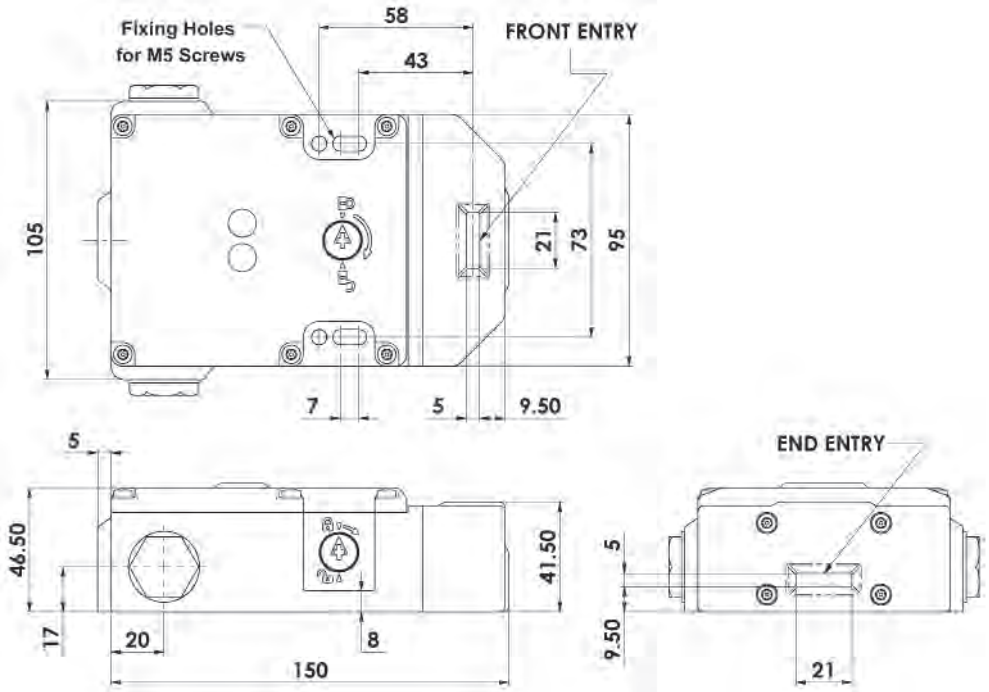

HFH - Heavy Duty Flexible Stainless Steel

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V ac/dc or 110Vac or 230Vac
Solenoid Wattage	12W
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Die Cast Metal (painted red)
Head Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M5

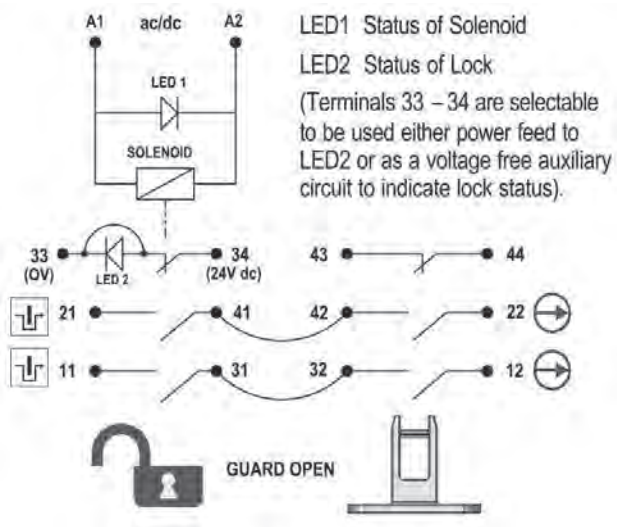
Guard Locking Switch Metal **Type: RAMZLOCK KLTM**

DIMENSIONS:



SCHEMATIC CIRCUIT:

KLTM Version (Mechanical only)



Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	KLTM Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
12	Earth

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23
RAMZLOCK KLTM Switch	24V ac/dc	450001	450002	450003
RAMZLOCK KLTM Switch	110V ac	450004	450005	450006
RAMZLOCK KLTM Switch	230V ac	450007	450008	450009
RAMZLOCK KLTM Actuator	Standard	Add A to Sales Part Number		
RAMZLOCK KLTM Actuator	Flat	Add F to Sales Part Number		
RAMZLOCK KLTM Actuator	Heavy Duty Flexible	Add HF to Sales Part Number		
RAMZLOCK KLTM Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number		

Ordering Example: KLTM M20 24V ac/dc Heavy Duty Flexible Actuator: Sales Number: 450001-HF

Guard Locking Switch Stainless Steel **Type: RYANLOCK KL1-SS**

FEATURES:

IP69K

Spring to lock when actuator is inserted. Energise solenoid to unlock.

Solenoid Locking Interlock Safety Switch featuring Guard Holding up to 2000N (200Kg) (F1Max)

The KL1-SS Series Guard Locking switches have a rugged Stainless Steel 316 body and have been developed with a holding force of 2000N to keep medium to large guard doors closed until hazards have been removed.

They are designed to cope with the rigorous applications of the Food Processing, Packaging, Pharmaceutical and Petro-Chemical Industries.

They have IP69K enclosure protection (maintained by a double seal lid gasket and seals) and can be high pressure hosed with detergent at high temperature.

They have a low profile compact body profile with fixing holes on an industry standard 40mm centre to enable easy fitting to new or existing guards (or where replacement of a non locking tongue switch is required).

The Head will rotate to provide up to 4 actuator entry positions.

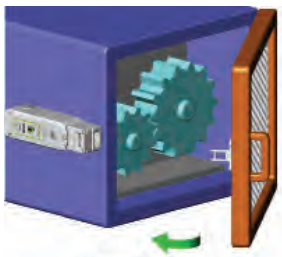
CONTACTS/LED DIAGNOSTICS:

STANDARD - Version 1:

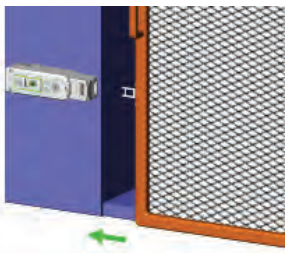
2NC Safety Contacts
1NO Auxiliary Contact (Guard Open)
1NO Auxiliary Contact (Lock Open)
LED1 Solenoid Power

EXTRA LED2 - Version 2:

2NC Safety Contacts
1NO Auxiliary Contact (Guard Open)
LED2 Lock Status:
Closed and Locked
LED1 Solenoid Power



Hinged Guard

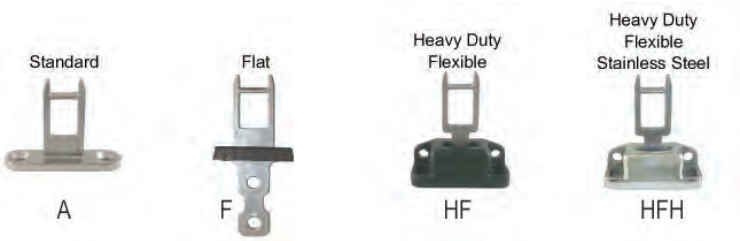


Sliding Guard

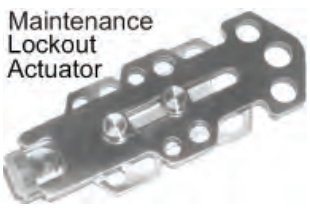
FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Stainless Steel 316 Body and Head
Connects to most Safety Relays to give up to PLe Cat.4
Universal 8 Way MicroLock Connector version available
2 manual override points
IP69K suitable for SIP and CIP Processes
Will fit on 40mm fixing centres

ACTUATOR OPTIONS (see p100)



ACCESSORIES (see p100-101)



Fits to switch aperture during maintenance and provides multiple padlock holes.

INSERTION OF ACTUATOR

6.0 5.0 0mm

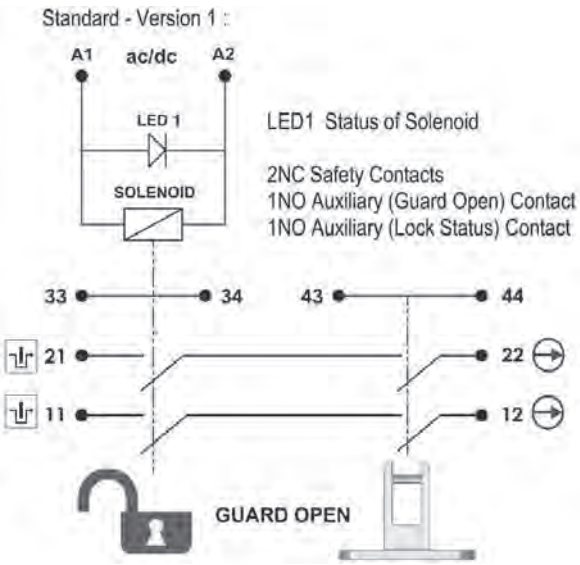
11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

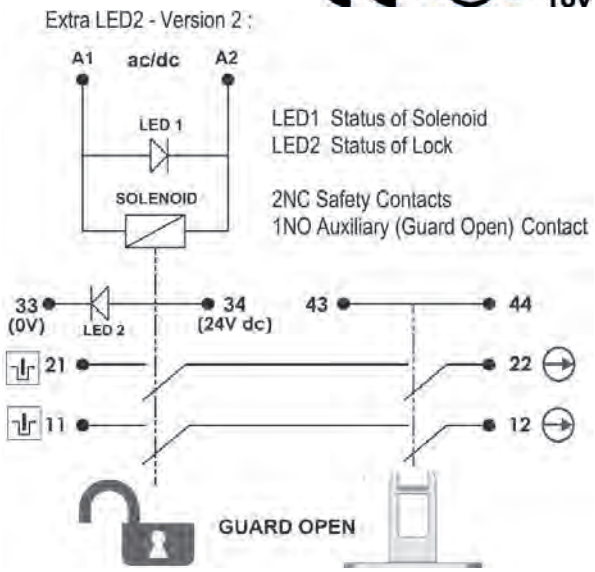
For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V ac/dc or 110Vac or 230Vac
Solenoid Wattage	12W
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 2000N Fzh 1538N
Body Material	Stainless Steel 316
Enclosure Protection	IP69K IP67
Operating Temperature	-25C +50C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M5

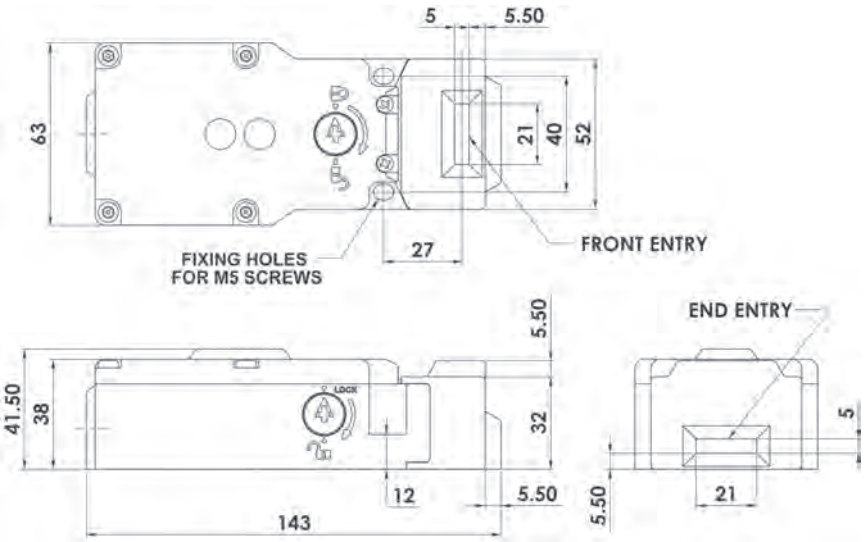
Guard Locking Switch Stainless Steel **Type: RYANLOCK KL1-SS**

SCHEMATIC CIRCUITS:





DIMENSIONS:



QC Quick Connect
M12 8 Pin Flying Lead 250mm (10")
Available on Standard Version only

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin View from Switch	Switch Circuit
2 7	A1 A2
4 6	11/12
8 5	21/22
3 1	43/44

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

STANDARD VERSION 1 (Solenoid LED only)

EXTRA LED VERSION 2 (Lock Status)

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M12	M20	1/2" NPT
Kobra KL1-SS Switch	24V ac/dc	220001	220002	220003	220301	220302
Kobra KL1-SS Switch	110V ac	220004	220005	220006	220304	220305
Kobra KL1-SS Switch	230V ac	220007	220008	220009	220307	220308

Kobra Actuator	Standard	Add A to Sales Part Number
Kobra Actuator	Flat	Add F to Sales Part Number
Kobra Actuator	Heavy Duty Flexible	Add HF to Sales Part Number
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number

Ordering Examples:
Kobra KL1-SS 24V Solenoid M20 Conduit LED2 Version Heavy Flexible Actuator: Sales Number: 220301-HF
Kobra KL1-SS 110V Solenoid 1/2" NPT Conduit Standard Version Standard Actuator: Sales Number: 220005-A

Guard Locking Switch Stainless Steel **Type: HYGIELOCK KL3-SS**

FEATURES:

Spring to lock when actuator is inserted. Energise solenoid to unlock.

Solenoid Locking Interlock Safety Switch featuring Guard Holding up to 3000N (300Kg) (F1Max)

The KL3-SS Series guard locking switches have a rugged Stainless Steel 316 body and have been developed with a holding force of 3000N to keep medium to large guard doors closed until hazards have been removed.

They are designed in accordance with EHEDG guidelines for hygienic design (EHEDG European Hygienic Engineering & Design Group). The mirror-polished surface to Ra10 is designed to cope with direct food splash and cleaning found in the tough applications of the Food Processing Industries.

They have IP69K enclosure protection and can be high pressure hosed with detergent at high temperature.

Designed with slim body under 50mm wide the KL3-SS series can be fitted to 50mm (2") frame sections or to applications where space is restricted.

The head will rotate to provide up to 8 actuator entry positions.

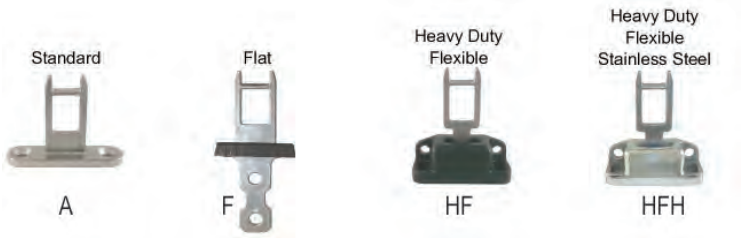
2 Manual override points are provided (by using anti-tamper key).

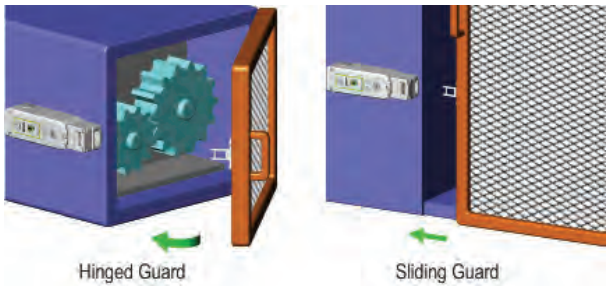
CONTACTS/LED DIAGNOSTICS:

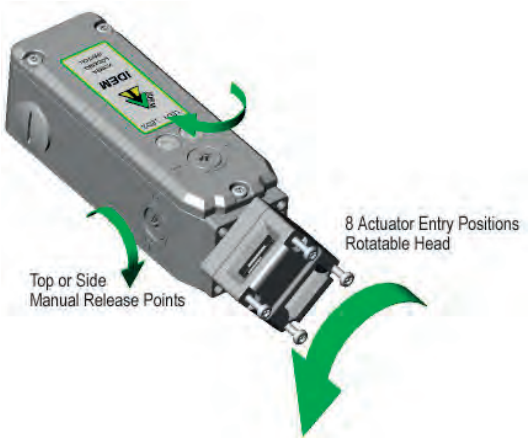
A unique mechanical design featuring 2 independent contact blocks gives a high function and diagnostic specification.

4NC Safety Contacts
1NO Auxiliary Contact (Guard Open)
LED1 Solenoid Power
LED2 Lock Status indication or 1NO Auxiliary Contact (Lock Open)

ACTUATOR OPTIONS (see p100)







FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Stainless Steel 316 Body and Head - Mirror Polished to Ra10
Connects to most Safety Relays to give up to PLe Cat.4
IP69K suitable for SIP and CIP Processes
Will fit on 50mm frame sections or where space is restricted
4NC Safety Contacts independently selectable

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V ac/dc or 110Vac or 230Vac
Solenoid Wattage	12W
LED2 Supply Voltage	24Vdc
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Stainless Steel 316
Enclosure Protection	IP69K IP67
Operating Temperature	-25C +50C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

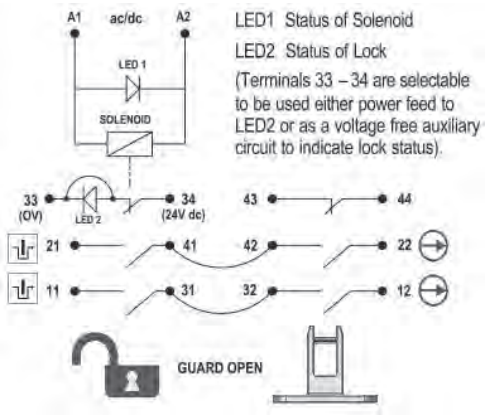
INSERTION OF ACTUATOR

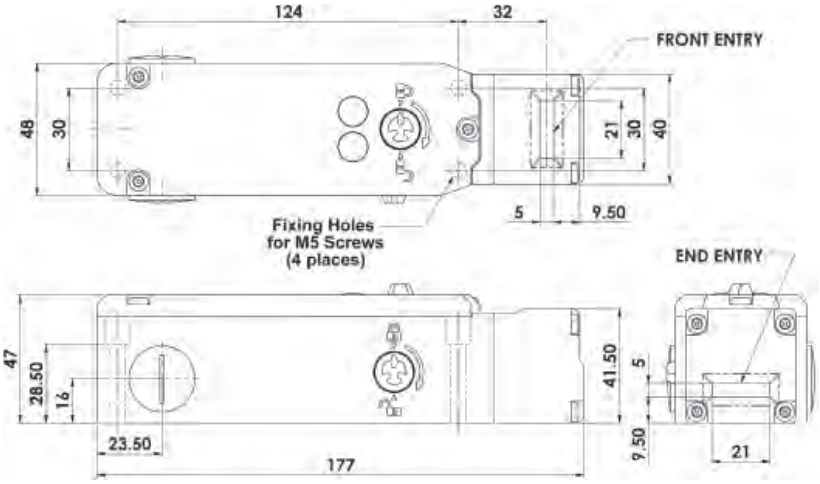
	6.0	5.0	0mm
11/12	Open		
21/22	Open		
33/34			Open
43/44			Open

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Guard Locking Switch Stainless Steel **Type: HYGIELOCK KL3-SS**

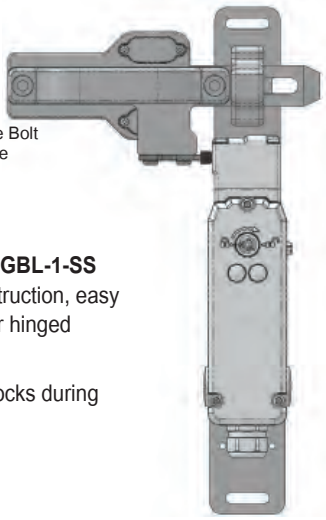
SCHEMATIC CIRCUIT & DIMENSIONS:





Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
Earth	12

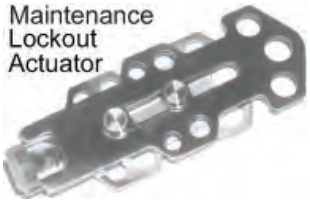
ACCESSORIES (see p100-101 and Gate Bolts Section 6)



Sliding Handle Gate Bolt with Lock Off feature

GATE BOLT LOCK GBL-1-SS
Stainless Steel construction, easy to install on sliding or hinged guards.

Holes for fitting padlocks during maintenance.



Fits to switch aperture during maintenance and provides multiple padlock holes.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.


STANDARD MANUAL RELEASE LID AND SIDE


MANUAL RELEASE LID ONLY (Not SIDE)


NO MANUAL RELEASE FITTED (Blanked)

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23	M20	1/2" NPT	QC M23	M20	1/2" NPT	QC M23
Kobra KL3-SS Switch	24V ac/dc	205001	205002	205003	205401	205402	205403	205301	205302	205303
Kobra KL3-SS Switch	110V ac	205004	205005	205006	205404	205405	205406	205304	205305	205306
Kobra KL3-SS Switch	230V ac	205007	205008	205009	205407	205408	205409	205307	205308	205309

Kobra Actuator	Standard	Add A to Sales Part Number
Kobra Actuator	Flat	Add F to Sales Part Number
Kobra Actuator	Heavy Duty Flexible	Add HF to Sales Part Number
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number

Manual Release Key
(order separately - not supplied with switches)

Sales Number: 140123

Ordering Examples:
24V Solenoid M20 Conduit Standard Manual Release Flat Actuator: Sales Number: 205001-F
110V Solenoid 1/2" NPT Conduit No Manual Release Standard Actuator: Sales Number: 205305-A

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Guard Locking Switch Stainless Steel **Type: HYGIELOCK KL4-SS**

FEATURES:

IP69K

Spring to lock when actuator is inserted. Energise solenoid to unlock.

Version with REQUEST Button

(Momentary Push Button with 1 set of changeover contacts in Lid Assembly)

Version without Request button.

Solenoid Locking Interlock Safety Switch featuring Guard Holding up to 3000N (300Kg) (F1Max)

The KL4-SS Series Guard Locking switches have a rugged Stainless Steel 316 body and have been developed with a holding force of 3000N to keep medium to large guard doors closed until hazards have been removed.

They are designed to cope with the rigorous applications of the Food Processing, Packaging, Pharmaceutical and Petro-Chemical Industries.

They have IP69K enclosure protection and can be high pressure hosed with detergent at high temperature.

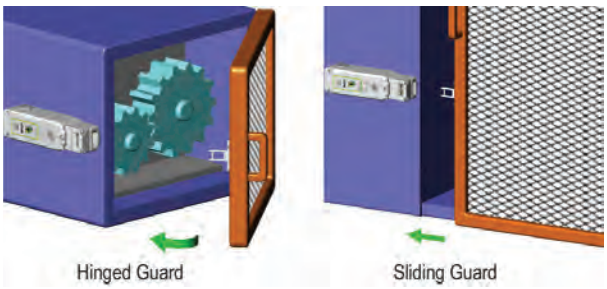
With a slim body design of under 50mm wide they can be fitted to 50mm (2") frame sections or to applications where space is restricted. The Head will rotate to provide up to 8 actuator entry positions.

2 manual override points are provided (this is achieved by using an anti-tamper key).

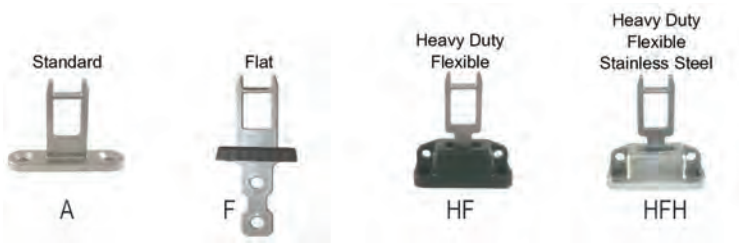
CONTACTS/LED DIAGNOSTICS:

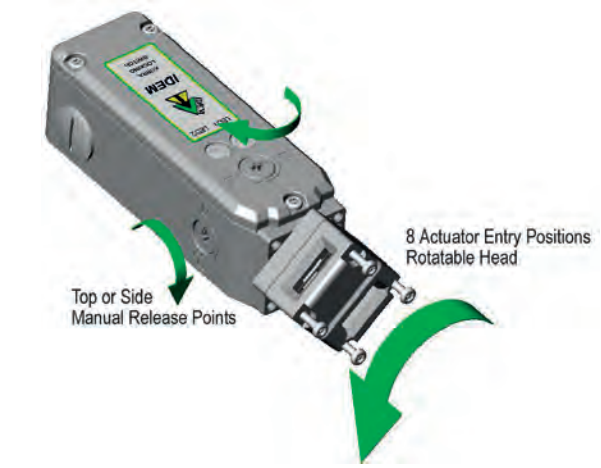
A unique mechanical design featuring 2 independent contact blocks gives a high function and diagnostic specification.

4NC Safety Contacts
1NO Auxiliary Contact (Guard Open)
LED1 Solenoid Power
LED2 Lock Status indication or 1NO Auxiliary Contact (Lock Open)



ACTUATOR OPTIONS (see p100)





INSERTION OF ACTUATOR

6.0 5.0 0mm

11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

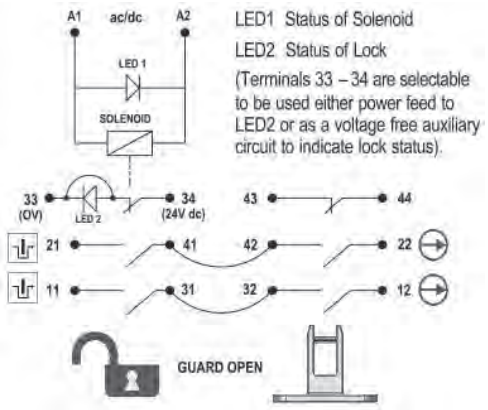
FUNCTIONAL SPECIFICATIONS:

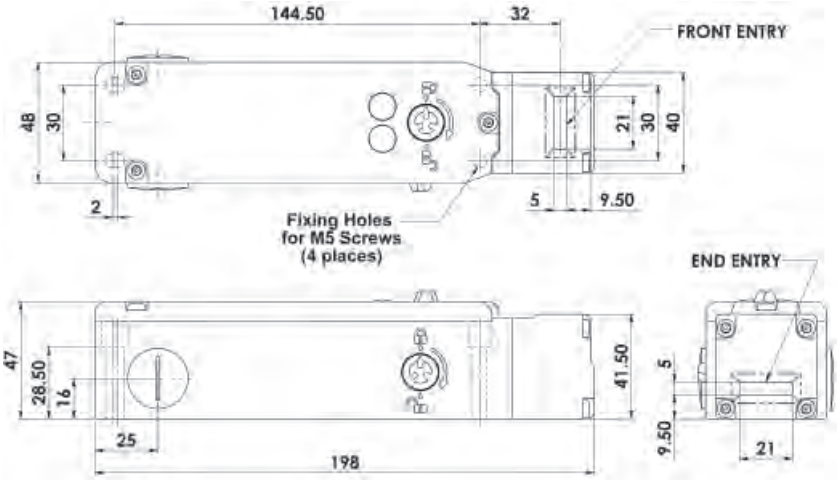
Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Stainless Steel 316 Housings
Connects to most Safety Relays to give up to PLe Cat.4
IP69K suitable for SIP and CIP Processes
Will fit on 50mm frame sections or where space is restricted
4NC Safety Contacts independently selectable

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V ac/dc or 110Vac or 230Vac
Solenoid Wattage	12W
LED2 Supply Voltage	24Vdc
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Stainless Steel 316
Enclosure Protection	IP69K IP67
Operating Temperature	-25C +50C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

Guard Locking Switch Stainless Steel **Type: HYGIELOCK KL4-SS**

SCHEMATIC CIRCUIT & DIMENSIONS:

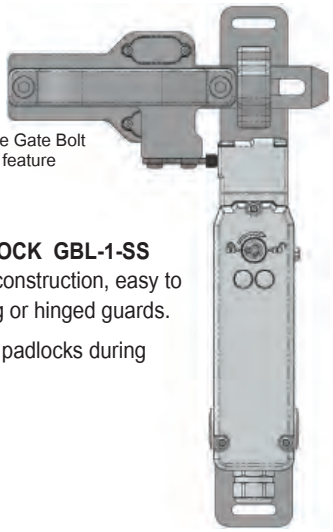




Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
Earth	12

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

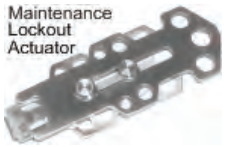
ACCESSORIES (see p100-101 and Gate Bolts Section 6)



Sliding Handle Gate Bolt with Lock Off feature

GATE BOLT LOCK GBL-1-SS
Rugged metal construction, easy to install on sliding or hinged guards.

Holes for fitting padlocks during maintenance.



Fits to switch aperture during maintenance and provides multiple padlock holes.

2 colour LED (3 wires) Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.



		STANDARD MANUAL RELEASE LID AND SIDE			MANUAL RELEASE LID ONLY (Not SIDE)			NO MANUAL RELEASE FITTED (Blanked)		
SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23	M20	1/2" NPT	QC M23	M20	1/2" NPT	QC M23
Kobra KL4-SS Switch	24V ac/dc	209001	209002	209003	209401	209402	209403	209301	209302	209303
Kobra KL4-SS Switch	110V ac	209004	209005	209006	209404	209405	209406	209304	209305	209306
Kobra KL4-SS Switch	230V ac	209007	209008	209009	209407	209408	209409	209307	209308	209309

Kobra Actuator	Standard	Add A to Sales Part Number
Kobra Actuator	Flat	Add F to Sales Part Number
Kobra Actuator	Heavy Duty Flexible	Add HF to Sales Part Number
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number
Momentary Request Push Button (fitted to Lid) 1 x Changeover Contact	Common - Closed/Open	Add PB to Sales Part Number
Manual Release Key (order separately - not supplied with switches) Sales Number: 140123		**Ordering Examples:** **24V Solenoid M20 Conduit Standard Manual Release Flat Actuator: Sales Number: 209001-F** **110V Solenoid 1/2" NPT Conduit No Manual Release Push Button Standard Actuator: Sales Number: 209305-A-PB** **24V Solenoid M20 Conduit Standard Manual Release S/Steel Heavy Flexible Actuator: Sales Number: 209301-HFH**

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Guard Locking Switch Stainless Steel **Type: KLT-SS**

FEATURES:

Spring to lock when actuator is inserted. Energise solenoid to unlock.

Solenoid Locking Door Interlock Safety Switch with Guard Holding up to 3000N (300Kg) (F1Max)

The KLT-SS Series Guard Locking switch is a tongue type safety interlock switch incorporating traditional mechanical anti-tamper tongue technology utilising IDEM Safety Switches patented cam system.

They interlock and hold closed guard doors to protect operators from moving or hazardous machinery.
They are particularly suited to where a high degree of anti-tamper technology is required to prevent accidental or deliberate attempts to by-pass the interlock.

The KLT-SS Solenoid Locking Switch has a mirror polished Stainless Steel 316 body design and have been developed with a maximum holding force of 3000N to keep medium to large guard doors closed until hazards have been removed.

IP69K enclosure protection is maintained by a double seal lid gasket design and metal fixings.

The KLT-SS has a low profile and fixing holes are on an industry standard 73mm centre to enable easy retrofitting to new or existing guards (or where extra anti-tamper is required).

The head rhas been designed to allow rotation to provide up to 4 actuator entry positions.

CONTACTS:

KLT-SS

4NC Safety Contacts

1NO Auxiliary Contact (Guard Open)
1NO Auxiliary Contact (Guard Locked)
(selectable option for LED2 Guard Locked)

LED1 RED Solenoid Power On
LED2 GREEN Switch Locked (if selected)

FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
Mirror Polished (Ra10) Stainless Steel 316
Will fit on 73mm fixing centres
Connects to most Safety Relays to give up to PLe Cat.4
M23 Quick Connector version available for ease of installation
1 manual override points
LED diagnostics for Solenoid, Lock and faults

ACTUATOR OPTIONS (see p100)


A - Standard


HF - Heavy Duty Flexible


F - Flat

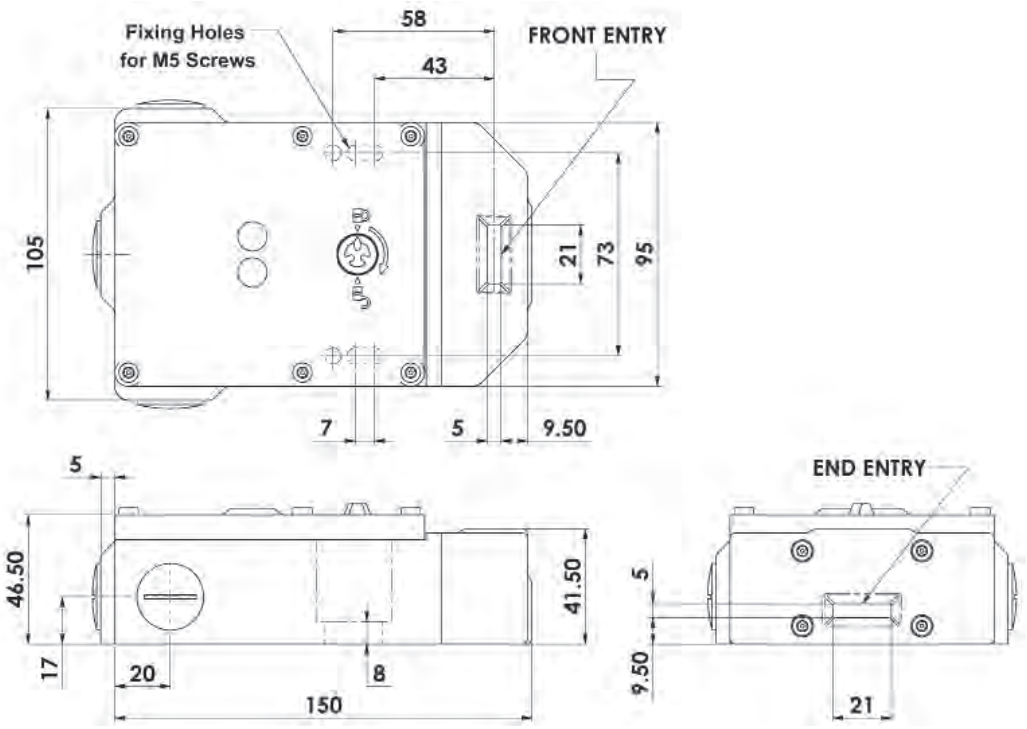

HFH - Heavy Duty Flexible Stainless Steel

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V ac/dc or 110V ac or 230V ac
Solenoid Wattage	12W
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Polished Stainless Steel 316
Head Material	Polished Stainless Steel 316
Enclosure Protection	IP69K
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M5

Guard Locking Switch Stainless Steel **Type: KLT-SS**

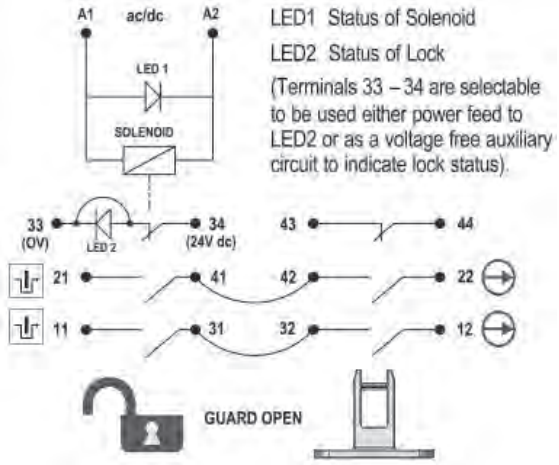
DIMENSIONS:



Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	KLT-SS Switch Circuit
1 3	A1 A2
4	11/12
7 8	21/22
2 5	43/44
9	33
10	34
12	Earth

SCHEMATIC CIRCUIT:

KLT-SS Version (Mechanical only)



FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23
KLT-SS Switch	24V ac/dc	451001	451002	451003
KLT-SS Switch	110V ac	451004	451005	451006
KLT-SS Switch	230V ac	451007	451008	451009
KLT-SS Actuator	Standard	Add A	to Sales Part Number	
KLT-SS Actuator	Flat	Add F	to Sales Part Number	
KLT-SS Actuator	Heavy Duty Flexible	Add HF	to Sales Part Number	
KLT-SS Actuator	Stainless Steel Heavy Duty Flexible	Add HFH	to Sales Part Number	

Ordering Example: KLT-SS M20 24V ac/dc Heavy Duty Flexible Actuator: Sales Number: 451001-HF

Guard Locking Switch Plastic **Type: SEZYLOCK KLP-P2L**

FEATURES:

Energise solenoid to lock.

Spring to unlock when solenoid is de-energised.

POWER TO LOCK

Solenoid Locking Interlock Safety Switch featuring
POWER TO LOCK with Guard Holding up to 2000N (200Kg) (F1Max)

The KLP-P2L Series Guard Locking switches have a slim plastic body design and have been developed with a holding force of 2000N to keep medium guard doors closed until hazards have been removed.

They are Power to Lock - Spring to Unlock, suitable for applications where immediate unlocking is required at removal or loss of power.
(They are NOT suitable for machines with a running down time).

The high specification plastic body has a high resistance to chemical and washdown solutions, and the Stainless Steel Head provides a durable robust protection of the cam interlock.

IP67 enclosure protection is maintained by a double seal lid gasket design and metal fixings.

They have a slim profile and are designed to fit on 50mm (2") frame sections or to applications where space is restricted.

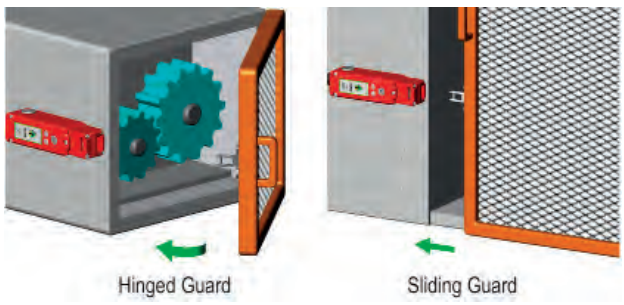
The head will rotate to provide up to 8 actuator entry positions.

FUNCTIONAL SPECIFICATIONS:

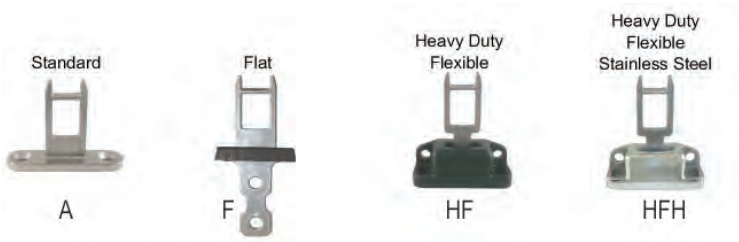
Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
High Specification Polyester Housing
Stainless Steel 316 Head
Connects to most Safety Relays to give up to PLe Cat.4
Quick Connector version available for ease of installation
Machine safety contacts open when power is released
LED Status of Solenoid Power

2NC Safety Circuits:

1NC 1NO Auxiliary circuits - Actuator/Door Status



ACTUATOR OPTIONS (see p100)



INSERTION OF ACTUATOR

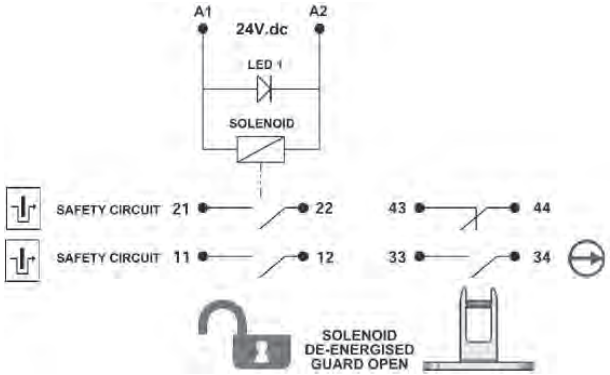
	6.0	5.0	0mm
11/12	Open		Solenoid Energised
21/22	Open		Solenoid Energised
33/34	Open		Tongue Inserted
43/44		Open	Tongue Inserted

For all IDEM Power to Lock switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted and power is applied to the solenoid.

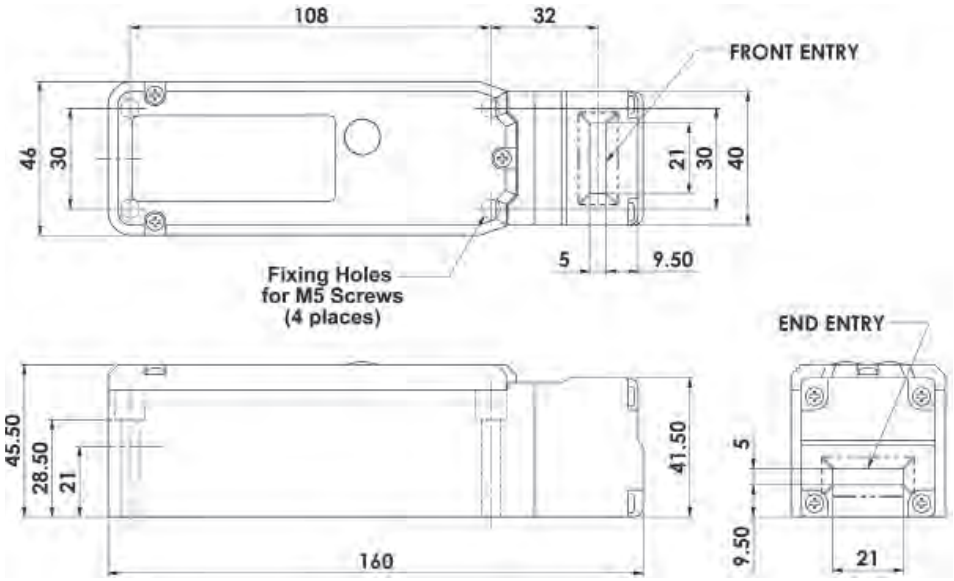
Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24Vdc
Solenoid Wattage	12W (Inrush 50W)
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 2000N Fzh 1538N
Body Material	Polyester
Head Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

Guard Locking Switch Plastic **Type: SEZYLOCK KLP-P2L**

SCHEMATIC CIRCUIT:



DIMENSIONS:



RELATED PRODUCTS & ACCESSORIES (see p100-101 and Gate Bolts Section 6)

Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34

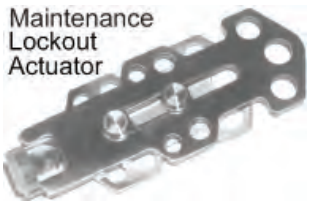
FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

GATE BOLT LOCK

Rugged metal construction, easy to install on sliding or hinged guards.

Holes for fitting padlocks during maintenance.

Painted yellow and comes with plastic handle and flat actuator.



Fits to switch aperture during maintenance and provides multiple padlock holes.

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23
Kobra KLP-P2L Switch	24V dc	201021	201022	201023
To order Switch with Actuator				
Kobra Actuator	Standard	Add A	to Sales Part Number	
Kobra Actuator	Flat	Add F	to Sales Part Number	
Kobra Actuator	Heavy Duty Flexible	Add HF	to Sales Part Number	
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH	to Sales Part Number	

Guard Locking Switch Metal **Type: SAMLOCK KLM-P2L**

FEATURES:

Energise solenoid to lock.

Spring to unlock when solenoid is de-energised.

STAINLESS STEEL HEAD

POWER TO LOCK

Solenoid Locking Interlock Safety Switch featuring POWER TO LOCK with Guard Holding to 3000N (300Kg) (F1Max)

The KLM-P2L Series Guard Locking switches have a slim metal body design and have been developed with a holding force of 3000N to keep large guard doors closed until hazards have been removed.

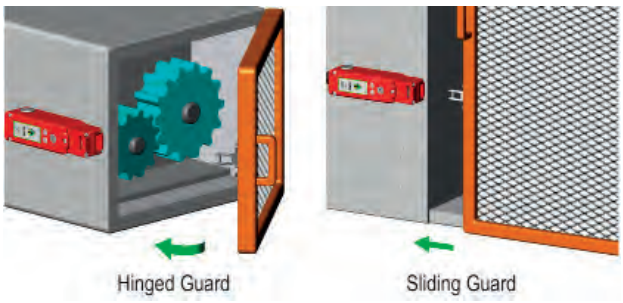
They are Power to Lock - Spring to Unlock - suitable for applications where immediate unlocking is required at removal or loss of power. (They are NOT suitable for machines with a running down time).

The rugged die cast body provides a durable robust hold closed interlock protection and is available with Stainless Steel Heads for extra durability. Flexible actuators are available to aid where some alignment is a problem.

IP67 enclosure protection is maintained by a double seal lid gasket design and metal fixings.

They have a slim profile and are designed to fit on 50mm (2") frame sections or to applications where space is restricted.

The head will rotate to provide up to 8 actuator entry positions.



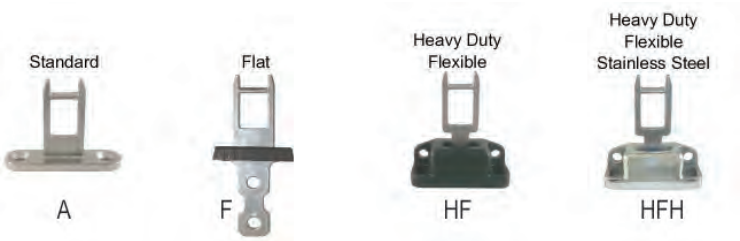
FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Die Cast Metal Housing (painted red)
Stainless Steel Head version available
Connects to most Safety Relays to give up to PLe Cat.4
Quick Connector version available for ease of installation
Machine safety contacts open when power is released
LED Status of Solenoid Power

2NC Safety Circuits:

1NC 1NO Auxiliary circuits - Actuator/Door Status

ACTUATOR OPTIONS (see p100)



INSERTION OF ACTUATOR

6.0 5.0 0mm

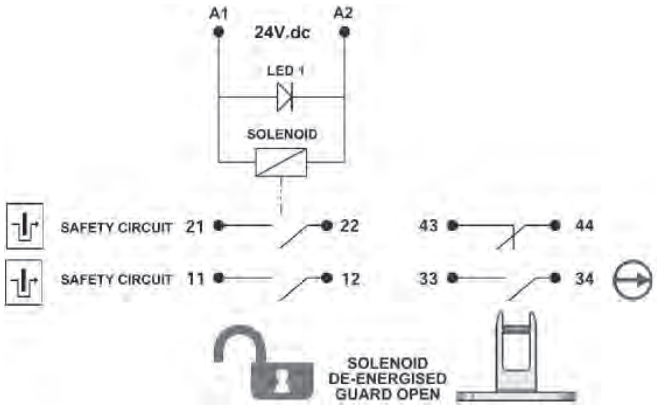
11/12	Open	Solenoid Energised
21/22	Open	Solenoid Energised
33/34	Open	Tongue Inserted
43/44	Open	Tongue Inserted

For all IDEM Power to Lock switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted and power is applied to the solenoid.

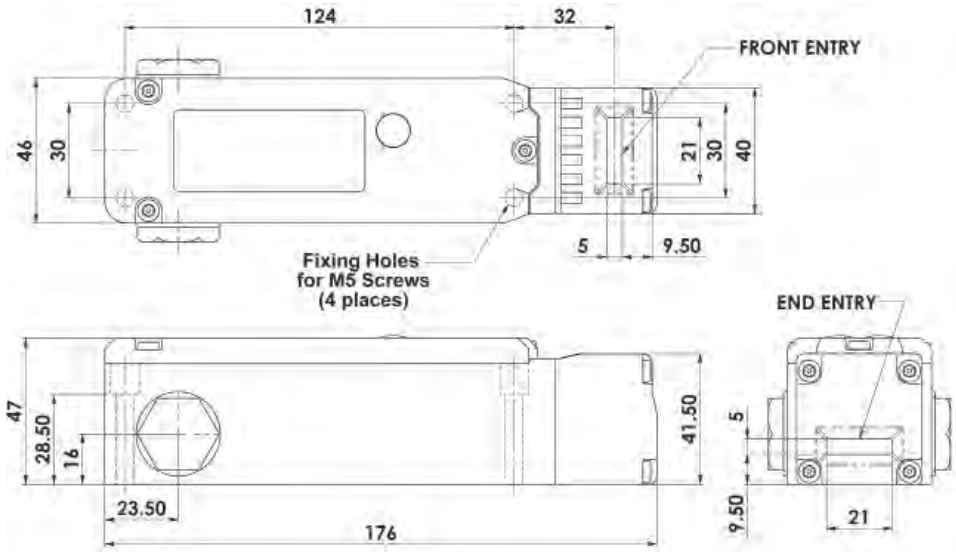
Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24Vdc
Solenoid Wattage	12W (Inrush 50W)
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Die Cast (painted red)
Head Material	Die Cast (painted red) or Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

Guard Locking Switch Metal **Type: SAMLOCK KLM-P2L**

SCHEMATIC CIRCUIT:



DIMENSIONS:



RELATED PRODUCTS & ACCESSORIES (see p100-101 and Gate Bolts Section 6)

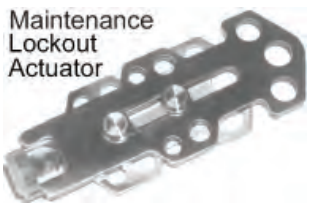
Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
12	Earth

GATE BOLT LOCK

Rugged metal construction, easy to install on sliding or hinged guards.

Holes for fitting padlocks during maintenance.

Painted yellow and comes with plastic handle and flat actuator.



Fits to switch aperture during maintenance and provides multiple padlock holes.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23
Kobra KLM-P2L Switch	24V dc	202021	202022	202023
To order Switch with Actuator				
Kobra Actuator	Standard	Add A	to Sales Part Number	
Kobra Actuator	Flat	Add F	to Sales Part Number	
Kobra Actuator	Heavy Duty Flexible	Add HF	to Sales Part Number	
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH	to Sales Part Number	
Stainless Steel Head Version		Add SS to Sales Part Number		

Guard Locking Switch Metal **Type: RAMZLOCK KLTM-P2L**

FEATURES:

Energise solenoid to lock.

Spring to unlock when solenoid is de-energised.

STAINLESS STEEL HEAD

POWER TO LOCK

Solenoid Locking Interlock Safety Switch featuring POWER TO LOCK with Guard Holding up to 3000N (300Kg) (F1Max)

KLTM-P2L Series Guard Locking switches have a rugged die cast metal body design with a stainless steel head. They have been developed with a holding force of 3000N to keep large guard doors closed until hazards have been removed.

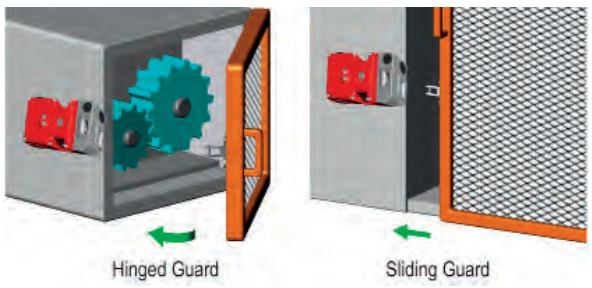
They are Power to Lock - Spring to Unlock - suitable for applications where immediate unlocking is required at removal or loss of power.
(They are NOT suitable for machines with a running down time).

The rugged die cast body provides a durable robust hold closed interlock protection and the stainless steel head provides extra durability. Flexible actuators are available to aid where some alignment is a problem.

IP67 enclosure protection is maintained by a double seal lid gasket design and metal fixings.

They have a low profile and fixing holes are on an industry standard 73mm centre to enable easy retrofitting to new or existing guards.

The head will rotate to provide up to 4 actuator entry positions.



FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Die Cast Metal Housing (painted red)
Stainless Steel Head version available
Connects to most Safety Relays to give up to PLe Cat.4
Quick Connector version available for ease of installation
Machine safety contacts open when power is released
LED Status of Solenoid Power

4NC Safety Circuits:

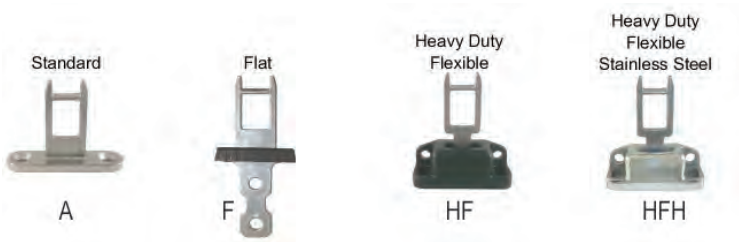
1NC 1NO Auxiliary circuits - Actuator/Door Status

KLTM-P2L

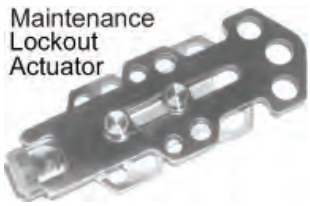
4NC Safety Contacts:
2 Guard Closed
2 Switch Locked
1NO Auxiliary Contact (Guard Open)
1NO Auxiliary Contact (Guard Locked)

LED RED Solenoid Power On

ACTUATOR OPTIONS (see p100)



MAINTENANCE LOCKOUT ACTUATOR



Fits to switch aperture during maintenance and provides multiple padlock holes. (See p100-101.)

For all IDEM Power to Lock switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted and power is applied to the solenoid.

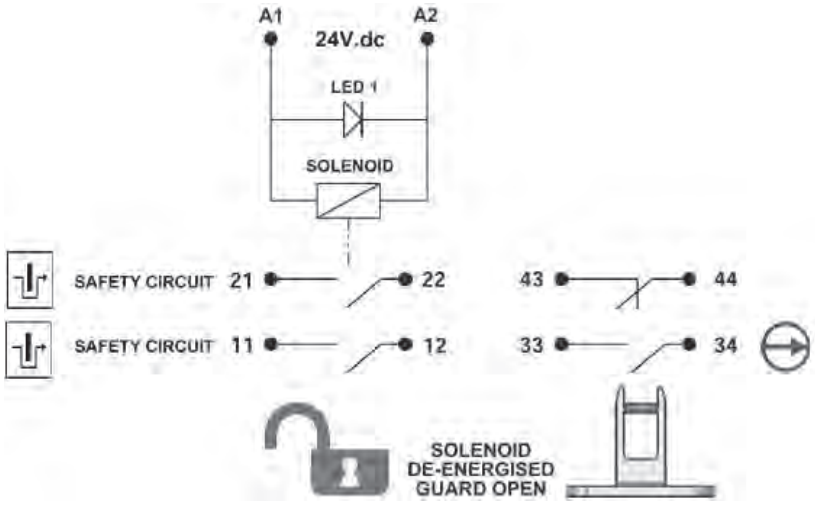
Standards: EN14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

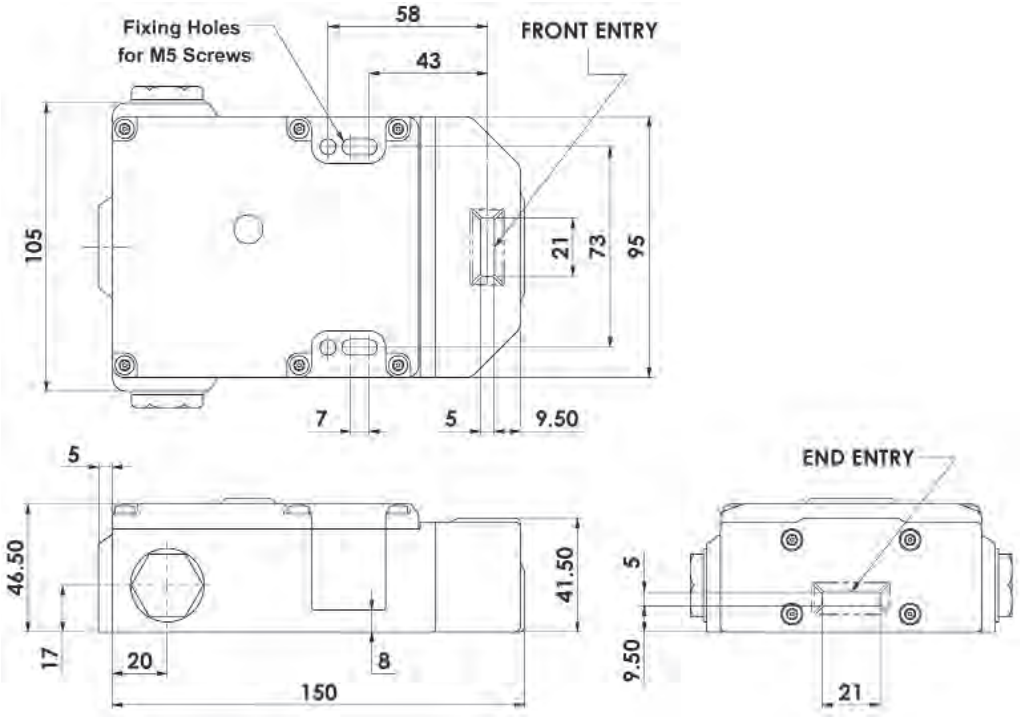
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24Vdc
Solenoid Wattage	12W (Inrush 50W)
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Die Cast (painted red)
Head Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

Guard Locking Switch Metal **Type: RAMZLOCK KLTM-P2L**

SCHEMATIC CIRCUIT:



DIMENSIONS:



Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	KLTM Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
12	Earth

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23
Kobra KLTM-P2L Switch	24V dc	450021	450022	450023
To order Switch with Actuator				
Kobra Actuator	Standard	Add A	to Sales Part Number	
Kobra Actuator	Flat	Add F	to Sales Part Number	
Kobra Actuator	Heavy Duty Flexible	Add HF	to Sales Part Number	
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH	to Sales Part Number	

Guard Locking Switch Stainless Steel **Type: KL3-SS-P2L**

FEATURES:

Solenoid Locking Interlock Safety Switch featuring
POWER TO LOCK with Guard Holding to 3000N (300Kg) (F1Max)

The KL3-SS-P2L Series Guard Locking switches have a slim stainless steel 316 body design and have been developed with a holding force of 3000N to keep large guard doors closed until hazards have been removed.

They are Power to Lock - Spring to Unlock - suitable for applications where immediate unlocking is required at removal or loss of power. (They are NOT suitable for machines with a running down time).

The Stainless Steel 316 housing provides a durable robust hold closed. Flexible actuators are available to aid where some alignment is a problem.

IP69K enclosure protection is maintained by a double seal lid gasket design and metal fixings.

They have a slim profile and are designed to fit on 50mm (2") frame sections or to applications where space is restricted.

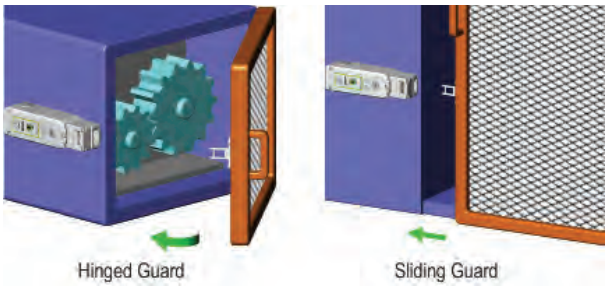
The head will rotate to provide up to 8 actuator entry positions.

FUNCTIONAL SPECIFICATIONS:

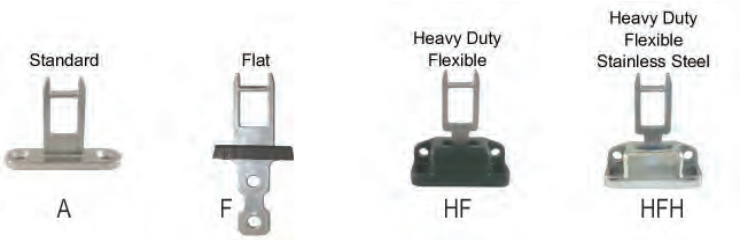
Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Stainless Steel 316 Housing and fittings
Connects to most Safety Relays to give up to PLe Cat.4
Quick Connector version available for ease of installation
Machine safety contacts open when power is released
LED Status of Solenoid Power

2NC Safety Circuits:

1NC 1NO Auxiliary circuits - Actuator/Door Status



ACTUATOR OPTIONS (see p100)



8 Actuator Entry Positions
Rotatable Head

INSERTION OF ACTUATOR

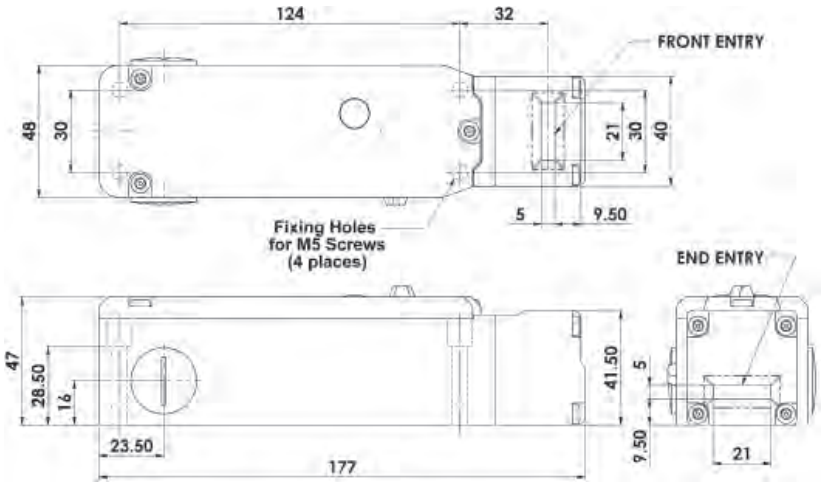
	6.0	5.0	0mm
11/12	Open		Solenoid Energised
21/22	Open		Solenoid Energised
33/34	Open		Tongue Inserted
43/44		Open	Tongue Inserted

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Solenoid Voltage (by Sales Number)	24V dc
Solenoid Wattage	12W (Inrush 50W)
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Stainless Steel 316
Enclosure Protection	IP69K
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

Guard Locking Switch Stainless Steel **Type: KL3-SS-P2L**

DIMENSIONS:

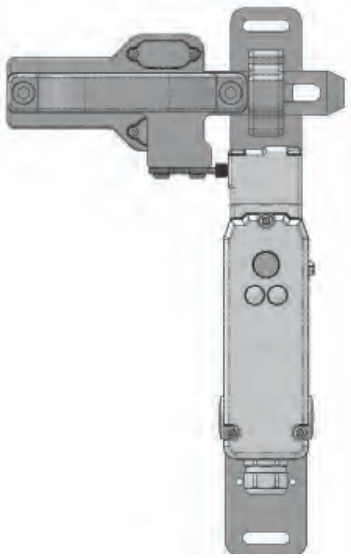


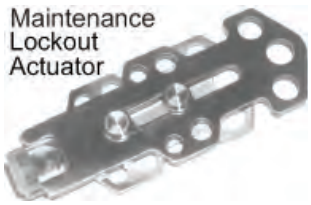
RELATED PRODUCTS & ACCESSORIES (see p100-101 and Gate Bolts Section 6)

GATE BOLT LOCK

Rugged metal construction, easy to install on sliding or hinged guards.

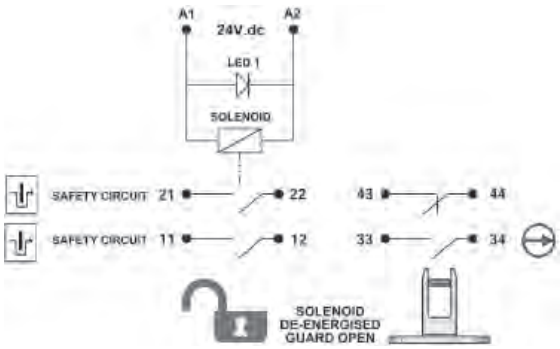
Holes for fitting padlocks during maintenance.





Fits to switch aperture during maintenance and provides multiple padlock holes.

SCHEMATIC CIRCUIT:



Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
12	Earth

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

SALES NUMBER	SOLENOID VOLTAGE	M20	1/2" NPT	QC M23
Kobra KL3-SS-P2L	24V dc	205021	205022	205023
To order Switch with Actuator				
Kobra Actuator	Standard	Add A	to Sales Part Number	
Kobra Actuator	Flat	Add F	to Sales Part Number	
Kobra Actuator	Heavy Duty Flexible	Add HF	to Sales Part Number	
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH	to Sales Part Number	
Stainless Steel Head Version		Add SS to Sales Part Number		

Guard Locking - Rear Manual Escape Release Switches
Types: KLM-RR & HYGIELOCK KL3-SS-RR

FEATURES & APPLICATION:

KLM-RR - IP67 Die-Cast (painted red)

Spring to lock when actuator is inserted. Energise solenoid to unlock or press rear release button.

KL3-SS-RR - IP69K
Stainless Steel 316 Housing with mirror polished finish (Ra10)

Spring to lock when actuator is inserted. Energise solenoid to unlock or press rear release button.

Solenoid Locking Door Interlock Safety Switches featuring Guard Holding up to 3000N (300Kg) (F1Max) and Rear Manual Escape Release

All the features and specifications of the standard KLM and KL3-SS are maintained with the addition of an extra Rear Manual Escape Release button being provided at the rear of the housing.

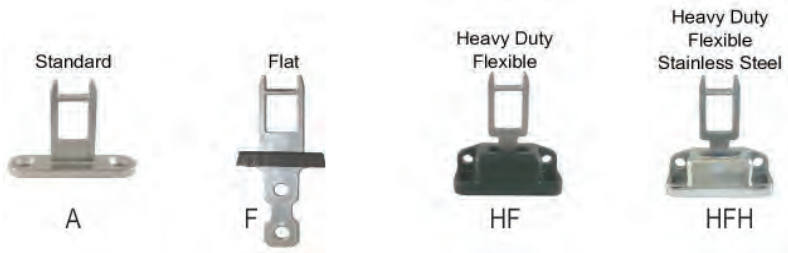
APPLICATION:

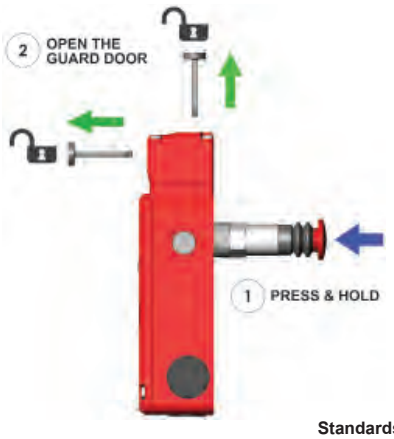
Where the risk assessment for the application permits, a non-latching manual escape release is provided to enable quick release of the switch lock in case of emergency.

The switch can be mounted such that access to the release button is available from inside the active guard area.

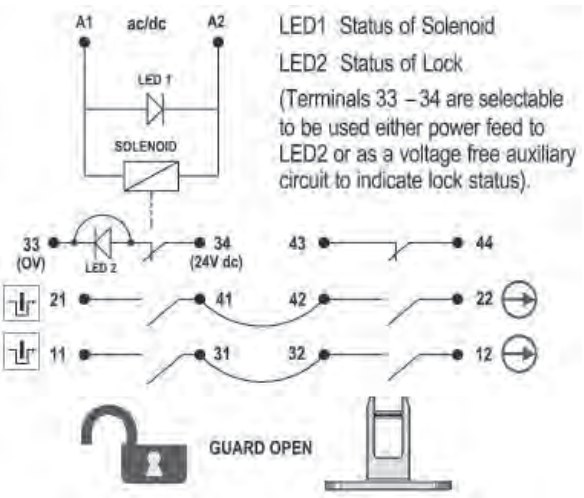
Pressing and holding the red button will release the lock mechanism and open the lock monitoring contacts whilst the guard can be pushed open.

ACTUATOR OPTIONS (see p100)





SCHEMATIC CIRCUIT:



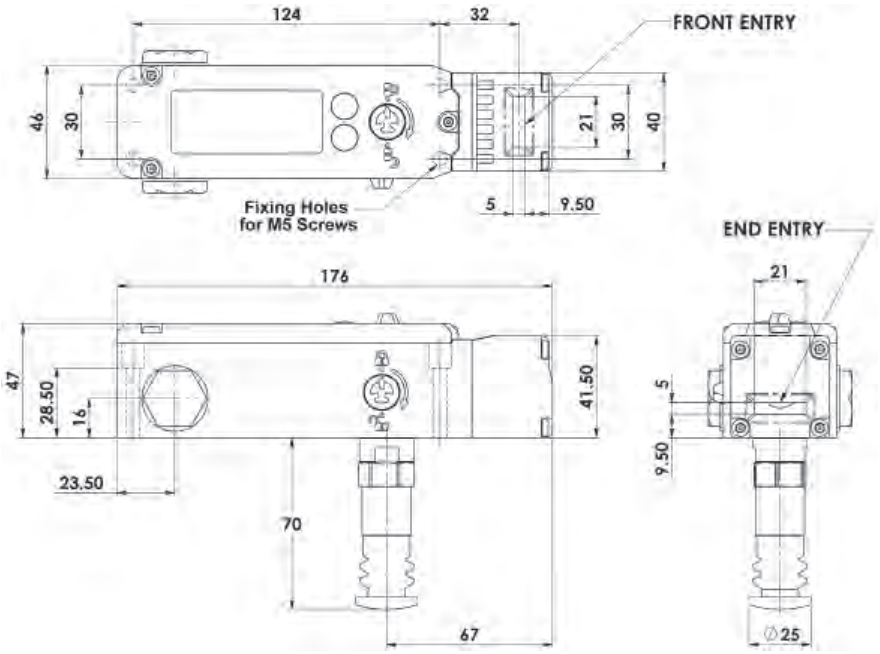
Standards: ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
KLT-SS - Solenoid Voltage (by Sales Number)	24V ac/dc or 110Vac or 230Vac
Solenoid Wattage	12W
LED 2 Supply Voltage	24Vac
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	KLM-RR Die Cast (painted red) KL3-SS-RR Polished Stainless Steel 316
Head Material	KLM-RR Die Cast or Stainless Steel 316 KL3-SS-RR Polished Stainless Steel 316
Enclosure Protection	KLM-RR IP67 KL3-SS-RR IP69K
Operating Temperature	-25C +50C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

Guard Locking - Rear Manual Escape Release Switches
Types: KLM-RR & HYGIELOCK KL3-SS-RR

DIMENSIONS:



Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
Earth	12

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

KLM-RR Die Cast painted red (Stainless Steel Head option available)		STANDARD MANUAL RELEASE LID AND SIDE			MANUAL RELEASE LID ONLY (Not SIDE)			NO MANUAL RELEASE FITTED (Blanked)		
SALES NUMBER	**SOLENOID VOLTAGE**	**M20**	**1/2" NPT**	**QC M23**	**M20**	**1/2" NPT**	**QC M23**	**M20**	**1/2" NPT**	**QC M23**
Kobra KLM-RR Switch	24V ac/dc	212001	212002	212003	212401	212402	212403	212301	212302	212303
Kobra KLM-RR Switch	110V ac	212004	212005	212006	212404	212405	212406	212304	212305	212306
Kobra KLM-RR Switch	230V ac	212007	212008	212009	212407	212408	212409	212307	212308	212309

Kobra Actuator	Standard	Add A to Sales Part Number
Kobra Actuator	Flat	Add F to Sales Part Number
Kobra Actuator	Heavy Duty Flexible	Add HF to Sales Part Number
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number
Stainless Steel Head Versions		Add SS to Sales Part Number

Ordering Example: 24V Solenoid M20 Conduit Standard Manual Release Standard Actuator: Sales Number: 212001-A

KL3-SS-RR Stainless Steel 316 (Mirror Polished Finish to Ra10)		STANDARD MANUAL RELEASE LID AND SIDE			MANUAL RELEASE LID ONLY (Not SIDE)			NO MANUAL RELEASE FITTED (Blanked)		
SALES NUMBER	**SOLENOID VOLTAGE**	**M20**	**1/2" NPT**	**QC M23**	**M20**	**1/2" NPT**	**QC M23**	**M20**	**1/2" NPT**	**QC M23**
Kobra KL3-SS-RR Switch	24V ac/dc	215001	215002	215003	215401	215402	215403	215301	215302	215303
Kobra KL3-SS-RR Switch	110V ac	215004	215005	215006	215404	215405	215406	215304	215305	215306
Kobra KL3-SS-RR Switch	230V ac	215007	215008	215009	215407	215408	215409	215307	215308	215309

Kobra Actuator	Standard	Add A to Sales Part Number
Kobra Actuator	Flat	Add F to Sales Part Number
Kobra Actuator	Heavy Duty Flexible	Add HF to Sales Part Number
Kobra Actuator	S/Steel Heavy Duty Flexible	Add HFH to Sales Part Number

Manual Release Key
(order separately - not supplied with switches)

Sales Number: 140123

Ordering Example:
24V Solenoid 1/2" NPT Conduit Manual Release Lid Only Flat Actuator: Sales Number: 215402-F

Guard Locking - Rear Manual Escape Release Switches
Types: KLTM-RR & KLT-SS-RR (also with RFID)

FEATURES & APPLICATION:

KLTM-RFID-RR - IP67 Die-Cast (painted red)

Spring to lock when actuator is inserted. Energise solenoid to unlock or press rear release button.

KLT-RFID-SS-RR - IP69K
Stainless Steel 316 Housing with mirror polished finish (Ra10)

Spring to lock when actuator is inserted. Energise solenoid to unlock or press rear release button.

Solenoid Locking Door Interlock Safety Switches featuring Guard Holding up to 3000N (300Kg) (F1Max) and Rear Manual Escape Release

All the features and specifications of the standard KLTM and KLT-SS are maintained with the addition of an extra Rear Manual Escape Release button being provided at the rear of the housing.

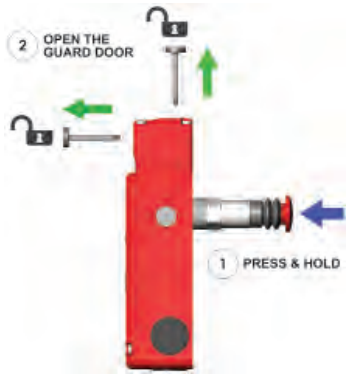
Also available with RFID coding.

APPLICATION:

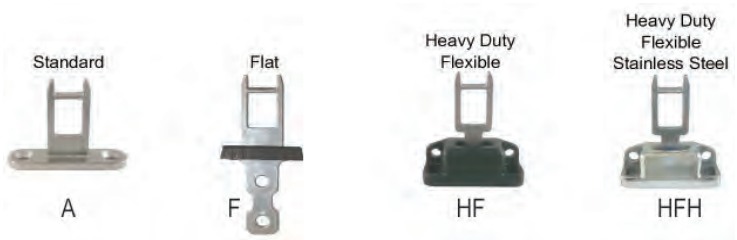
Where the risk assessment for the application permits, a non-latching manual escape release is provided to enable quick release of the switch lock in case of emergency.

The switch can be mounted such that access to the release button is available from inside the active guard area.

Pressing and holding the red button will release the lock mechanism and open the lock monitoring contacts whilst the guard can be pushed open.



ACTUATORS (KLTM-RR & KLT-SS-RR) (see p100)



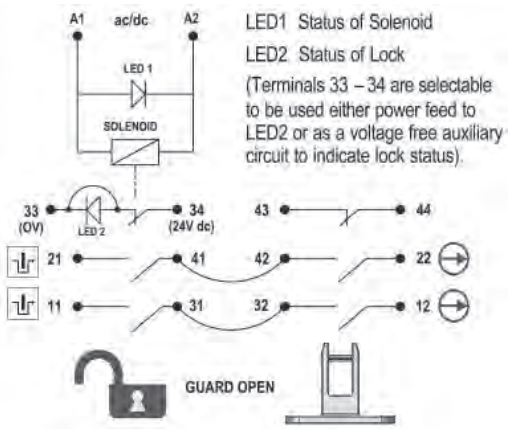
Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

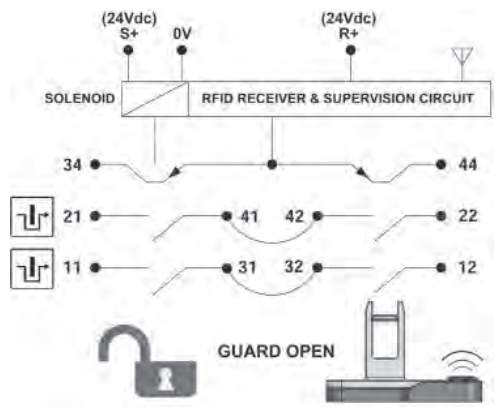
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
KLTM-RR & KLT-SS-RR Solenoid Voltage	24V ac/dc or 110Vac or 230Vac (by Sales No.)
Solenoid Wattage	12W
LED 2 Supply Voltage	24Vac
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Actuator Entry Minimum Radius	175mm Standard 100mm Heavy Duty
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	KLTM-RR Die Cast (painted red) KLT-SS-RR Polished Stainless Steel 316
Head Material	KLTM-RR Die Cast (painted red) KLT-SS-RR Polished Stainless Steel 316
Enclosure Protection	KLTM-RR IP67 KLT-SS-RR IP69K
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

SCHEMATIC CIRCUITS:

KLTM-RR KLT-SS-RR (Mechnical only version):

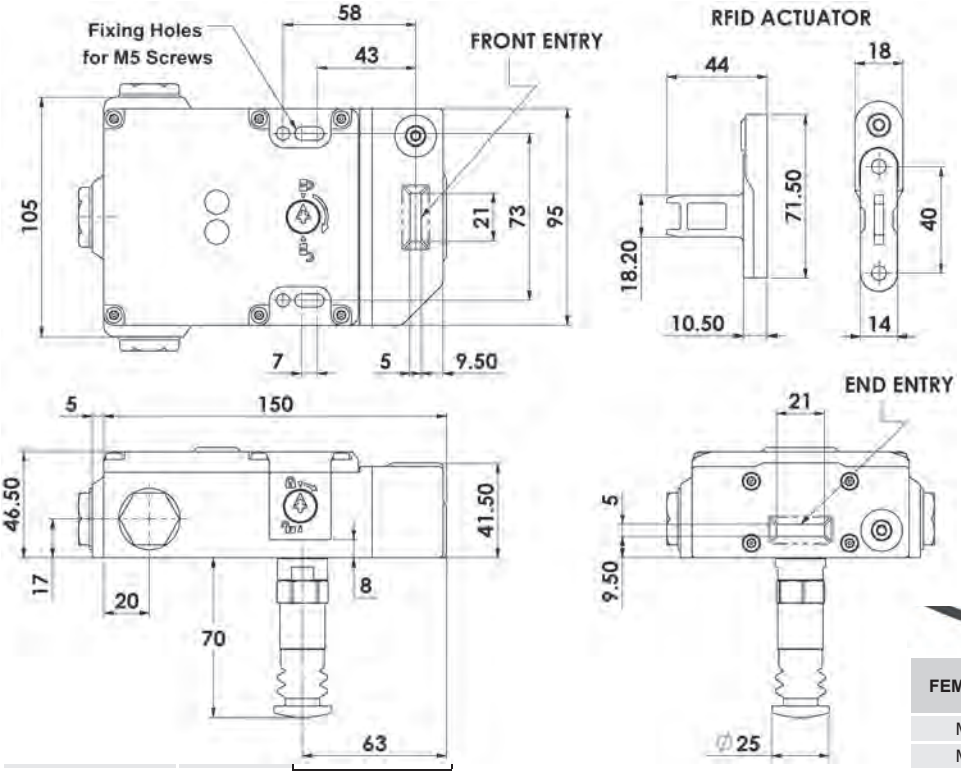


KLTM-RFID-RR KLT-SS-RFID-RR (RFID version):



Guard Locking - Rear Manual Escape Release Switches
Types: KLTM-RR & KLT-SS-RR (also with RFID)

DIMENSIONS:



Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	Switch Circuit
1 3	A1 A2
4 6	11/12
7 8	21/22
2 5	43/44
9	33
10	34
Earth	12

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

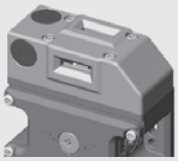
SALES NUMBER		SOLENOID VOLTAGE	M20	1/2" NPT	QC M23
RAMZLOCK KLTM-RR Switch (Mechanical only)		24V ac/dc	452001	452002	452003
RAMZLOCK KLTM-RR Switch (Mechanical only)		110V ac	452004	452005	452006
RAMZLOCK KLTM-RR Switch (Mechanical only)		230V ac	452007	452008	452009
RAMZLOCK KLTM Actuator		Standard	Add A	to Sales Part Number	
RAMZLOCK KLTM Actuator		Flat	Add F	to Sales Part Number	
RAMZLOCK KLTM Actuator		Heavy Duty Flexible	Add HF	to Sales Part Number	
RAMZLOCK KLTM Actuator		S/Steel Heavy Duty Flexible	Add HFH	to Sales Part Number	

Ordering Example: KLTM-RR M20 24V ac/dc Heavy Duty Flexible Actuator: Sales Number: 452001-HF

SALES NUMBER		SUPPLY VOLTAGE/HEAD POSITION	M20	1/2" NPT	QC M23
RAMZLOCK KLTM-RFID-RR Switch Supplied complete with uniquely coded actuator 		24V dc Actuator Entry Positions: Front Entry End Entry (Lower)	452201	452202	452203

SALES NUMBER		SOLENOID VOLTAGE	M20	1/2" NPT	QC M23
KLT-SS-RR Switch (Mechanical only)		24V ac/dc	453001	453002	453003
KLT-SS-RR Switch (Mechanical only)		110V ac	453004	453005	453006
KLT-SS-RR Switch (Mechanical only)		230V ac	453007	453008	453009
KLT-SS Actuator		Standard	Add A	to Sales Part Number	
KLT-SS Actuator		Flat	Add F	to Sales Part Number	
KLT-SS Actuator		Heavy Duty Flexible	Add HF	to Sales Part Number	
KLT-SS Actuator		Stainless Steel Heavy Duty Flexible	Add HFH	to Sales Part Number	

Ordering Example: KLT-SS-RR M20 24V ac/dc Heavy Duty Flexible Actuator: Sales Number: 453001-HF

SALES NUMBER		SUPPLY VOLTAGE/HEAD POSITION	M20	1/2" NPT	QC M23
KLT-SS-RFID-RR Switch Supplied complete with uniquely coded actuator 		24V dc Actuator Entry Positions: Front Entry End Entry (Lower)	453201	453202	453203

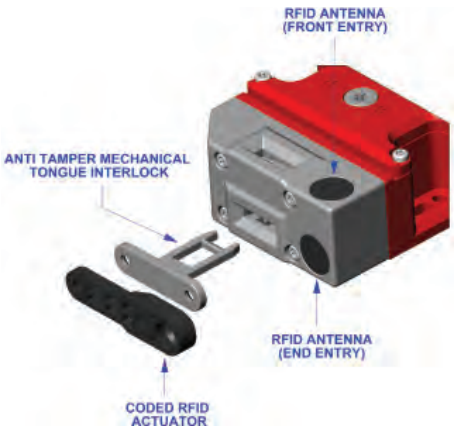
STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

RFID Guard Locking Switch Metal **Type: RAMZLOCK KLTM-RFID**

FEATURES:

Spring to lock when actuator is inserted. Energise solenoid to unlock.



Solenoid Locking Door Interlock Safety Switch with Integral Unique RFID Coding featuring Guard Holding up to 3000N (300Kg) (F1Max)

IDEM's KLTM-RFID Series Guard Locking switches are tongue type safety interlock switch incorporating traditional mechanical anti-tamper tongue technology (featuring IDEM's patened cam system) but also incorporating uniquely coded RFID non contact coded sensor technology in one device.

They interlock and hold closed guard doors to protect operators from moving or hazardous machinery. They are suited to where a high anti-tamper technology is required to prevent accidental or deliberate attempts to by-pass the interlock.

Both technologies must be satisfied to enable the machine to be started.

They have a rugged metal body design and have been developed with a maximum holding force of 3000N to keep medium to large guard doors closed until hazards have been removed.

IP67 enclosure protection is maintained by a double seal lid gasket design and metal fixings.

They have a low profile and fixing holes are on an industry standard 73mm centre to enable easy retrofitting to new or existing guards (or where extra anti-tamper is required).

CONTACTS:

KLTM-RFID (incorporating RFID coding)

4NC Safety Contacts

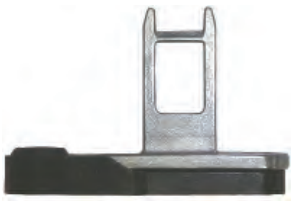
1NO Auxiliary PNP Signal (Guard Open)
1NO Auxiliary PNP Signal (Guard Locked)

LED1 RED Solenoid Power On
LED2 GREEN Switch Locked
LED2 YELLOW Diagnostic Fault

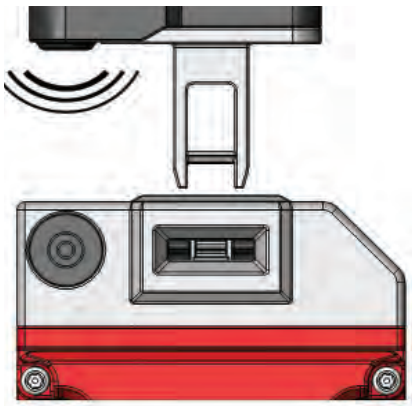
FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Rugged Die Cast Metal Housing with Stainless Steel 316 Head
Will fit on 73mm fixing centres
Connects to most Safety Relays to give up to PLe Cat.4
M23 Quick Connector version available for ease of installation
2 manual override points
LED diagnostics for Solenoid, Lock and faults

ACTUATOR:



For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

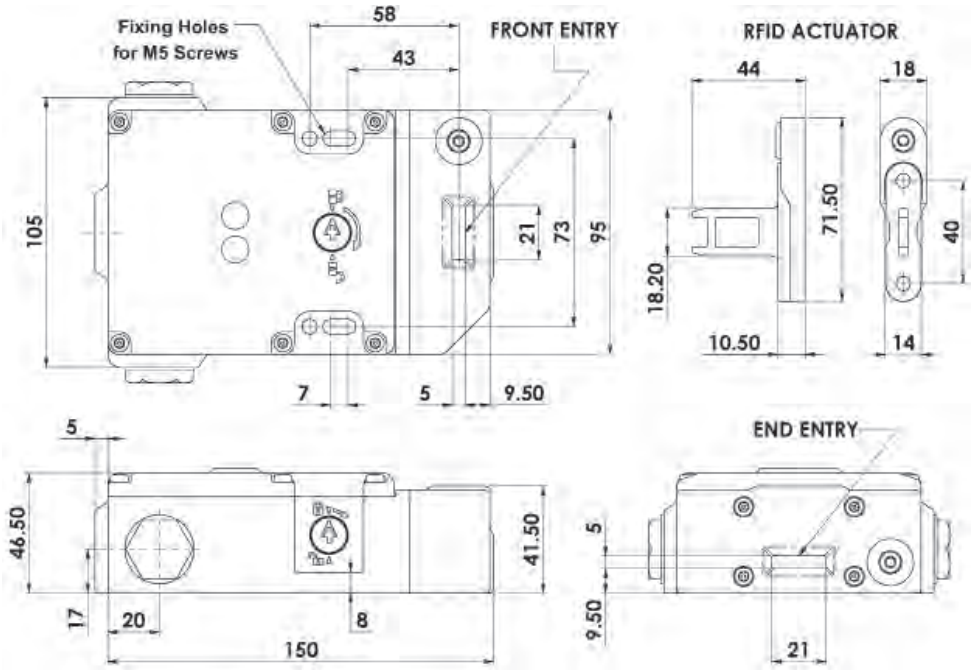


Type: KLTM-RFID
Mechanical and RFID Coding

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
KLTM-RFID Supply/Solenoid Voltage	24Vdc
Solenoid Wattage	12W
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Die Cast Metal (painted red)
Head Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M5

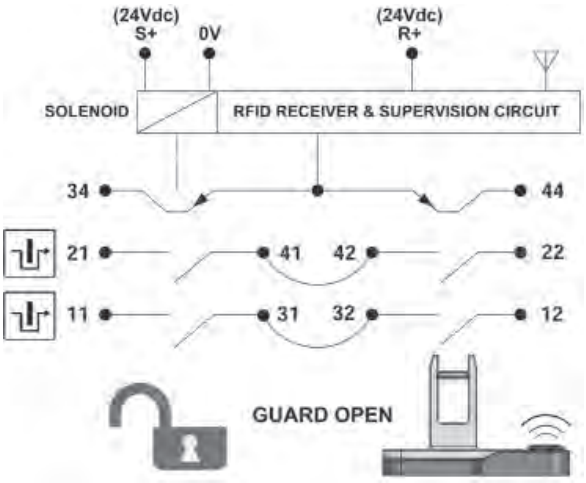
RFID Guard Locking Switch Metal **Type: RAMZLOCK KLTM-RFID**

DIMENSIONS:



SCHEMATIC CIRCUIT:

KLTM-RFID Version (incorporating RFID Coding)



Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	KLTM-RFID Switch Circuit
1	0V
2	R+ 24V dc
3	S+ 24V dc
4 6	11/12
7 8	21/22
5	44
9	34
12	Earth

FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

SALES NUMBER		SUPPLY VOLTAGE/HEAD POSITION	M20	1/2" NPT	QC M23
RAMZLOCK KLTM-RFID Switch Supplied complete with uniquely coded actuator		24V dc Actuator Entry Positions: Front Entry End Entry (Lower)	450201	450202	450203
		24V dc Actuator Entry Positions: Rear Entry Front Entry (Upper)	450301	450302	450303

RFID Guard Locking Switch Stainless Steel **Type: KLT-SS-RFID**

FEATURES:

Spring to lock when actuator is inserted. Energise solenoid to unlock.

Solenoid Locking Door Interlock Safety Switch with Integral Unique RFID Coding featuring Guard Holding up to 3000N (300Kg) (F1Max)

IDEM's KLT-SS-RFID Series Guard Locking switches are tongue type safety interlock switches incorporating traditional mechanical anti-tamper tongue technology (featuring IDEM's patented cam system) but also incorporating uniquely coded RFID non contact coded sensor technology in one device.

They interlock and hold closed guard doors to protect operators from moving or hazardous machinery. They are suited to where a high anti-tamper technology is required to prevent accidental or deliberate attempts to by-pass the interlock.

Both technologies must be satisfied to enable the machine to be started.

They have a mirror polished Stainless Steel 316 body design and have been developed with a maximum holding force of 3000N to keep medium to large guard doors closed until hazards have been removed.

IP69K enclosure protection is maintained by a double seal lid gasket design and metal fixings.

They have a low profile and fixing holes are on an industry standard 73mm centre to enable easy retrofitting to new or existing guards (or where extra anti-tamper is required).

Type: KLT-SS-RFID
Mechanical and RFID Coding

CONTACTS:

KLT-SS-RFID (incorporating RFID coding)

4NC Safety Contacts

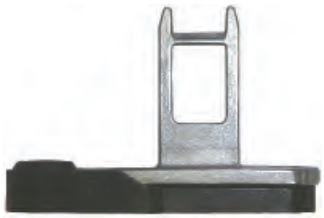
1NO Auxiliary PNP Signal (Guard Open)
1NO Auxiliary PNP Signal (Guard Locked)

LED1 RED Solenoid Power On
LED2 GREEN Switch Locked
LED2 YELLOW Diagnostic Fault

FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1
High Functional Safety to ISO13849-1
Mirror Polished (Ra10) Stainless Steel 316
Will fit on 73mm fixing centres
Connects to most Safety Relays to give up to PLe Cat.4
M23 Quick Connector version available for ease of installation
1 manual override points
LED diagnostics for Solenoid, Lock and faults

ACTUATOR

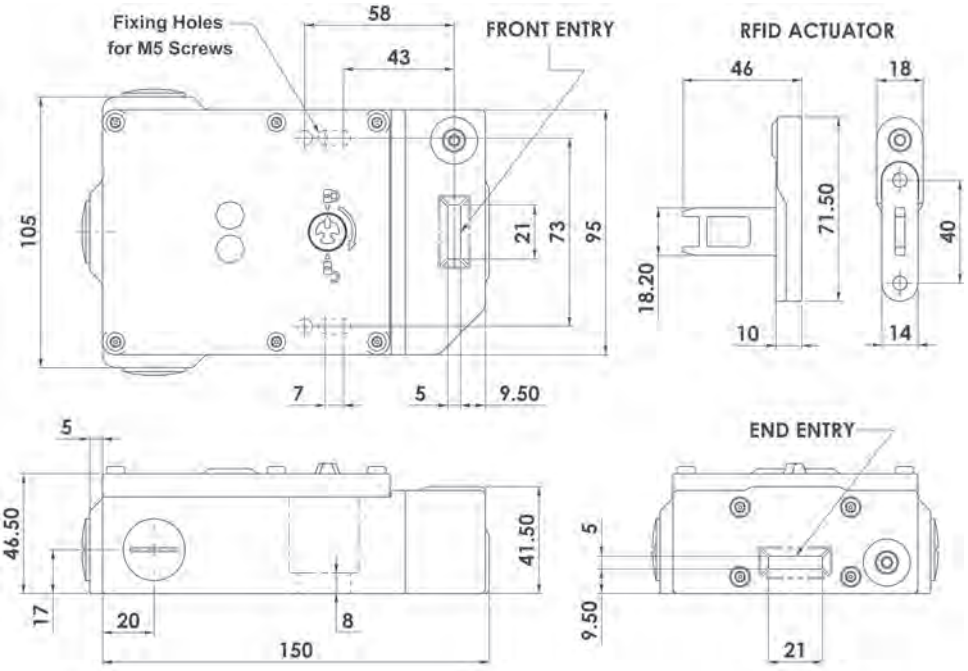


For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
KLT-SS-RFID Supply/Solenoid Voltage	24V dc
Solenoid Wattage	12W
Thermal Current (Ith)	5A
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Polished Stainless Steel 316
Head Material	Polished Stainless Steel 316
Enclosure Protection	IP69K
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	2 x M5

RFID Guard Locking Switch Stainless Steel **Type: KLT-SS-RFID**

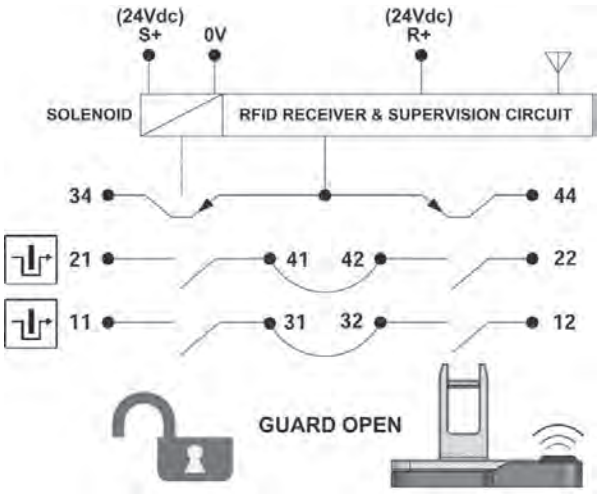
DIMENSIONS:



Quick Connect (QC) M23 12 Way Male Plug Connector Length 24mm Pin View from Switch	KLT-SS-RFID Switch Circuit
1	0V
2	R+ 24V dc
3	S+ 24V dc
4 6	11/12
7 8	21/22
5	44
9	34
12	Earth

SCHEMATIC CIRCUIT:

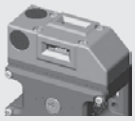
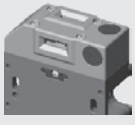
KLT-SS-RFID Version (incorporating RFID Coding)



FEMALE QC LEADS	LENGTH	SALES NUMBER
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

SALES NUMBER		SUPPLY VOLTAGE/HEAD POSITION	M20	1/2" NPT	QC M23
KLT-SS-RFID Switch Supplied complete with uniquely coded actuator 		24V dc Actuator Entry Positions: Front Entry End Entry (Lower)	451201	451202	451203
Manual Release Key (order separately - not supplied with switches)  Sales Number: 140123		24V dc Actuator Entry Positions: Rear Entry Front Entry (Upper)	451301	451302	451303

RFID Guard Locking Switch Plastic **Type: ARTALOCK KLP-Z**

FEATURES:

Solenoid Locking Interlock Safety Switch featuring RFID Interlocking

The KLP-Z Series Guard Locking switches have been designed to incorporate high anti-tamper RFID coding and provide PLe safety levels to ISO13849-1.

The RFID sensing is complemented by a traditional cam locking system which has been developed with a holding Force of 2000N to keep guard doors closed until hazards have been removed.

Unique rotating head to offer both Front and End actuation.

32 million RFID codes – each switch unique – high coding to ISO14119.

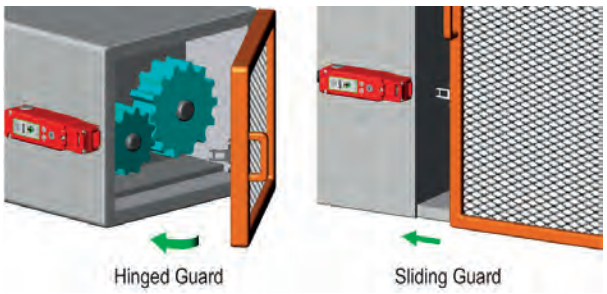
Rugged IP67 enclosure protection is maintained by a double seal lid gasket design and metal fixings.

They have a slim profile and are designed to fit on 50mm (2in) frame sections or to applications where space is restricted and the head will rotate to provide up to 8 actuator entry positions and includes front and end entry sensing.

High specification plastic housing with robust Stainless Steel 316 head.

Choice of standard or flexible actuators.

M12 Quick connect version available.



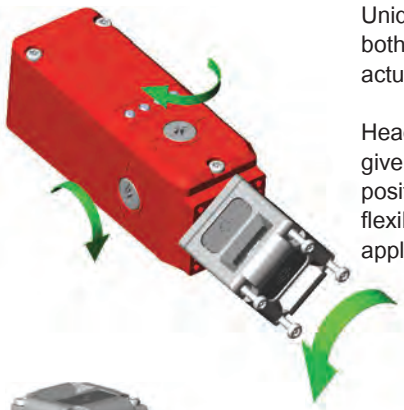
FUNCTIONAL SPECIFICATIONS:

Solid State OSSD Safety Outputs short circuit protected.

High Functional Safety to ISO13849-1, maintains Ple Interlocking via self-test technique when switches are connected in series to a safety controller or relay.

2 Safety Circuits - closed when switch is locked and machine able to run.
1 Auxiliary circuit for indication of Guard status (Guard open).
1 Auxiliary circuit for indication of Lock Status (Guard locked).

4 diagnostic LED's to display guard position, lock, input/output signals and fault status.



Unique design offering both Front or End entry actuation.

Head will rotate to give 8 actuator entry positions for full flexibility depending on application.

Front entry actuation direction.

End entry actuation direction.

ACTUATOR OPTIONS:

AZ Standard Actuator

HFZ Flexible Actuator

Standards:	IEC60947-5-3 ISO14119 ISO13849-1 IEC62061 UL508

Safety Classification and Reliability Data:

Supply Voltage	24Vdc (+/- 10%)
Power Consumption	R+ (50mA Max.) S+ (500mA Max) (Solenoid)
Safety Circuits (11-12, 21-22)	24V 0.2A
Auxiliary Circuits (34 and 44)	24Vdc 0.2A Max. output current
Rated Insulation Voltage	500VAC
Holding Force (ISO14119)	F1 Max 2000N Fzh 1538N
Actuator insertion distance for assured locking	5mm
Sao Sar (RFID sensing)	Sao 10mm Sar 20mm
Operating Frequency	1Hz
Actuator entry minimum radius	175mm Standard 100mm Flexible
Body Material	Polyester
Head Material	Stainless Steel 316
Actuator Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C to +40C
Mechanical Life Expectancy	2.5 x 10^6 cycles
Vibration	IEC88-2-6, 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min

Characteristic data according to IEC62061 (used as a subsystem)

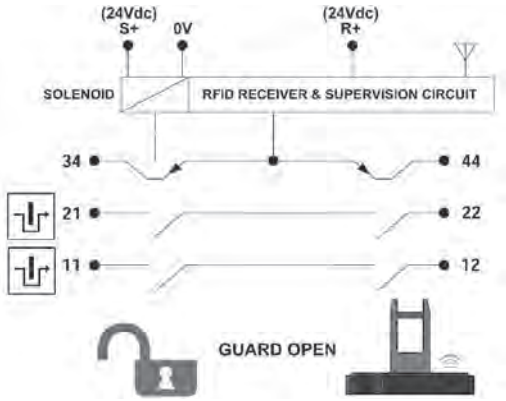
Safety Integrity Level	SIL 3	
PFH (1/h)	4.80 E-10	Corresponds to 4.8% of SIL3
Proof Test Interval T_1	20a	

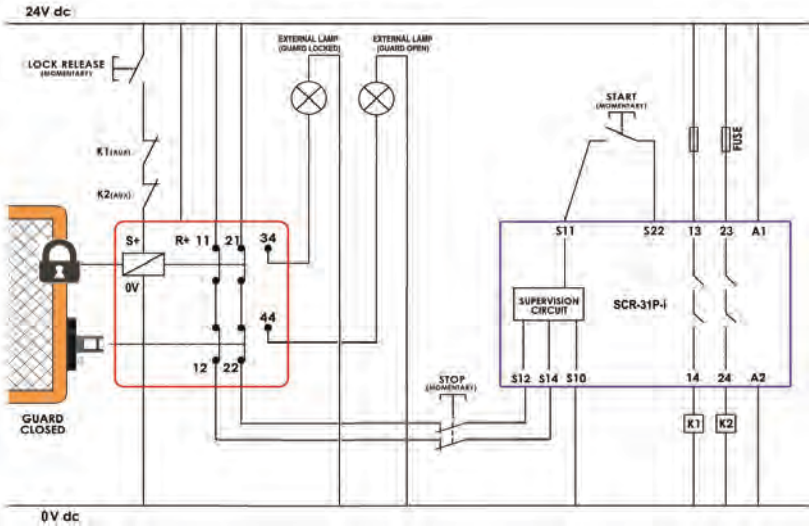
Characteristic data according to EN ISO13849-1

Performance Level	e	If both channels are used in conjunction with a SIL 3/PLe control device.
Category	Cat 4	
$MTTF_d$	1100a	
Diagnostic Coverage DC	99% (high)	

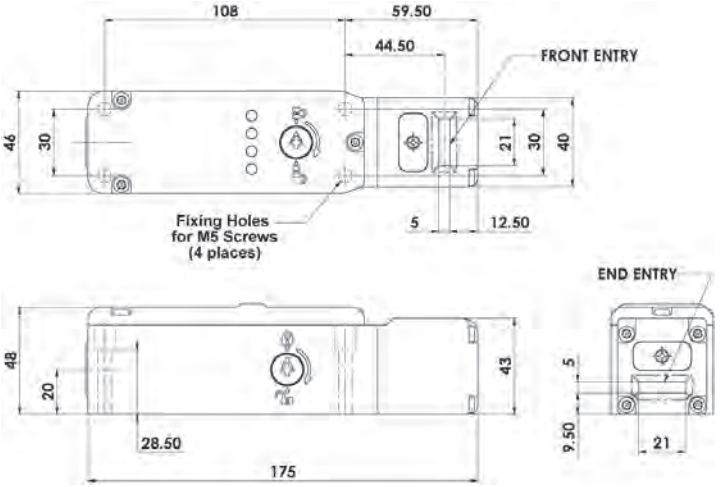
RFID Guard Locking Switch Plastic **Type: ARTALOCK KLP-Z**

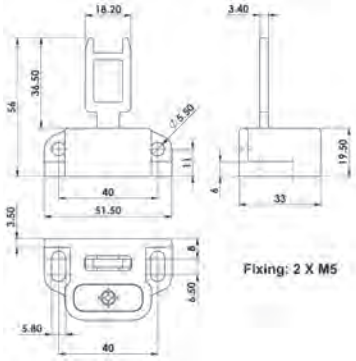
SCHEMATIC & CONNECTION EXAMPLE:



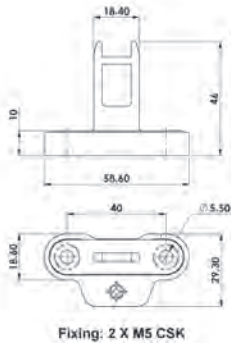


DIMENSIONS:

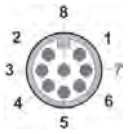




Heavy Duty Flexible Actuator (HFZ)



Standard Actuator (AZ)



FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

LED 1 Guard State	
Guard Locked	Green
Guard Unlocked	Green (Flashing)
Incorrect Code	Red (Flashing)
Guard Open	Red

Quick Connect (QC) M12 8 Way Male Plug Pin View from Switch	Terminal	Function	Switch Circuit	Rating
2	R+	24V dc	Supply 24V dc	50mA max.
3	0V	0V dc	Supply 24V dc (Ground)	
7	11	Safety Input 1	Safety Circuit 1	200mA max.
1	12	Safety Output 1		
4	21	Safety Input 2	Safety Circuit 2	200mA max.
6	22	Safety Output 2		
8	44	Auxiliary (Guard Open)	Guard open signal +24V dc out	200mA max.
N/A	34	Auxiliary (Guard Locked)	Guard locked signal +24V dc out	200mA max.
5	S+	Unlocked	Unlock signal apply +24V dc	500mA max.

LED 2 Input	
Safety Inputs On	Green
Safety Inputs Off	Off

LED 3 Output	
Safety Outputs On	Green
Safety Outputs Off	Off

LED 4 Solenoid	
Solenoid Energised	Red
Solenoid De-energised	Off

	STANDARD MANUAL RELEASE LID AND SIDE			MANUAL RELEASE LID ONLY (Not SIDE)			NO MANUAL RELEASE FITTED (Blanked)		
									
DESCRIPTION	M20	1/2" NPT	QC M12	M20	1/2" NPT	QC M12	M20	1/2" NPT	QC M12
KLP-Z Switch with STANDARD Actuator	455001AZ	455002AZ	455003AZ	455401AZ	455402AZ	455403AZ	455301AZ	455302AZ	455303AZ
KLP-Z Switch with HEAVY DUTY FLEXIBLE Actuator	455001HFZ	455002HFZ	455003HFZ	455401HFZ	455402HFZ	455403HFZ	455301HFZ	455302HFZ	455303HFZ

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

RFID Guard Locking Switch Metal **Type: AYLOCK KLM-Z**

FEATURES:

Solenoid Locking Interlock Safety Switch featuring RFID Interlocking

The KLM-Z Series Guard Locking switches have been designed to incorporate high anti-tamper RFID coding and provide PLe safety levels to ISO13849-1.

The RFID sensing is complemented by a traditional cam locking system which has been developed with a holding Force of 3000N to keep guard doors closed until hazards have been removed.

Unique rotating head to offer both Front and End actuation.

32 million RFID codes – each switch unique – high coding to ISO14119.

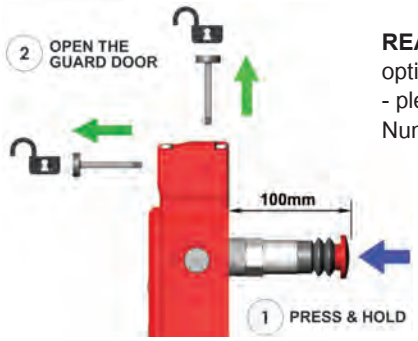
The die cast metal IP67 enclosure protection is maintained by a double seal lid gasket design.

They have a slim profile and are designed to fit on 50mm (2in) frame sections or to applications where space is restricted and the head will rotate to provide up to 8 actuator entry positions and includes front and end entry sensing.

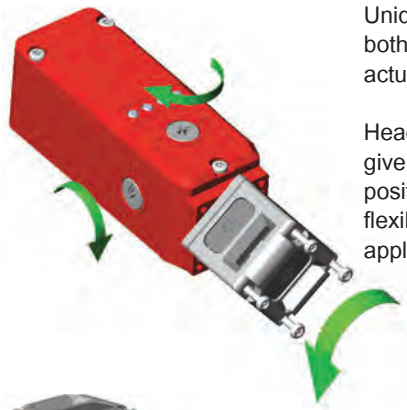
Die cast housing fitted with a robust Stainless Steel 316 head.

Choice of standard or flexible actuators.

M12 Quick connect version available.



REAR RELEASE option also available - please see Sales Numbers.



Unique design offering both Front or End entry actuation.

Head will rotate to give 8 actuator entry positions for full flexibility depending on application.

Front entry actuation direction.

End entry actuation direction.

FUNCTIONAL SPECIFICATIONS:

Solid State OSSD Safety Outputs short circuit protected.

High Functional Safety to ISO13849-1, maintains Ple Interlocking via self-test technique when switches are connected in series to a safety controller or relay.

2 Safety Circuits - closed when switch is locked and machine able to run.
1 Auxiliary circuit for indication of Guard status (Guard open).
1 Auxiliary circuit for indication of Lock Status (Guard locked).

4 diagnostic LED's to display guard position, lock, input/output signals and fault status.

ACTUATOR OPTIONS:

AZ Standard Actuator

HFZ Flexible Actuator

Standards:	IEC60947-5-3 ISO14119 ISO13849-1 IEC62061 UL508
Safety Classification and Reliability Data:	
Supply Voltage	24Vdc (+/- 10%)
Power Consumption	R+ (50mA Max.) S+ (500mA Max) (Solenoid)
Safety Circuits (11-12, 21-22)	24V 0.2A
Auxiliary Circuits (34 and 44)	24Vdc 0.2A Max. output current
Rated Insulation Voltage	500VAC
Holding Force (ISO14119)	F1 Max 3000N Fzh 2307N
Actuator insertion distance for assured locking	5mm
Sao Sar (RFID sensing)	Sao 10mm Sar 20mm
Operating Frequency	1Hz
Actuator entry minimum radius	175mm Standard 100mm Flexible
Body Material	Die cast metal (painted red)
Head Material	Stainless Steel 316
Actuator Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C to +40C
Mechanical Life Expectancy	2.5 x 10^6 cycles
Vibration	IEC88-2-6, 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min

Characteristic data according to IEC62061 (used as a subsystem)

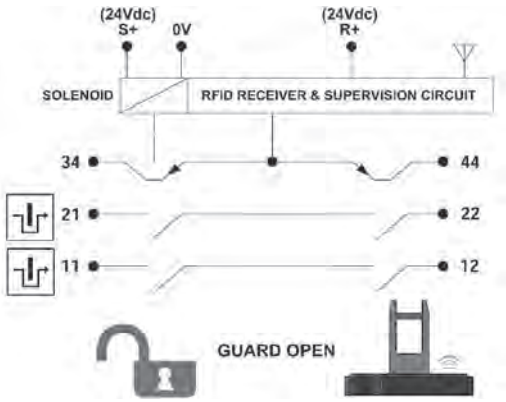
Safety Integrity Level	SIL 3	
PFH (1/h)	4.80 E-10	Corresponds to 4.8% of SIL3
Proof Test Interval T_1	20a	

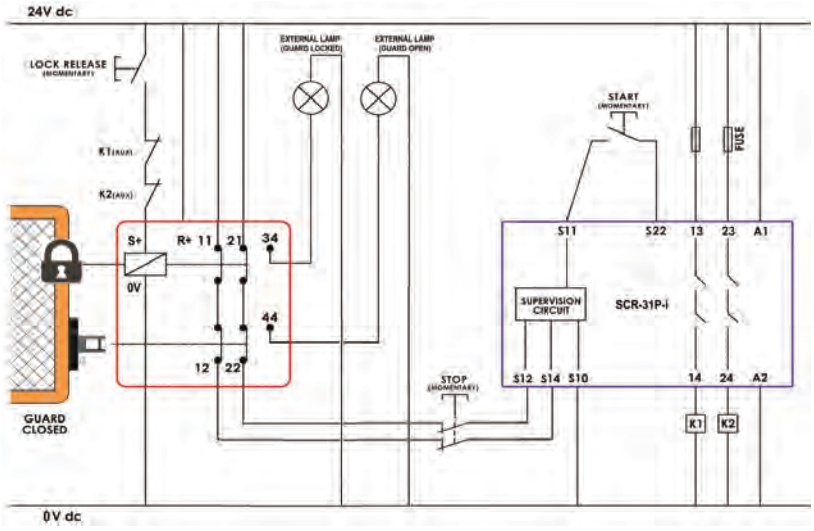
Charateristic data according to EN ISO13849-1

Performance Level	e	If both channels are used in conjunction with a SIL 3/PLe control device.
Category	Cat 4	
$MTTF_d$	1100a	
Diagnostic Coverage DC	99% (high)	

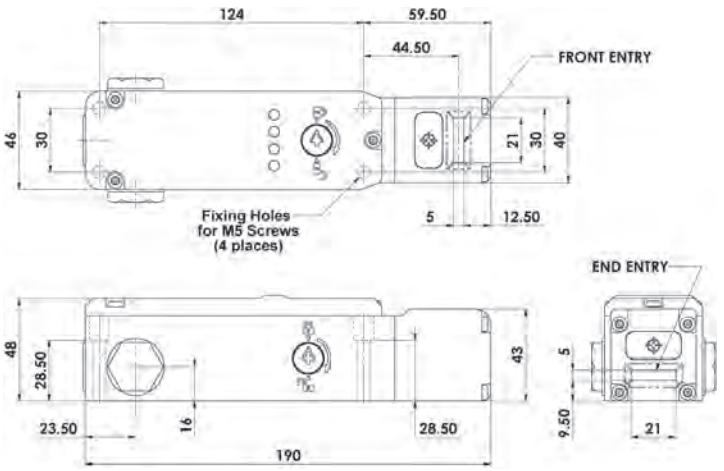
RFID Guard Locking Switch Metal **Type: AYLOCK KLM-Z**

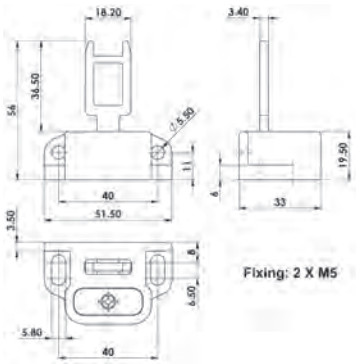
SCHEMATIC & CONNECTION EXAMPLE:



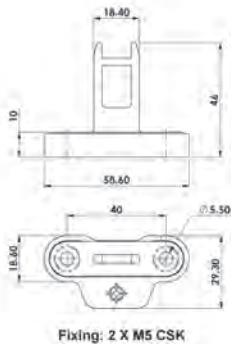


DIMENSIONS:





Heavy Duty Flexible Actuator (HFZ)



Standard Actuator (AZ)

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

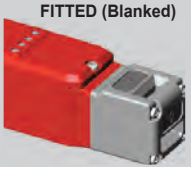
Quick Connect (QC) M12 8 Way Male Plug Pin View from Switch	Terminal	Function	Switch Circuit	Rating
2	R+	24V dc	Supply 24V dc	50mA max.
3	0V	0V dc	Supply 24V dc (Ground)	
7	11	Safety Input 1	Safety Circuit 1	200mA max.
1	12	Safety Output 1		
4	21	Safety Input 2	Safety Circuit 2	200mA max.
6	22	Safety Output 2		
8	44	Auxiliary (Guard Open)	Guard open signal +24V dc out	200mA max.
N/A	34	Auxiliary (Guard Locked)	Guard locked signal +24V dc out	200mA max.
5	S+	Unlocked	Unlock signal apply +24V dc	500mA max.

LED 1 Guard State	
Guard Locked	Green
Guard Unlocked	Green (Flashing)
Incorrect Code	Red (Flashing)
Guard Open	Red

LED 2 Input	
Safety Inputs On	Green
Safety Inputs Off	Off

LED 3 Output	
Safety Outputs On	Green
Safety Outputs Off	Off

LED 4 Solenoid	
Solenoid Energised	Red
Solenoid De-energised	Off

	STANDARD MANUAL RELEASE LID AND SIDE			MANUAL RELEASE LID ONLY (Not SIDE)			NO MANUAL RELEASE FITTED (Blanked)		
									
SALES NUMBERS	**M20**	**1/2" NPT**	**QC M12**	**M20**	**1/2" NPT**	**QC M12**	**M20**	**1/2" NPT**	**QC M12**
KLM-Z Switch with STANDARD Actuator	454001AZ	454002AZ	454003AZ	454401AZ	454402AZ	454403AZ	454301AZ	454302AZ	454303AZ
KLM-Z Switch with HEAVY DUTY FLEXIBLE Actuator	454001HFZ	454002HFZ	454003HFZ	454401HFZ	454402HFZ	454403HFZ	454301HFZ	454302HFZ	454303HFZ
REAR RELEASE OPTION SALES NUMBERS									
KLM-Z-RR Switch with STANDARD Actuator	454011AZ	454012AZ	454013AZ	454411AZ	454412AZ	454413AZ	454311AZ	454312AZ	454313AZ
KLM-Z-RR Switch with HEAVY DUTY FLEXIBLE Actuator	454011HFZ	454012HFZ	454013HFZ	454411HFZ	454412HFZ	454413HFH	454311HFZ	454312HFZ	454313HFZ

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

RFID Guard Locking Switch Metal **TYPE: AYLOCK KLM-Z-4ST**

FEATURES & APPLICATION:

Spring to lock when actuator is inserted. Energise solenoid to unlock.

RFID anti-tamper coding and non-contact safety interlocking.

Front and end entry actuation.

Rotating head.

Solenoid Locking Switch featuring RFID interlocking and incorporating machine control functions

The KLM-Z-4ST incorporates all the switch features of the KLM-Z but offers extra machine control functions all in one housing incorporating standard 22mm push buttons (see p80 for push button options available).

The KLM-Z-4ST has a slim profile and has been designed specifically to fit on 50mm (2in.) frame sections or to applications where space is restricted The head will rotate to offer end users flexibility by providing up to 8 actuator entry positions and includes front and entry sensing.

The KLM-Z-4ST housing will incorporate standard 22mm push buttons, lamps or switches which can be added to provide machine request or control functions all from one KLM-Z-4ST housing.

Robust Stainless Steel 316 head and Die-Cast metal body.

Choice of standard or flexible actuators.

FUNCTIONAL SPECIFICATIONS:

Solid State OSSD Safety Outputs short circuit protected.

High Functional Safety to ISO13849-1, maintains Ple Interlocking via self-test technique when switches are connected in series to a safety controller or relay.

2 Safety Circuits - closed when switch is locked and machine able to run.
1 Auxiliary circuit for indication of Guard status (Guard open).
1 Auxiliary circuit for indication of Lock Status (Guard locked).

4 diagnostic LED's to display guard position, lock, input/output signals and fault status.

Unique design offering both Front or End entry actuation.

Head will rotate to give 8 actuator entry positions for full flexibility depending on application.

Front entry actuation direction.

End entry actuation direction.

ACTUATOR OPTIONS:

AZ Standard Actuator

HFZ Flexible Actuator

Standards:	IEC60947-5-3 ISO14119 ISO13849-1 IEC62061 UL508
Safety Classification and Reliability Data:	
Supply Voltage	24Vdc (+/- 10%)
Power Consumption	R+ (50mA Max.) S+ (500mA Max) (Solenoid)
Safety Circuits (11-12, 21-22)	24V 0.2A
Auxiliary Circuits (34 and 44)	24Vdc 0.2A Max. output current
Rated Insulation Voltage	500VAC
Holding Force (ISO14119)	F1 Max 3000N Fzh 2307N
Actuator insertion distance for assured locking	5mm
Sao Sar (RFID sensing)	Sao 10mm Sar 20mm
Operating Frequency	1Hz
Actuator entry minimum radius	175mm Standard 100mm Flexible
Body Material	Die cast metal (painted red)
Head Material	Stainless Steel 316
Actuator Material	Stainless Steel 316
Enclosure Protection	IP65
Operating Temperature	-25C to +40C
Mechanical Life Expectancy	2.5 x 10^6 cycles
Vibration	IEC88-2-6, 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min

Characteristic data according to IEC62061 (used as a subsystem)

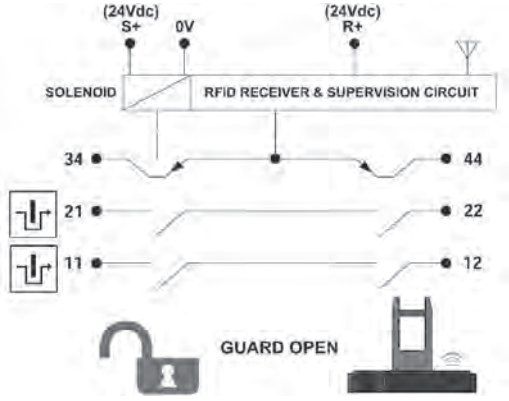
Safety Integrity Level	SIL 3	
PFH (1/h)	4.77 E-10	Corresponds to 4.8% of SIL3
Proof Test Interval T_1	20a	

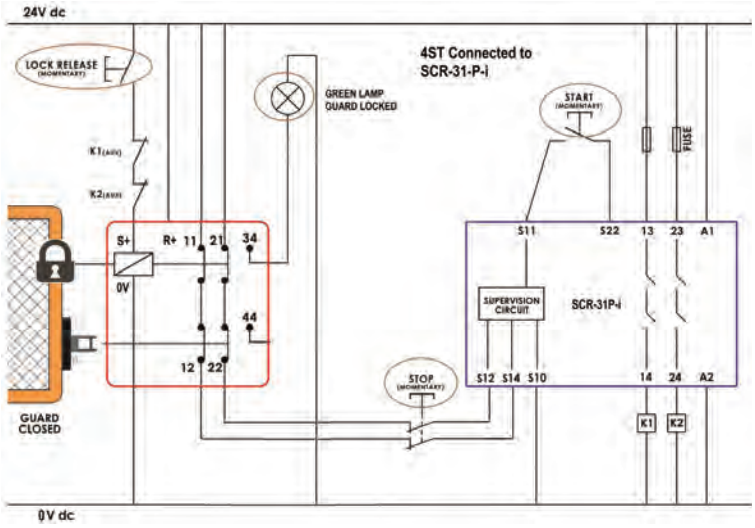
Charateristic data according to EN ISO13849-1

Performance Level	e	If both channels are used in conjunction with a SIL 3/PLe control device.
Category	Cat 4	
$MTTF_d$	1100a	
Diagnostic Coverage DC	99% (high)	

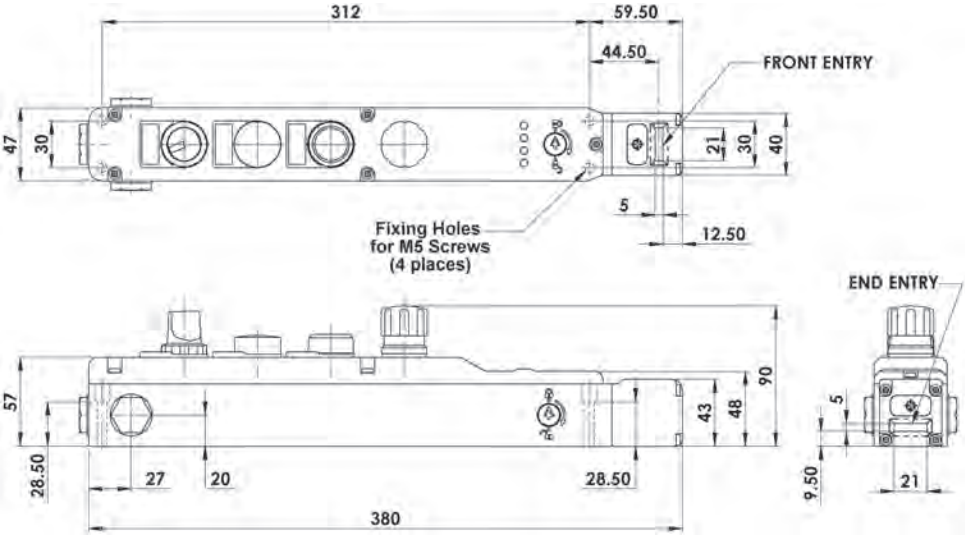
RFID Guard Locking Switch Metal **TYPE: AYLOCK KLM-Z-4ST**

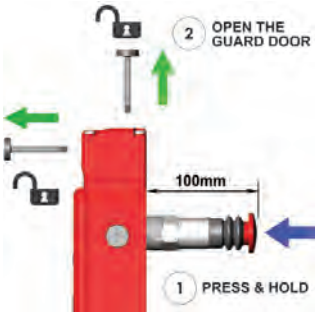
SCHEMATIC & CONNECTION EXAMPLE:





PRODUCT DIMENSIONS:





REAR RELEASE option also available - please see Sales Numbers.

TERMINAL & LED FUNCTIONS:

Terminal	Function	Switch Circuit	Rating
R+	24V dc	Supply 24V dc	50mA max.
0V	0V dc	Supply 24V dc (Ground)	
11	Safety Input 1	Safety Circuit 1	200mA max.
12	Safety Output 1		
21	Safety Input 2	Safety Circuit 2	200mA max.
22	Safety Output 2		
44	Auxiliary (Guard Open)	Guard open signal +24V dc out	200mA max.
34	Auxiliary (Guard Locked)	Guard locked signal +24V dc out	200mA max.
S+	Unlocked	Unlock signal apply +24V dc	500mA max.

LED 1	Guard State
Guard Locked	Green
Guard Unlocked	Green (Flashing)
Incorrect Code	Red (Flashing)
Guard Open	Red

LED 2	Input
Safety Inputs On	Green
Safety Inputs Off	Off

LED 3	Output
Safety Outputs On	Green
Safety Outputs Off	Off

LED 4	Solenoid
Solenoid Energised	Red
Solenoid De-energised	Off

ORDERING LAMPS, PUSH BUTTONS AND SWITCHES SEPARATELY PLEASE REFER TO P80.

SALES NUMBERS	M20	1/2" NPT	M20	1/2" NPT	M20	1/2" NPT
KLM-Z-4ST Switch with STANDARD Actuator	457001AZ	457002AZ	457401AZ	457402AZ	457301AZ	457302AZ
KLM-Z-4ST Switch with HEAVY DUTY FLEXIBLE Actuator	457001HFZ	457002HFZ	457401HFZ	457402HFZ	457301HFZ	457302HFZ
REAR RELEASE OPTION SALES NUMBERS						
KLM-Z-4ST-RR Switch with STANDARD Actuator	457011AZ	457012AZ	457411AZ	457412AZ	457311AZ	457312AZ
KLM-Z-4ST-RR Switch with HEAVY DUTY FLEXIBLE Actuator	457011HFZ	457012HFZ	457411HFZ	457412HFZ	457311HFZ	457312HFZ

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

RFID Guard Locking Switch S/Steel **Type: PARSALOCK KL3-SS-Z**

FEATURES:

Solenoid Locking Interlock Safety Switch featuring RFID Interlocking

The KL3-SS-Z Series Guard Locking switches have been designed to incorporate high anti-tamper RFID coding and provide PLe safety levels to ISO13849-1.

The RFID sensing is complemented by a traditional cam locking system which has been developed with a holding Force of 3000N to keep guard doors closed until hazards have been removed.

Unique rotating head to offer both Front and End actuation.

32 million RFID codes – each switch unique – high coding to ISO14119.

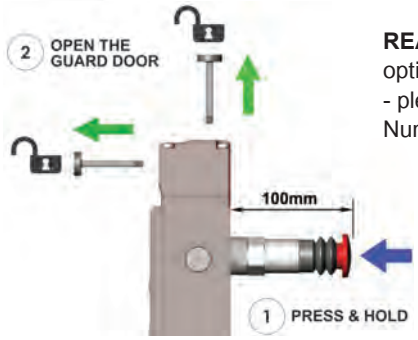
The fully Stainless Steel 316 enclosure has IP69K ingress protection which is maintained by a double seal lid gasket design.

They have a slim profile and are designed to fit on 50mm (2in) frame sections or to applications where space is restricted and the head will rotate to provide up to 8 actuator entry positions and includes front and end entry sensing.

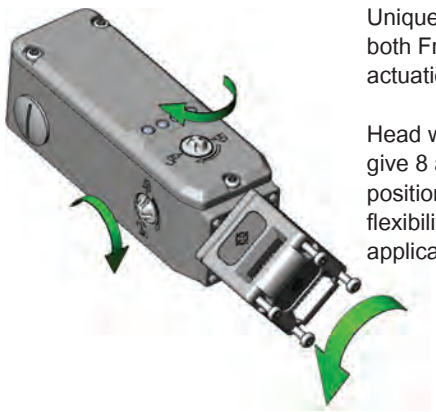
Can be high pressure hosed at high temperature with detergent.

Choice of standard or flexible actuators.

M12 Quick connect version available.



REAR RELEASE option also available - please see Sales Numbers.



Unique design offering both Front or End entry actuation.

Head will rotate to give 8 actuator entry positions for full flexibility depending on application.

Front entry actuation direction.

End entry actuation direction.

FUNCTIONAL SPECIFICATIONS:

Solid State OSSD Safety Outputs short circuit protected.

High Functional Safety to ISO13849-1, maintains Ple Interlocking via self-test technique when switches are connected in series to a safety controller or relay.

2 Safety Circuits - closed when switch is locked and machine able to run.
1 Auxiliary circuit for indication of Guard status (Guard open).
1 Auxiliary circuit for indication of Lock Status (Guard locked).

4 diagnostic LED's to display guard position, lock, input/output signals and fault status.

ACTUATOR OPTIONS:

AZ Standard Actuator

HFZ Flexible Actuator

Standards:	IEC60947-5-3 ISO14119 ISO13849-1 IEC62061 UL508
Safety Classification and Reliability Data:	
Supply Voltage	24Vdc (+/- 10%)
Power Consumption	R+ (50mA Max.)
	S+ (500mA Max) (Solenoid)
Safety Circuits (11-12, 21-22)	24V 0.2A
Auxiliary Circuits (34 and 44)	24Vdc 0.2A Max. output current
Rated Insulation Voltage	500VAC
Holding Force (ISO14119)	F1 Max 3000N Fzh 2307N
Actuator insertion distance for assured locking	5mm
Sao Sar (RFID sensing)	Sao 10mm Sar 20mm
Operating Frequency	1Hz
Actuator entry minimum radius	175mm Standard 100mm Flexible
Body Material	Stainless Steel 316
Head Material	Stainless Steel 316
Actuator Material	Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C to +40C
Mechanical Life Expectancy	2.5 x 10^6 cycles
Vibration	IEC88-2-6, 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min

Characteristic data according to IEC62061 (used as a subsystem)

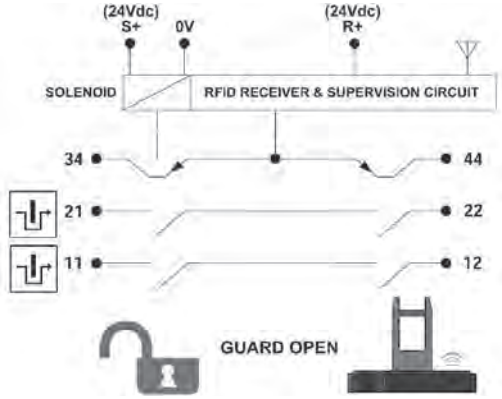
Safety Integrity Level	SIL 3	
PFH (1/h)	4.80 E-10	Corresponds to 4.8% of SIL3
Proof Test Interval T_1	20a	

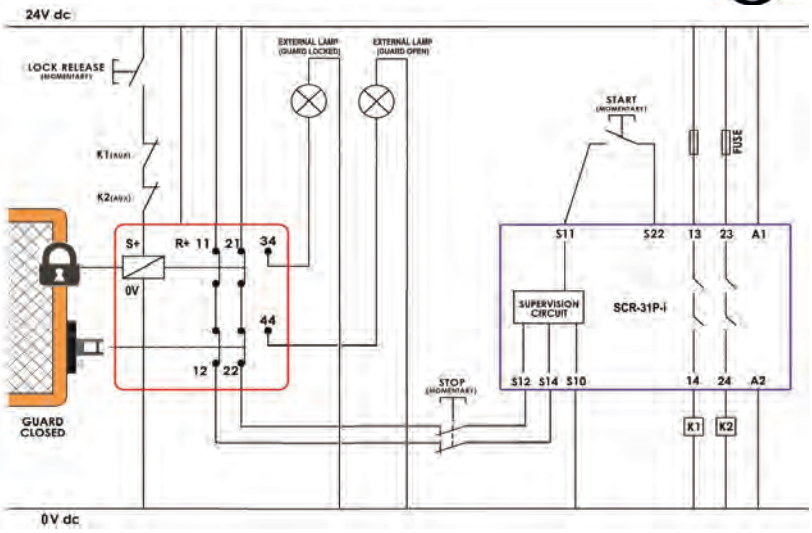
Charateristic data according to EN ISO13849-1

Performance Level	e	If both channels are used in conjunction with a SIL 3/PLe control device.
Category	Cat 4	
$MTTF_d$	1100a	
Diagnostic Coverage DC	99% (high)	

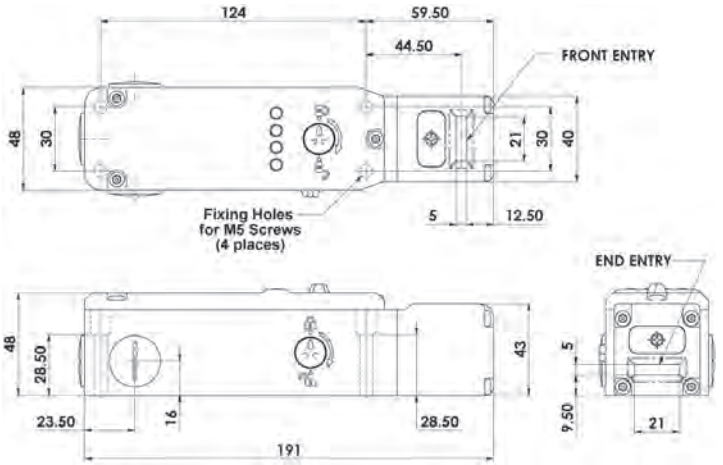
RFID Guard Locking Switch S/Steel **Type: PARSALOCK KL3-SS-Z**

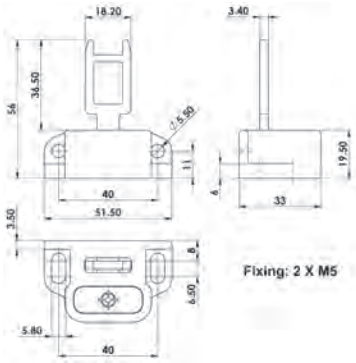
SCHEMATIC & CONNECTION EXAMPLE:



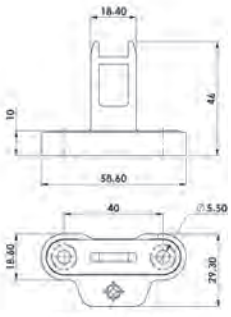


DIMENSIONS:





Heavy Duty Flexible Actuator (HFZ)



Standard Actuator (AZ)

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

Quick Connect (QC) M12 8 Way Male Plug Pin View from Switch	Terminal	Function	Switch Circuit	Rating
2	R+	24V dc	Supply 24V dc	50mA max.
3	0V	0V dc	Supply 24V dc (Ground)	
7	11	Safety Input 1	Safety Circuit 1	200mA max.
1	12	Safety Output 1		
4	21	Safety Input 2	Safety Circuit 2	200mA max.
6	22	Safety Output 2		
8	44	Auxiliary (Guard Open)	Guard open signal +24V dc out	200mA max.
N/A	34	Auxiliary (Guard Locked)	Guard locked signal +24V dc out	200mA max.
5	S+	Unlocked	Unlock signal apply +24V dc	500mA max.

LED 1 Guard State	
Guard Locked	Green
Guard Unlocked	Green (Flashing)
Incorrect Code	Red (Flashing)
Guard Open	Red

LED 2 Input	
Safety Inputs On	Green
Safety Inputs Off	Off

LED 3 Output	
Safety Outputs On	Green
Safety Outputs Off	Off

LED 4 Solenoid	
Solenoid Energised	Red
Solenoid De-energised	Off

Manual Release Key
(order separately - not supplied with switches)

Sales Number: 140123

STANDARD MANUAL RELEASE LID AND SIDE

MANUAL RELEASE LID ONLY (Not SIDE)

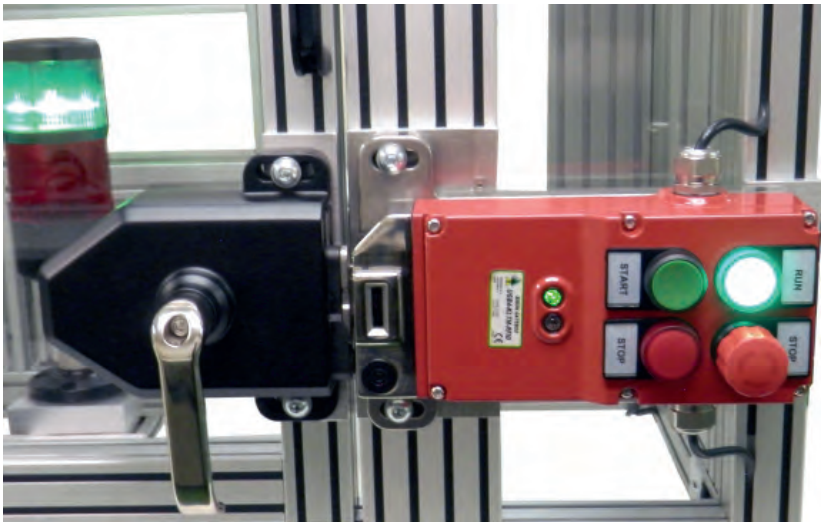
NO MANUAL RELEASE FITTED (Blanked)

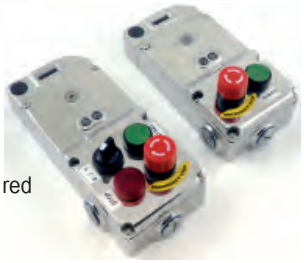
SALES NUMBERS	M20	1/2" NPT	QC M12	M20	1/2" NPT	QC M12	M20	1/2" NPT	QC M12
KL3-SS-Z Switch with Standard Actuator	456001AZ	456002AZ	456003AZ	456401AZ	456402AZ	456403AZ	456301AZ	456302AZ	456303AZ
KL3-SS-Z Switch with Heavy Duty Flexible Actuator	456001HFZ	456002HFZ	456003HFZ	456401HFZ	456402HFZ	456403HFZ	456301HFZ	456302HFZ	456303HFZ
REAR RELEASE OPTION SALES NUMBERS									
KL3-SS-Z-RR Switch with Standard Actuator	456011AZ	456012AZ	456013AZ	456411AZ	456412AZ	456413AZ	456311AZ	456312AZ	456313AZ
KL3-SS-Z-RR Switch with Heavy Duty Flexible Actuator	456011HFZ	456012HFZ	456013HFZ	456411HFZ	456412HFZ	456413HFZ	456311HFZ	456312HFZ	456313HFZ

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Universal Gate Box with Safety Interlocking **TYPE: UGB-KLT**

FEATURES & APPLICATION:





Available as:
Die Cast metal painted red or Stainless Steel 316.
4 Station model or
2 Station model.
Completely flexible - end user chooses buttons, lamps, switches options for each station.

Application:
IDEM Universal Gate Boxes (UGB-KLT) provide high level RFID coded interlocking and machine control functions in one heavy duty housing. They can be easily fitted to access doors to provide guard locking, rear escape options and sliding or rotary handles.

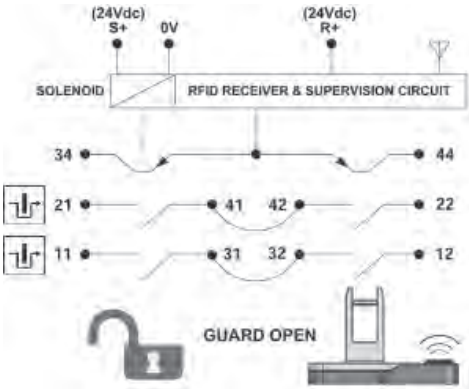
They reduce the risk of operators being trapped inside a guarded area.

The UGB-KLT housings will incorporate standard 22mm push buttons, lamps or switches which can be added to provide machine request or control functions all from one UGB-KLT housing.

Features:

- Robust Safety Interlock switches with RFID and multifunction control features built into one housing.
- 2 or 4 station housing for incorporating wide choice of standard 22mm push buttons, lamps or switches.
- Optional sliding handle actuators or rotary handle actuators.
- Rear escape release options.
- Rotary one way rear escape handle (cannot be re-closed from inside the hazardous area).
- The built-in KLT switch has both anti-tamper RFID coding technology and standard mechanical interlock technology.
- 24Vdc solenoid to release lock.
- Built-in LED diagnostics of switch status and easy to read label legends.
- Easy to mount painted die-cast or Stainless Steel 316 housings.
- Holds guards closed and locked up to 3000N.
- Can be padlocked off for safe working.

KLT INTERNAL CONNECTIONS:



TECHNICAL SPECIFICATIONS:

Standards:	ISO14119 EN60947-5-1 EN60204-1 EN62601 ISO13849-1 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	2.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
PFHd	4.77 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	1100a
KLT-SS-RFID Supply/Solenoid Voltage	24V dc
Solenoid Wattage	9W
Rated Insulation/Withstand Voltages	600Vac/2500Vac
Travel for Positive Opening	10mm
Maximum Approach/Withdrawal Speed	600mm/s
Holding Force	F1Max 3000N Fzh 2307N
Body Material	Die-cast painted red or Stainless Steel 316
Head Material	Polished Stainless Steel 316
Enclosure Protection	IP65
Operating Temperature	-25C +40C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	M20
Fixing	4 x M5

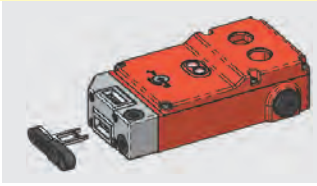
For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Universal Gate Box with Safety Interlocking **TYPE: UGB-KLT**

GATE BOX SWITCHES & ACTUATORS SALES NUMBERS:

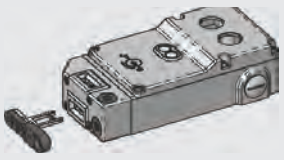
Note: ALL Universal Gate Boxes are supplied complete with RFID coded tongue actuator. These can fitted directly where no rear escape or rotary handles are preferred.

DIE CAST:



TYPE: UGB2-KLTM-RFID	TYPE: UGB2-KLTM-RFID-RR	TYPE: UGB4-KLTM-RFID	TYPE: UGB4-KLTM-RFID-RR
Universal Gate Box (2 Station)	Universal Gate Box (2 Station) with Rear Release	Universal Gate Box (4 Station)	Universal Gate Box (4 Station) with Rear Release
24V Solenoid M20 Conduit	24V Solenoid M20 Conduit	24V Solenoid M20 Conduit	24V Solenoid M20 Conduit
SALES NUMBER (Manual Override)	**SALES NUMBER(Manual Override)**	**SALES NUMBER(Manual Override)**	**SALES NUMBER(Manual Override)**
525001	525002	526001	526002
SALES NUMBER (No Manual Override)	**SALES NUMBER (No Manual Override)**	**SALES NUMBER (No Manual Override)**	**SALES NUMBER (No Manual Override)**
525003	525004	526003	526004

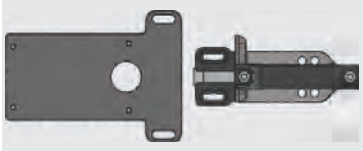
STAINLESS STEEL:

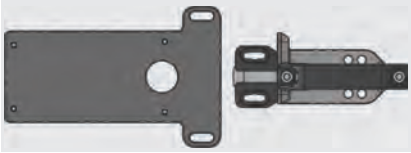


TYPE: UGB2-KLT-SS-RFID	TYPE: UGB2-KLT-SS-RFID-RR	TYPE: UGB4-KLT-SS-RFID	TYPE: UGB4-KLT-SS-RFID-RR
Universal Gate Box (2 Station)	Universal Gate Box (2 Station) with Rear Release	Universal Gate Box (4 Station)	Universal Gate Box (4 Station) with Rear Release
24V Solenoid M20 Conduit	24V Solenoid M20 Conduit	24V Solenoid M20 Conduit	24V Solenoid M20 Conduit
SALES NUMBER (Manual Override)	**SALES NUMBER(Manual Override)**	**SALES NUMBER(Manual Override)**	**SALES NUMBER(Manual Override)**
520001	520002	521001	521002
SALES NUMBER (No Manual Override)	**SALES NUMBER (No Manual Override)**	**SALES NUMBER (No Manual Override)**	**SALES NUMBER (No Manual Override)**
520003	520004	521003	521004

IMPORTANT NOTE: Order 22mm accessories (Switches, Lamps, Push Buttons) separately - please see next page.

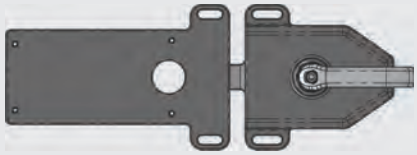
ACCESSORIES FOR ENHANCED FUNCTIONS OF SLIDING FRONT/REAR HANDLES:

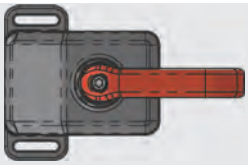




UGB2 Sliding Front Handle and Mounting Plate	UGB4 Sliding Fron Handle and Mounting Plate	Rear Sliding Handle (for use with RR versions and Sliding Front Handles)	Optional Spring Catch to prevent accidental re-closing of Sliding Front Handles
SALES NUMBERS	**SALES NUMBERS**	**SALES NUMBERS**	**SALES NUMBERS**
UBG2-SFH-M (Die-Cast)	**UGB4-SFH-M (Die Cast)**	**REAR HANDLE (Die Cast)**	**SPRING CATCH (Die Cast)**
527001	527002	210005	210006
UGB2-SFH-SS (Stainless Steel)	**UGB4-SFH-SS (Stainless Steel)**	**REAR HANDLE (Stainless Steel)**	**SPRING CATCH (Stainless Steel)**
522001	522002	211005	211006

ACCESSORIES FOR ROTARY FRONT HANDLES & REAR ROTARY ESCAPE HANDLES:





Rotary Front Handle and Mounting Plate	Rotary Front Handle and Mounting Plate	Rear Escape Rotary Handle (Optional)
SALES NUMBERS	**SALES NUMBERS**	**SALES NUMBERS**
UGB2-RFH-M (Die Cast)	**UGB4-RFH-M (Die Cast)**	**UGB-RERH-M (Die Cast)**
527003	527004	527005
UGB2-RFH-SS (Stainless Steel)	**UGB4-RFH-SS (Stainless Steel)**	**UGB-RERH-SS(Stainless Steel**
522003	522004	522005

Universal Gate Box with Safety Interlocking **TYPE: UGB-KLT**

22mm ACCESSORIES FOR UGB-KLT (to be ordered separately):







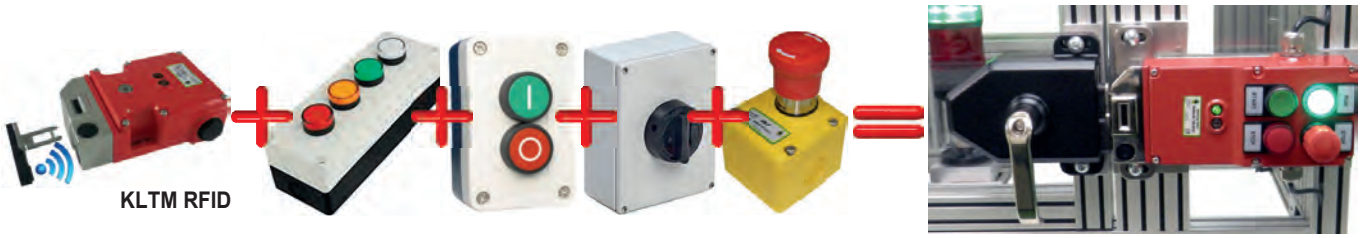


SALES NUMBER	CONTACTS or VOLTAGE	DESCRIPTION	ELECTRICAL
522201	2NC	Compact Stop, Twist to Reset, Red 30mm Mushroom Head	AC-15 120Vac 1.5A 240Vac 1.0A DC-13 24Vdc 0.3A 125Vdc 0.2A
522202	1NC 1NO	Compact Stop, Twist to Reset, Red 30mm Mushroom Head	
522203	2NC	Compact Stop, Twist to Reset, Red 30mm Mushroom Head with Reset Key	
522204	1NC 1NO	Compact Stop, Twist to Reset, Red 30mm Mushroom Head with Reset Key	
522205	2NC	Compact Stop, Twist to Reset, Red 40mm Mushroom Head	
522206	1NC 1NO	Compact Stop, Twist to Reset, Red 40mm Mushroom Head	
522207	2NC	Compact Stop, Twist to Reset, Red 40mm Mushroom Head with Reset key	
522208	1NC 1NO	Compact Stop, Twist to Reset, Red 40mm Mushroom Head with Reset key	
522209	2NC	Compact Illuminated Stop, Twist to Reset, Red 32mm Mushroom Head with plug-in Spade Terminals (2.8 x 0.5mm), RED LAMP (5-30Vdc).	AC-15 120Vac 3A 24Vac 1.5A DC-13 24Vdc 3A 250Vdc 0.27A
522210	1NC 1NO	Compact Illuminated Stop, Twist to Reset, Red 32mm Mushroom Head with plug-in Spade Terminals (2.8 x 0.5mm), RED LAMP (5-30Vdc).	
522251	1NC 1NO	Compact 2 Positions Plastic Selector Switch	AC-15 120Vac 1.5A 240Vac 1.0A DC-13 24Vdc 0.3A 125Vdc 0.2A
522252	2NC	Compact 2 Positions Plastic Selector Switch	
522301	1NC 1NO	Compact Push Button Momentary - RED	
522302	1NC 1NO	Compact Push Button Momentary - GREEN	
522303	1NC 1NO	Compact Push Button Momentary - YELLOW	
522304	1NC 1NO	Compact Push Button Momentary - BLUE	
522305	1NC 1NO	Compact Push Button Momentary - WHITE	
522310	2NC	Compact Push Button Momentary - RED	
522311	2NC	Compact Push Button Momentary - GREEN	
522312	2NC	Compact Push Button Momentary - YELLOW	
522313	2NC	Compact Push Button Momentary - BLUE	
522314	2NC	Compact Push Button Momentary - WHITE	
522321	1NO	Compact Illuminated Push Button Momentary - RED (Lamp 24V ac/dc)	
522322	1NO	Compact Illuminated Push Button Momentary - GREEN (Lamp 24V ac/dc)	
522323	1NO	Compact Illuminated Push Button Momentary - YELLOW (Lamp 24V ac/dc)	
522324	1NO	Compact Illuminated Push Button Momentary - BLUE (Lamp 24V ac/dc)	
522325	1NO	Compact Illuminated Push Button Momentary - CLEAR (Lamp 24V ac/dc)	
522401	24V ac/dc	Pilot Light LED - YELLOW	
522402	24V ac/dc	Pilot Light LED - RED	
522403	24V ac/dc	Pilot Light LED - GREEN	
522404	24V ac/dc	Pilot Light LED - BLUE	
522405	24V ac/dc	Pilot Light LED - CLEAR	
522451		Legend Holder for use with 22 mm Devices	
522452		Blanking Plug for sealing unused 22mm holes	

Universal Gate Box with Safety Interlocking **TYPE: UGB-KLT**

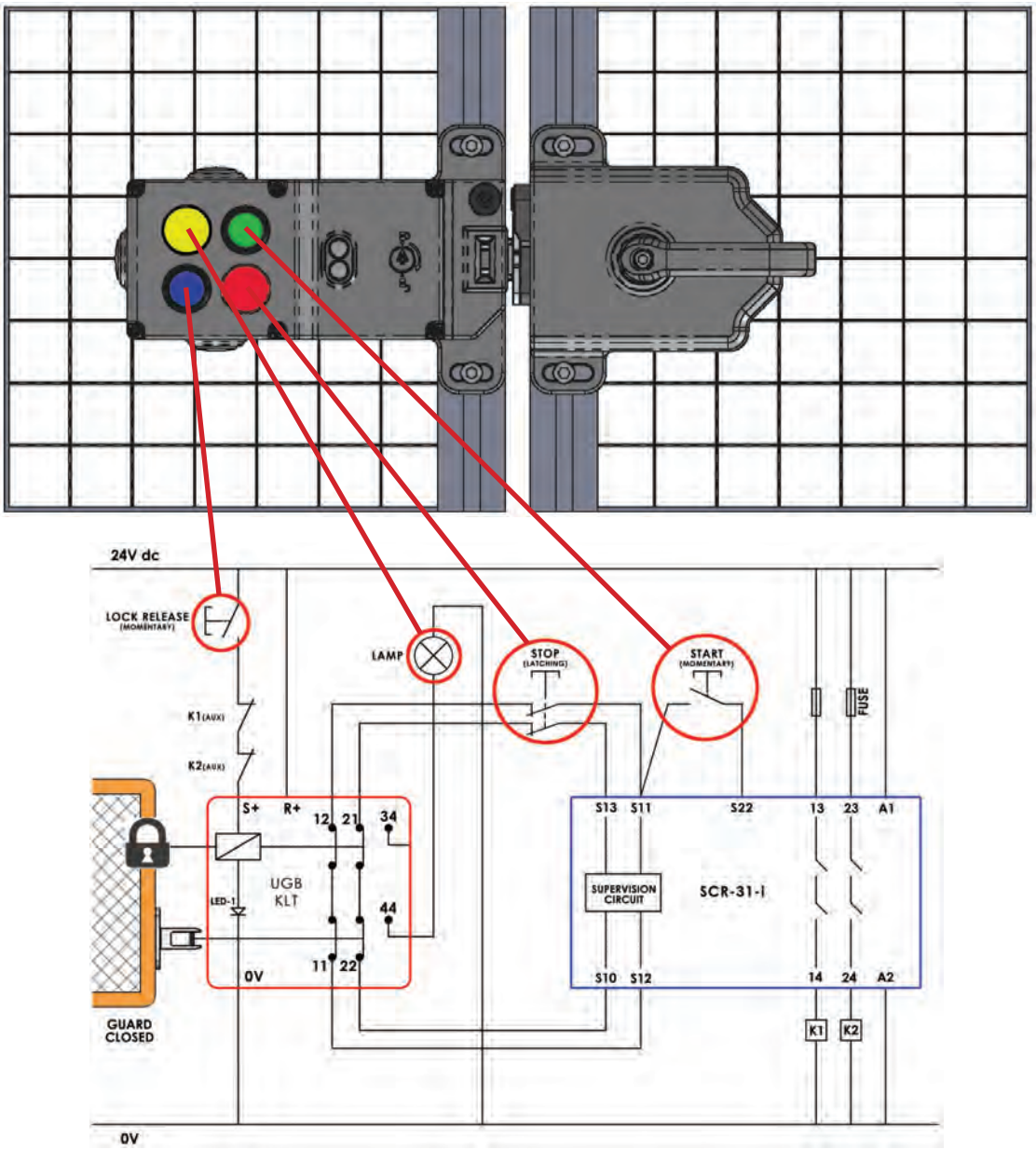
UGB-KLT GATEBOX SOLUTION:

All-in-one control and safety interlocking with RFID coding.



PROBLEM:
A traditional control installation requires several external components and housings for switches, push buttons, lamps, etc. All of these external components require individual mounting brackets and also require several conduit/cable runs.

THE SOLUTION: UGB-KLT GATEBOX
Only 4 mounting bolts, options for sliding or rotary handles, emergency release options and can use only one conduit exit for wiring.
Up to 4 x 22mm pushbuttons, switches or lamps can be fitted integrally.
RFID interlocking with LED diagnostics provides high functional safety interlocking.
Holds guards closed and locked up to 3000N.



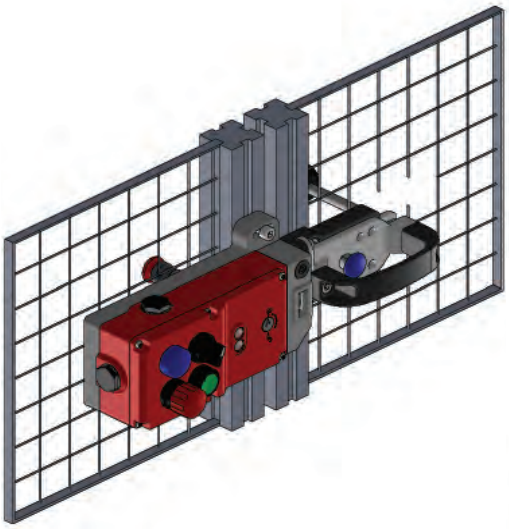
SCHEMATIC EXAMPLE:
UGB-KLT fitted with integral LATCHING STOP, STATUS PILOT LAMP, START and LOCK RELEASE buttons.
Connected to a safety relay to give up to PLe/ Cat 4.

Universal Gate Box with Safety Interlocking **TYPE: UGB4-KLT**

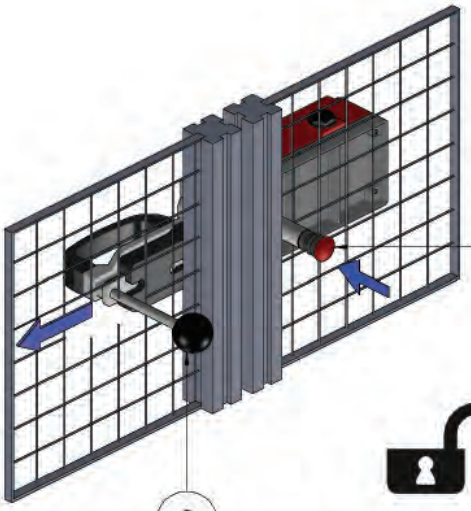
APPLICATION EXAMPLE:

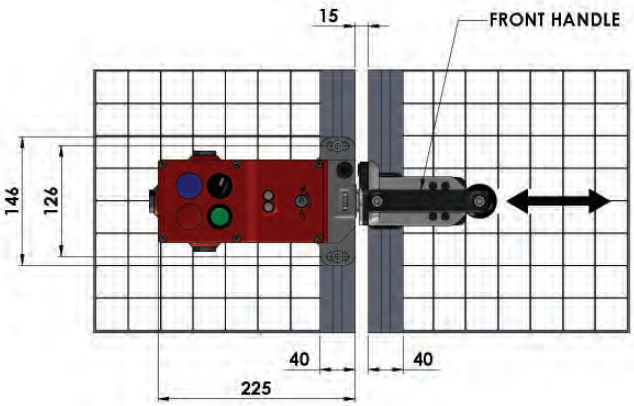
4 STATION (UGB4) with Front Sliding Handle, Rear Escape Button and Rear Escape Sliding Handle.
Fitted with Spring Loaded Catch (optional) – to prevent accidental closing after opening of the guard.

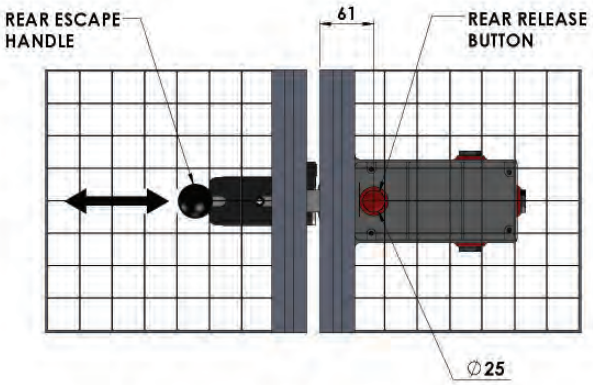
VIEWED FROM OUTSIDE GUARDED AREA

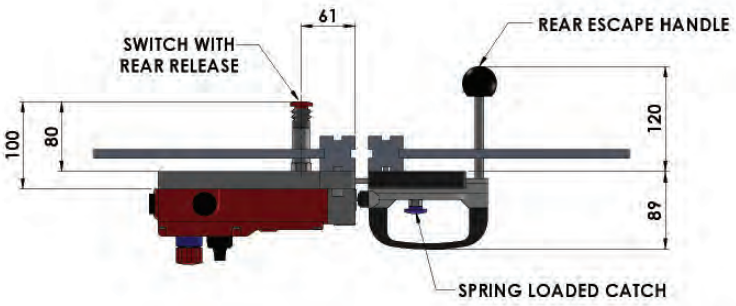


VIEWED FROM INSIDE GUARDED AREA









DESCRIPTION	SALES NUMBER
UGB4-KLTM-RFID-RR	
With LID Manual Override, or	526002
With NO Manual Override	526004
UGB4-SFH-M (Sliding Front Handle)	527002
Rear Release Handle (Stainless Steel)	210005
Spring Loaded Catch (Stainless Steel)	210006

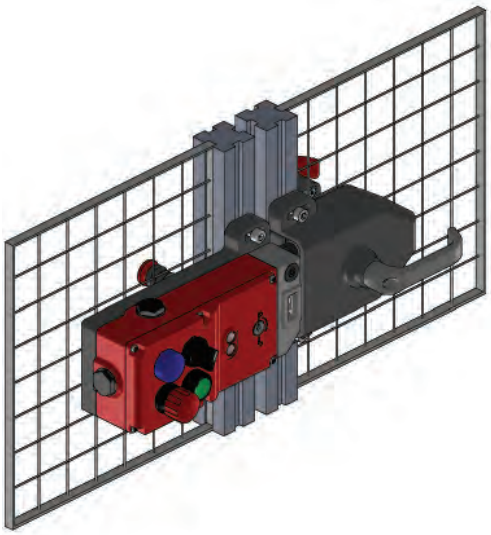
ORDER SEPARATELY:
22mm Push Buttons, Switches, Lamps - See P80.

Universal Gate Box with Safety Interlocking **TYPE: UGB4-KLT**

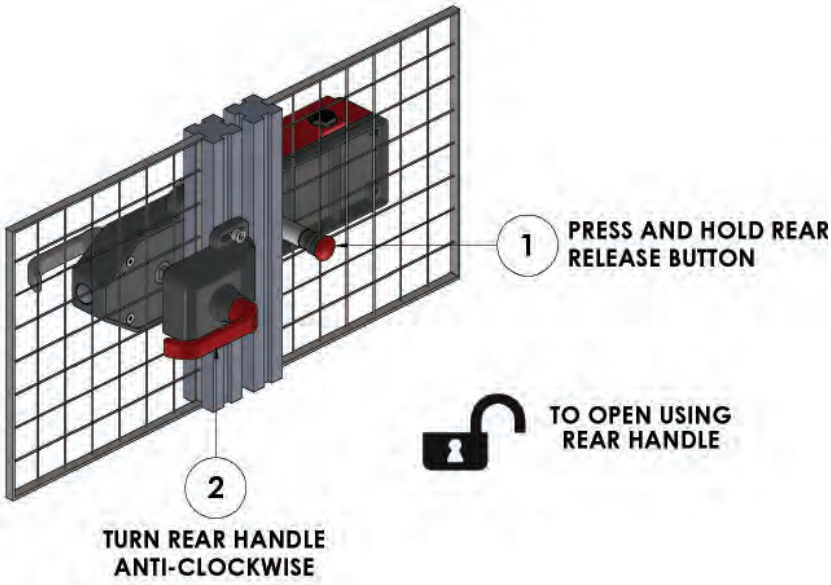
APPLICATION EXAMPLE:

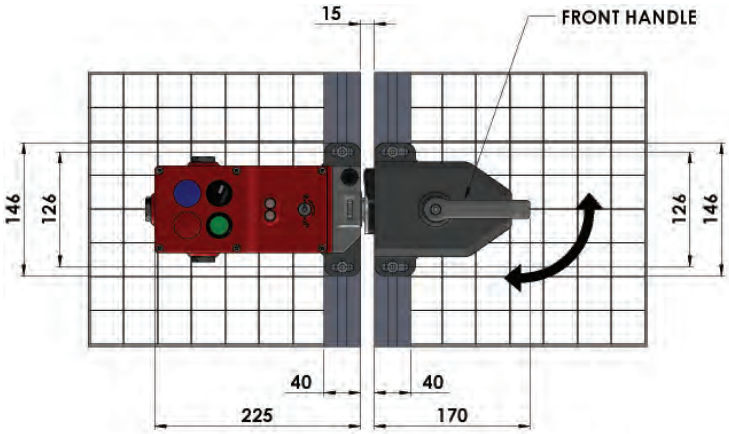
4 STATION (UGB4) with Front Rotary Handle, Rear Escape Button and Rear Escape Rotary Handle.

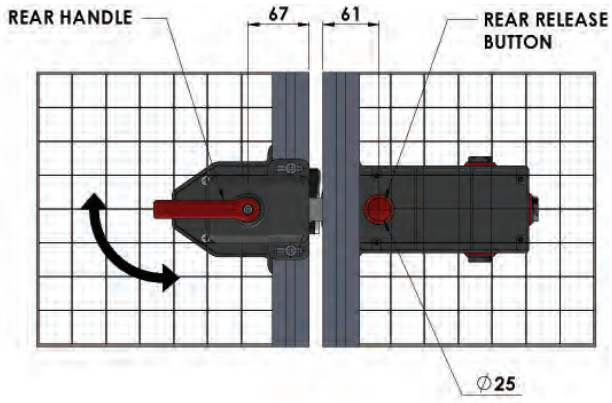
VIEWED FROM OUTSIDE GUARDED AREA

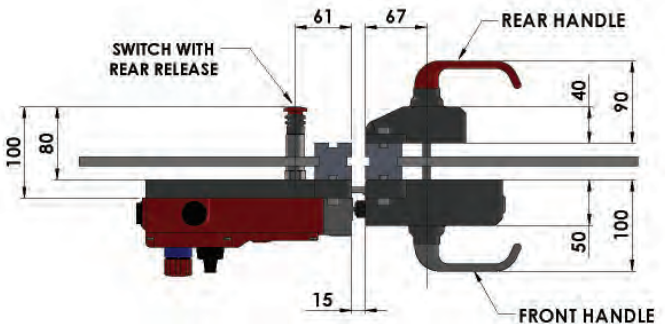


VIEWED FROM INSIDE GUARDED AREA









DESCRIPTION	SALES NUMBER
UGB4-KLTM-RFID-RR	
With LID Manual Override, or	526002
With NO Manual Override	526004
UGB4-RFH-M (Rotary Front Handle)	527004
UGB-RERH-M (Rear Escape Rotary Handle)	527005

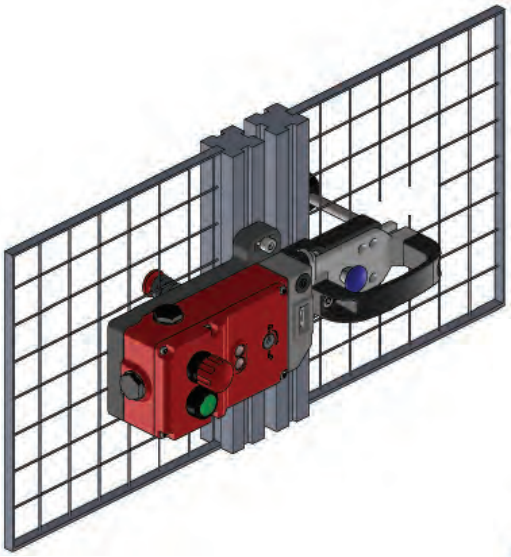
ORDER SEPARATELY:
22mm Push Buttons, Switches, Lamps - See P80.

Universal Gate Box with Safety Interlocking **TYPE: UGB2-KLT**

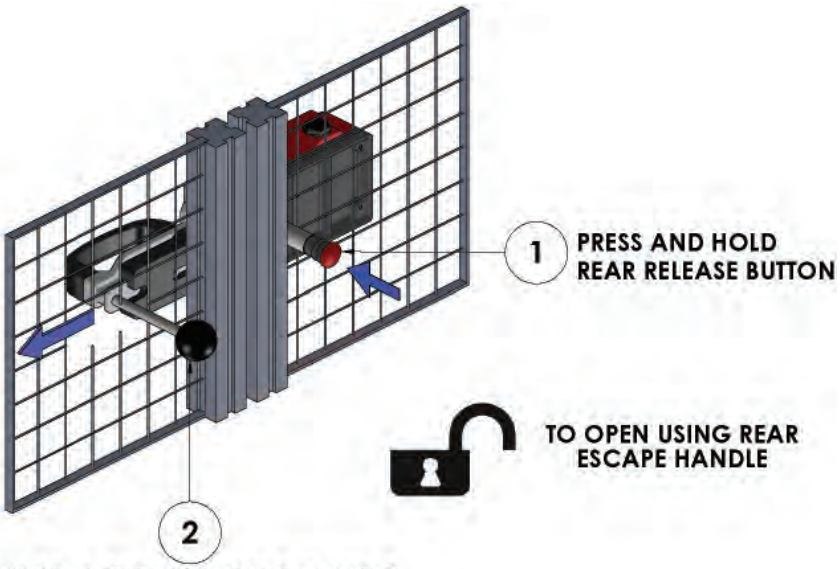
APPLICATION EXAMPLE:

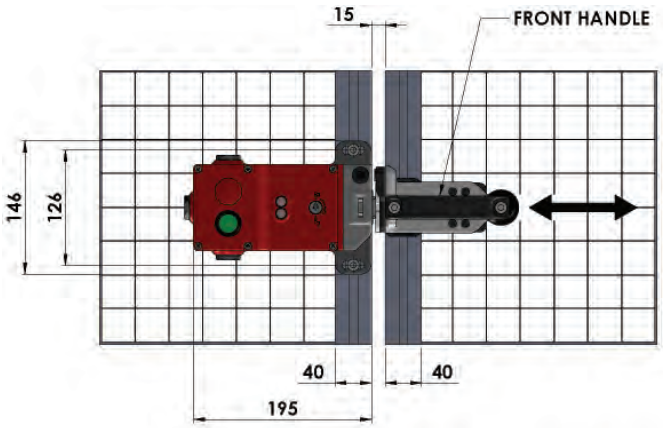
2 STATION (UGB2) with Front Sliding Handle, Rear Escape Button and Rear Escape Sliding Handle.
Fitted with Spring Loaded Catch – to prevent accidental closing after opening of the guard (optional).

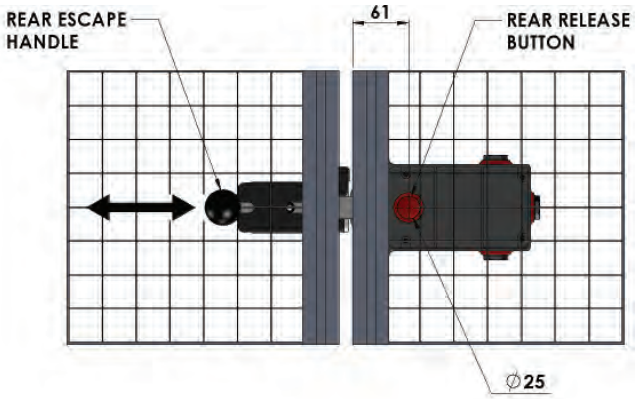
VIEWED FROM OUTSIDE GUARDED AREA

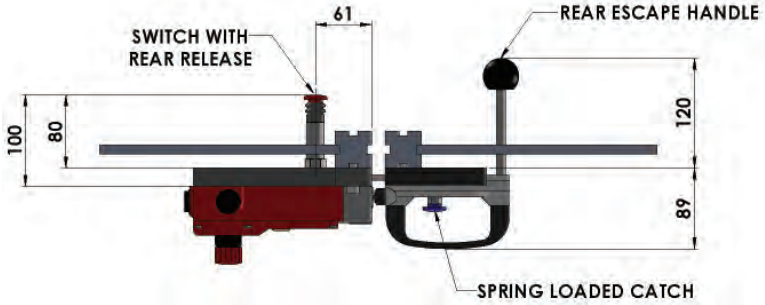


VIEWED FROM INSIDE GUARDED AREA









DESCRIPTION	SALES NUMBER
UGB2-KLTM-RFID-RR	
With LID Manual Override, or	525002
With NO Manual Override	525004
UGB2-SFH-M (Sliding Front Handle)	527001
Rear Release Handle (Stainless Steel)	210005
Spring Loaded Catch (Stainless Steel)	210006

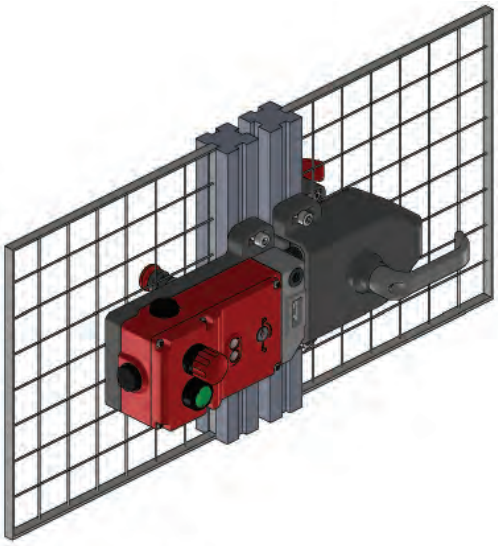
ORDER SEPARATELY:
22mm Push Buttons, Switches, Lamps - See P80.

Universal Gate Box with Safety Interlocking **TYPE: UGB2-KLT**

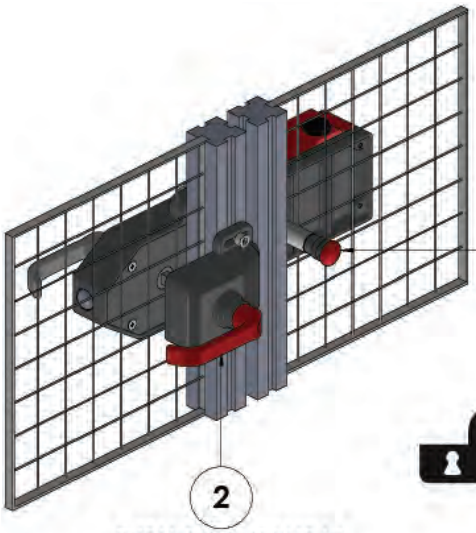
APPLICATION EXAMPLE:

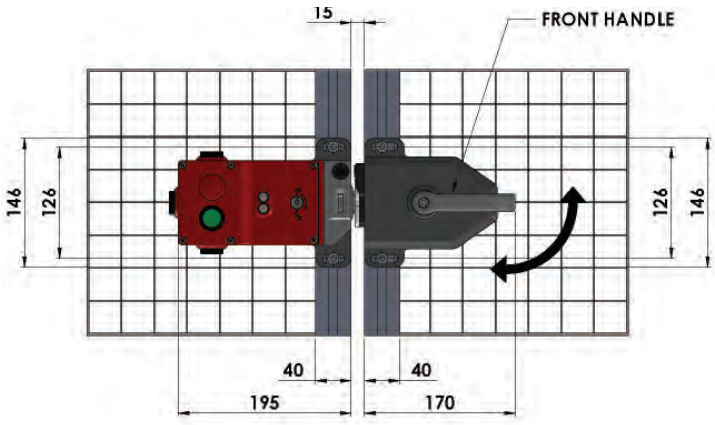
2 STATION (UGB2) with Front Rotary Handle, Rear Escape Button and Rear Escape Rotary Handle.

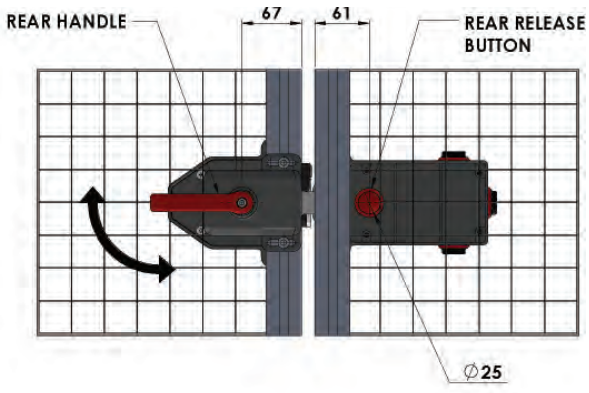
VIEWED FROM OUTSIDE GUARDED AREA

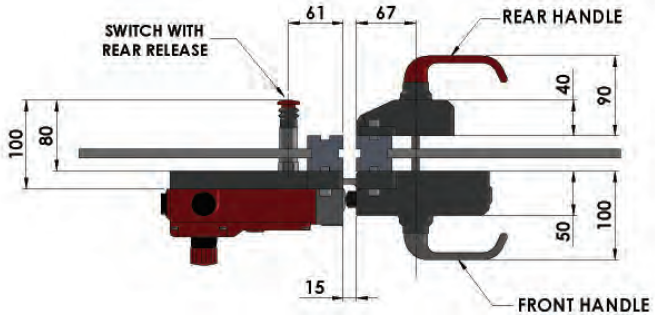


VIEWED FROM INSIDE GUARDED AREA









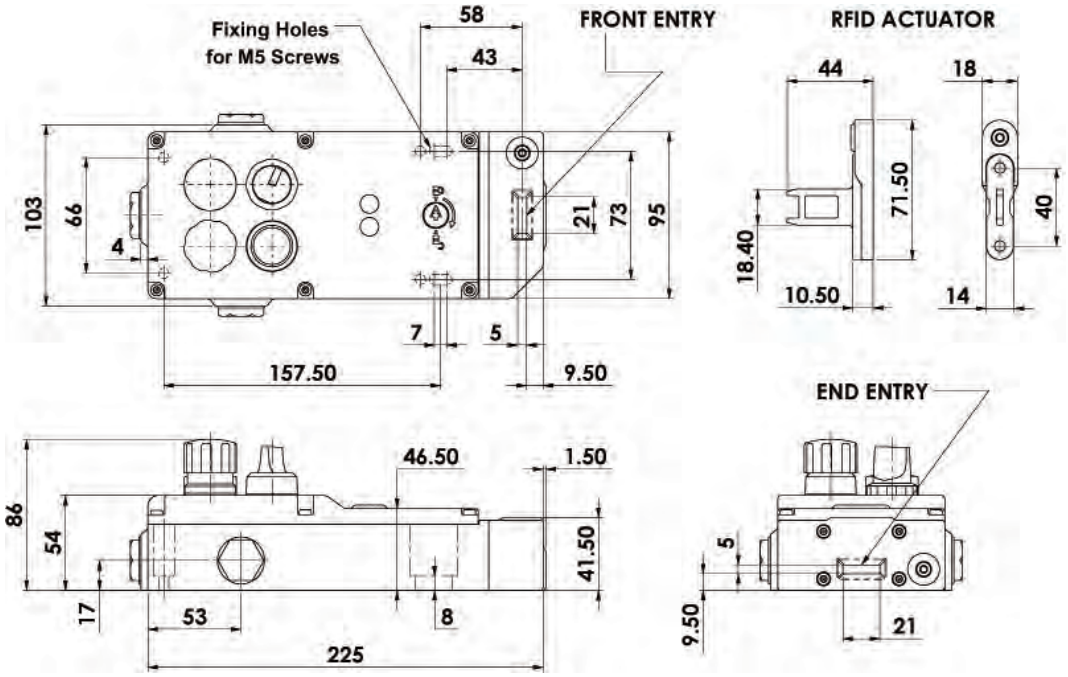
DESCRIPTION	SALES NUMBER
UGB2-KLTM-RFID-RR	
With LID Manual Override, or	525002
With NO Manual Override	525004
UGB2-RFH-M (Rotary Front Handle)	527003
UGB-RERH-M (Rear Escape Rotary Handle)	527005

ORDER SEPARATELY:
22mm Push Buttons, Switches, Lamps - See P80.

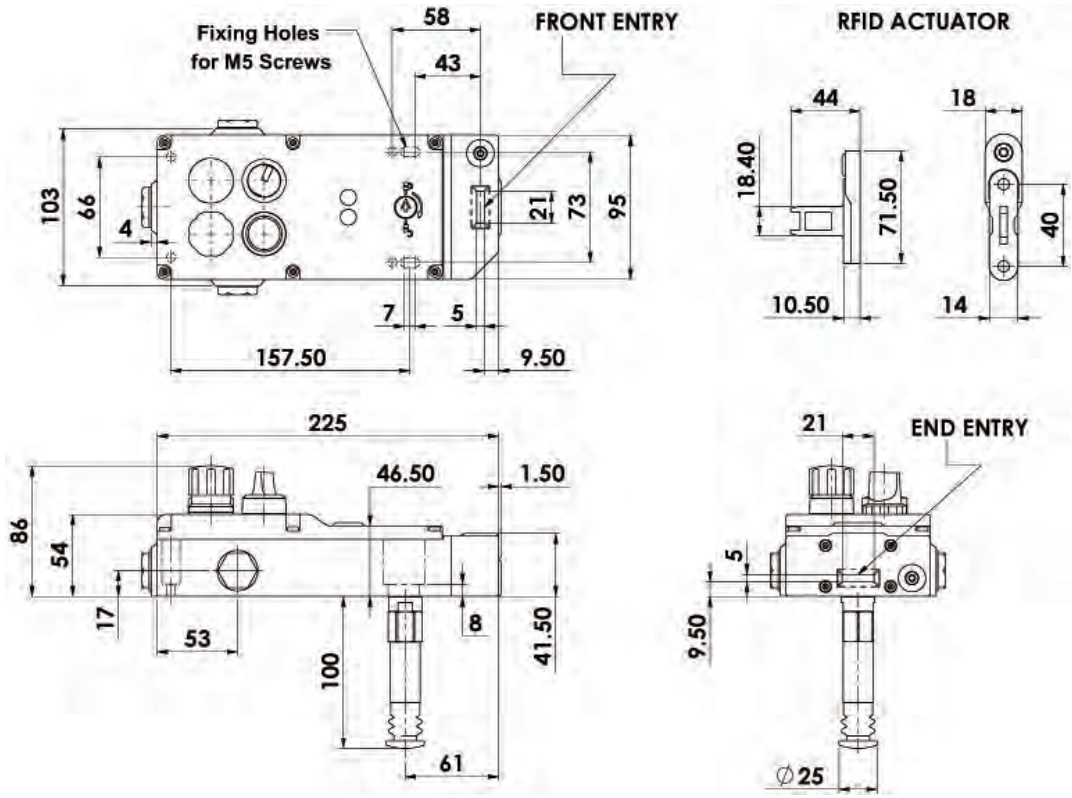
Universal Gate Box with Safety Interlocking **TYPE: UGB-KLT**

PRODUCT DIMENSIONS:

TYPE: UGB 4-KLTM-RFID



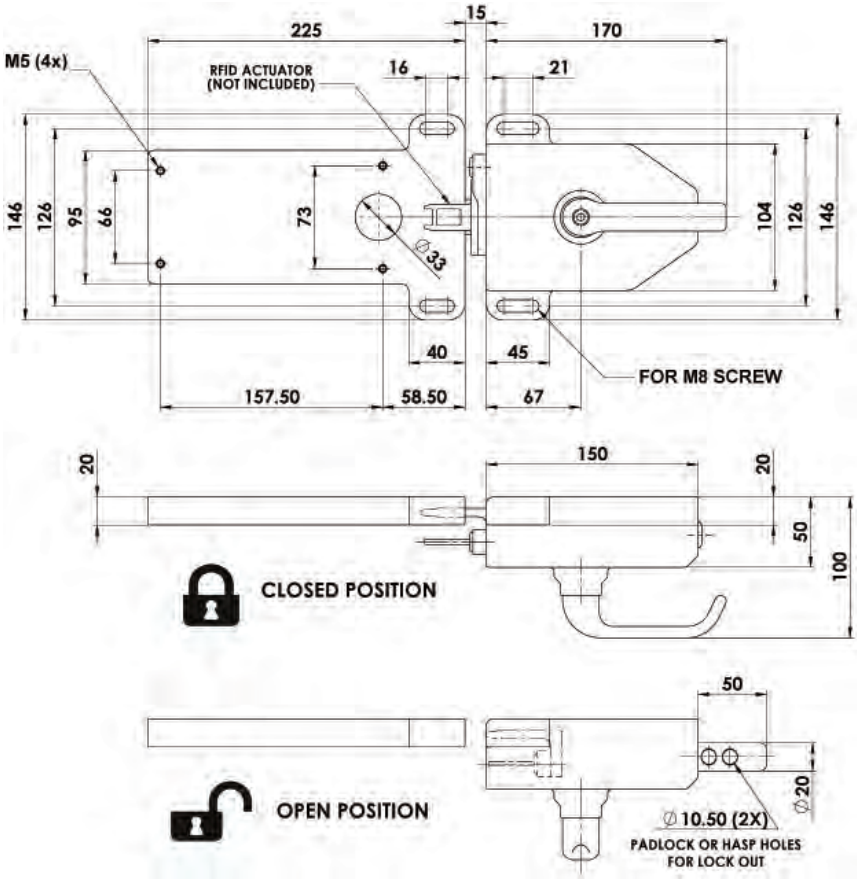
TYPE: UGB 4-KLTM-RFID-RR (Rear Release)



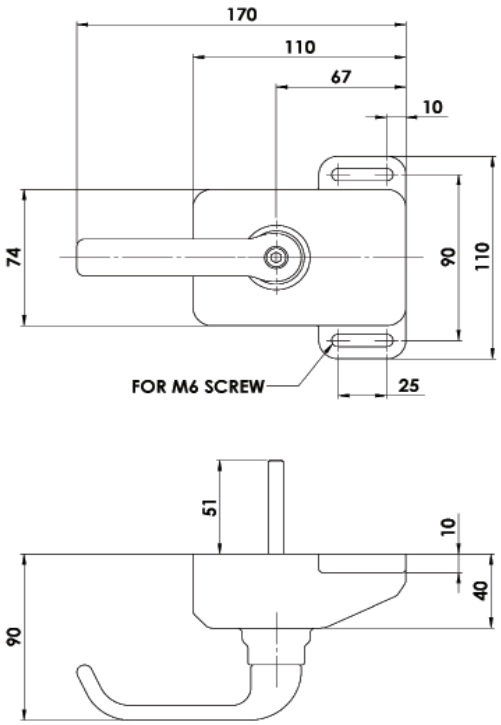
Universal Gate Box with Safety Interlocking **TYPE: UGB-KLT**

PRODUCT DIMENSIONS:

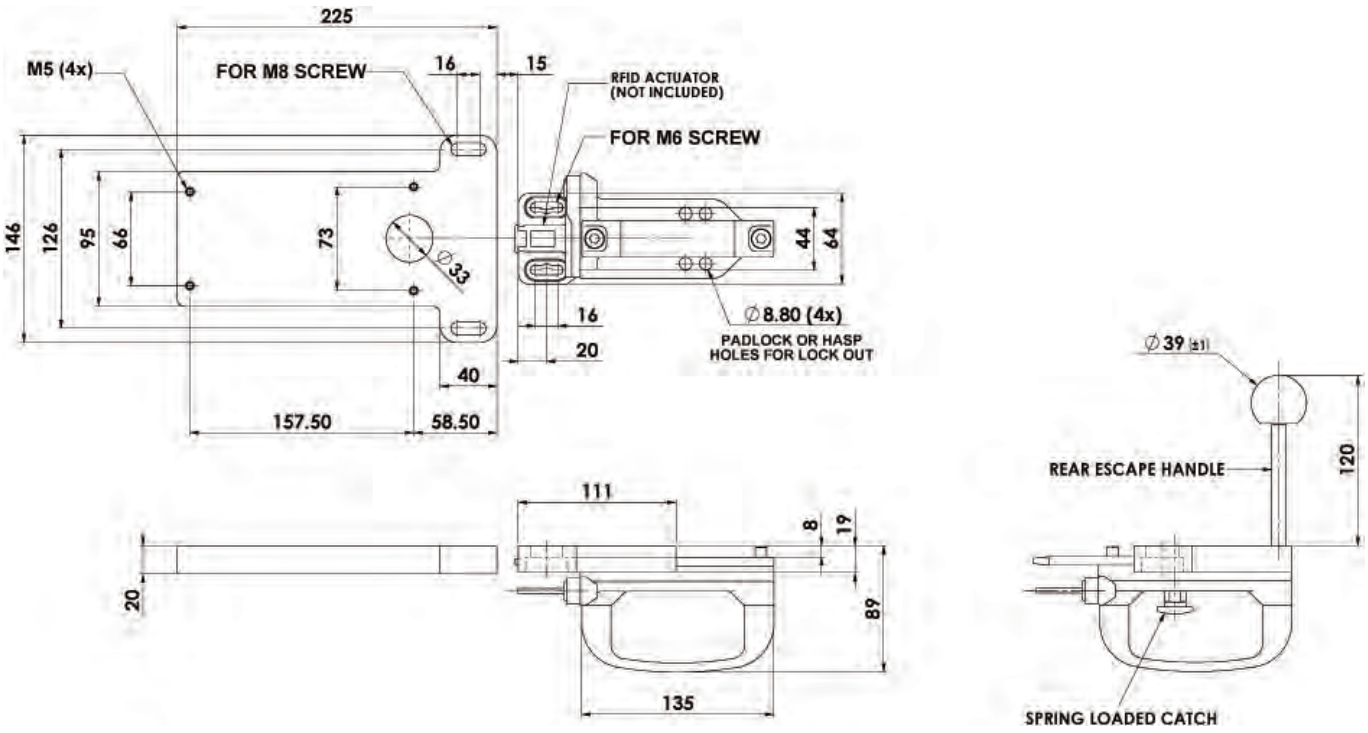
TYPE : UGB 4- ROTARY HANDLE (4 x APP)



TYPE : UGB-ROTARY REAR HANDLE



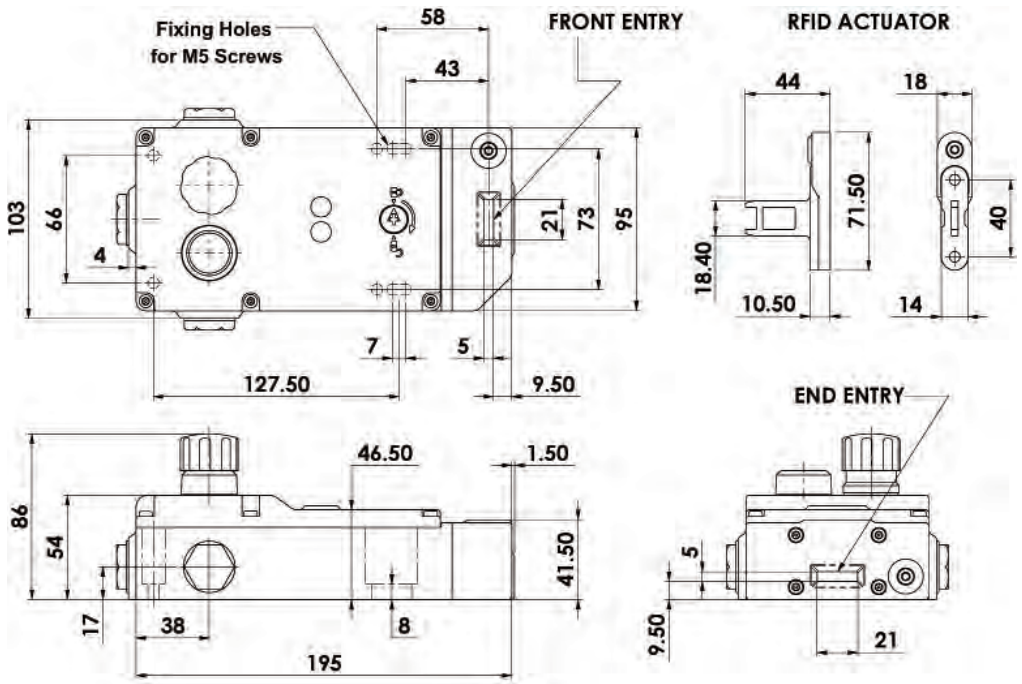
TYPE : UGB 4 SLIDING HANDLE (4 x APP)



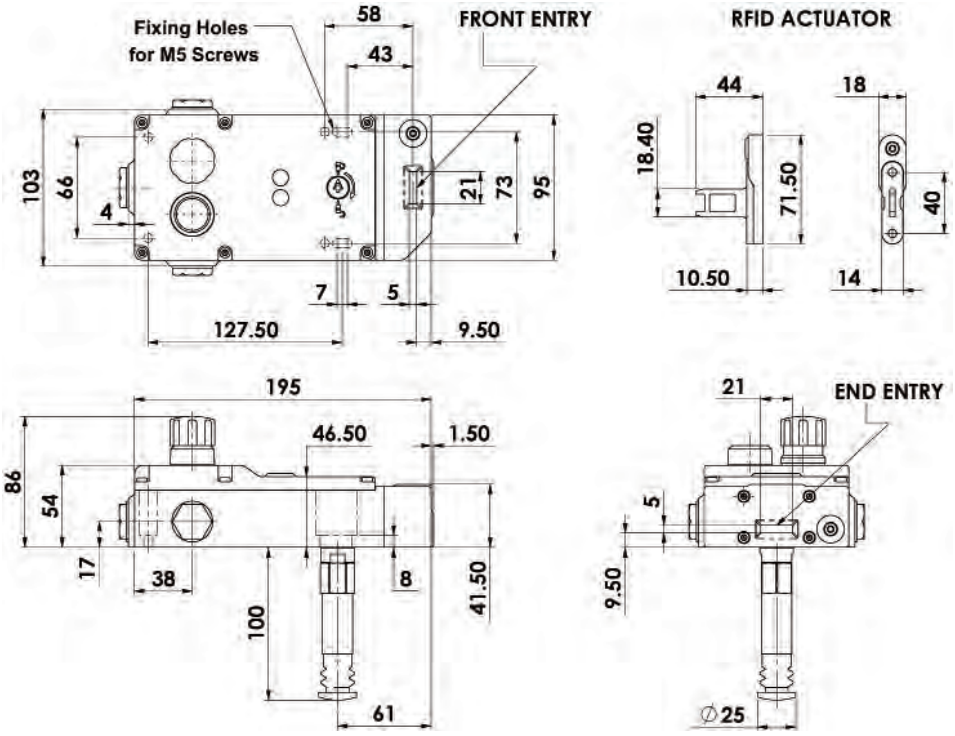
Universal Gate Box with Safety Interlocking **TYPE: UGB-KLT**

PRODUCT DIMENSIONS:

TYPE: UGB 2-KLTM-RFID



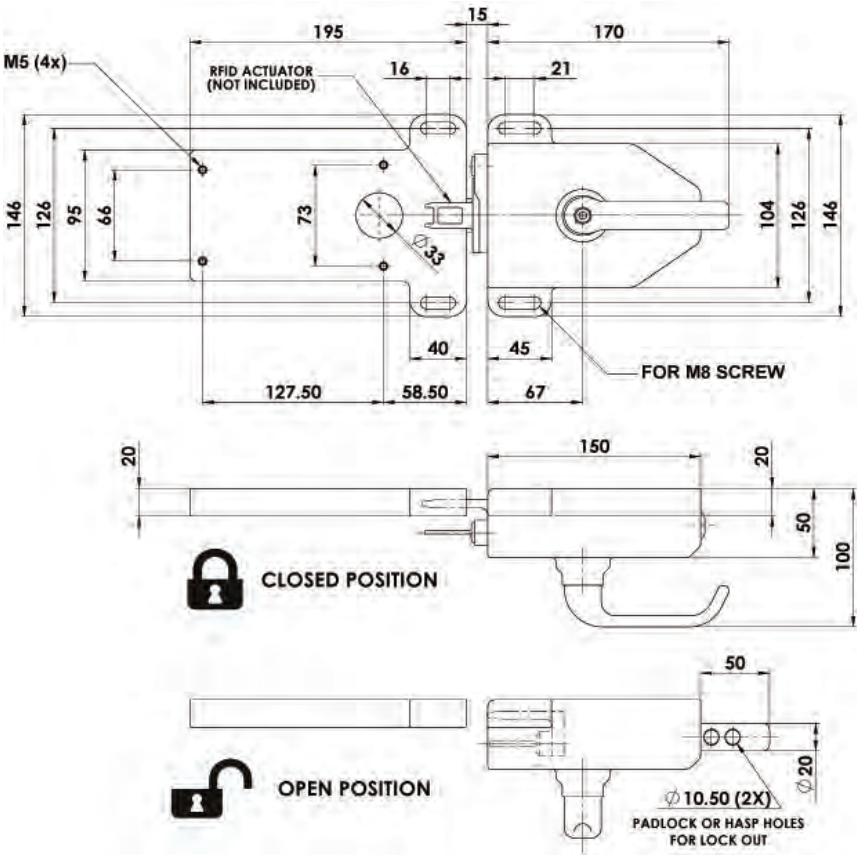
TYPE: UGB 2-KLTM-RFID-RR (Rear Release)



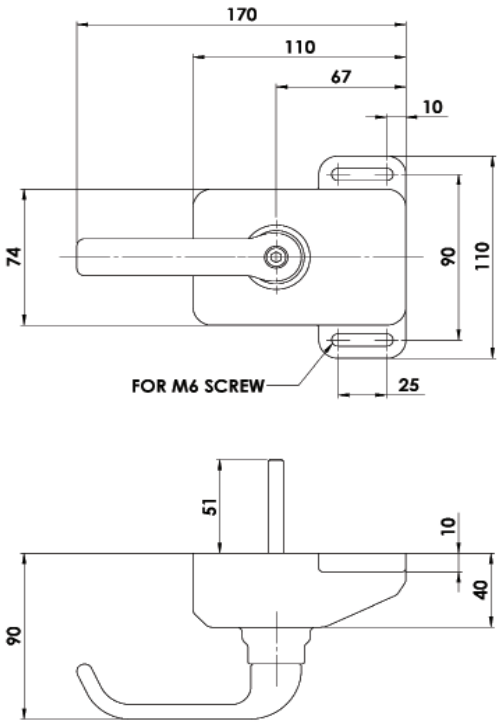
Universal Gate Box with Safety Interlocking **TYPE: UGB-KLT**

PRODUCT DIMENSIONS:

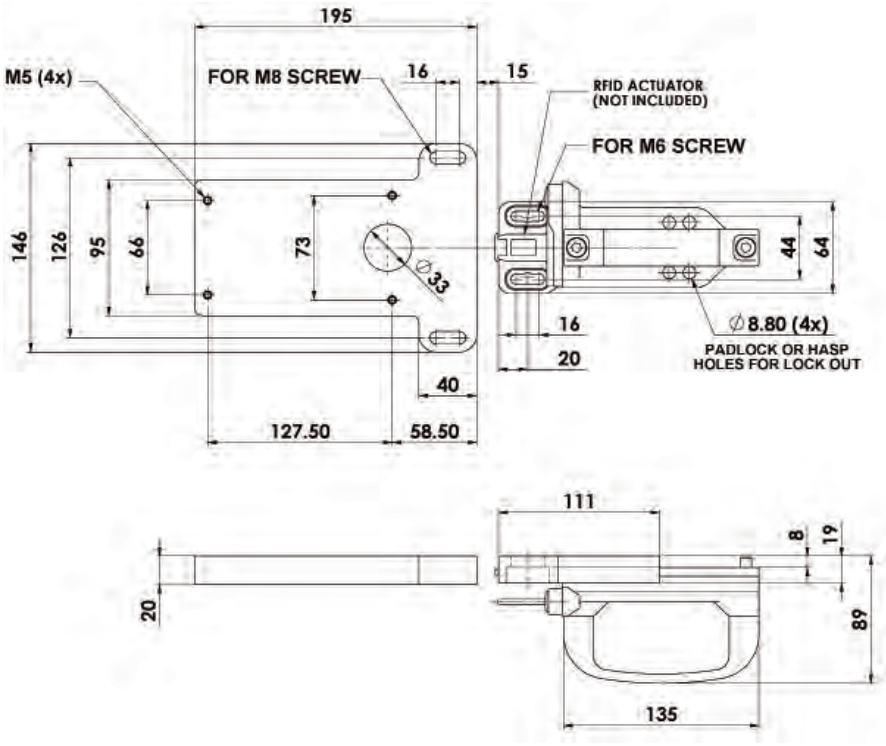
TYPE : UGB 2- ROTARY HANDLE (2 x APP)

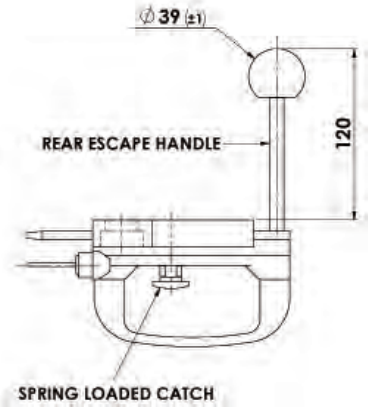


TYPE : UGB-ROTARY REAR HANDLE



TYPE : UGB 2 SLIDING HANDLE (2 x APP)





Gate Bolts for Tongue Switches **Types: GBL-1 & GBA-1**

FEATURES & APPLICATION:

GBL-1 shown fitted with KLM Switch
Left Hand Version shown

GATE BOLTS FOR TONGUE SWITCHES

Available in two sizes to accommodate short or long version tongue switches.

Gate Bolt Actuators provide:

The GBL-1 and GBA-1 Gate Bolts are manufactured with a rugged die-cast metal Steel construction, providing shearing forces up to 10,000 Newtons (F1Max) on large hinged doors.

Easy to install on hinged or sliding guards. (4 x M6 Mounting Bolts).

Once installed there is no need for extra brackets or door handles.

Not susceptible to misalignment damage.

Operators are required to manually close the guard, they cannot close accidentally.

A padlock hole is provided as a means of locking open the handle to prevent the guard from being closed and the machine started during maintenance.

Yellow and Black colours to aid with Hazard Identification.

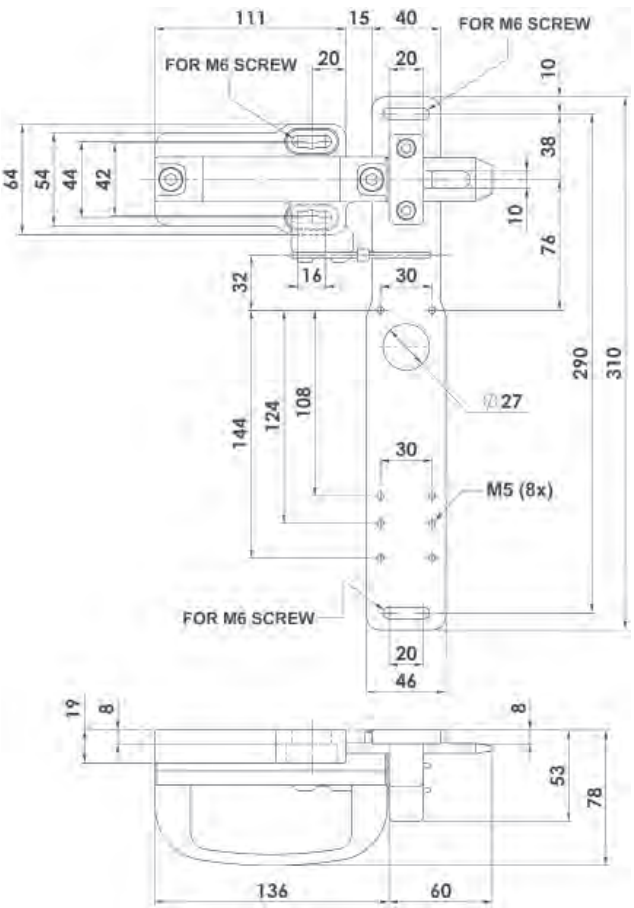
Supplied with Handle and Flat Actuator (Type F).

Optional Accessories (which can be fitted later after installation):

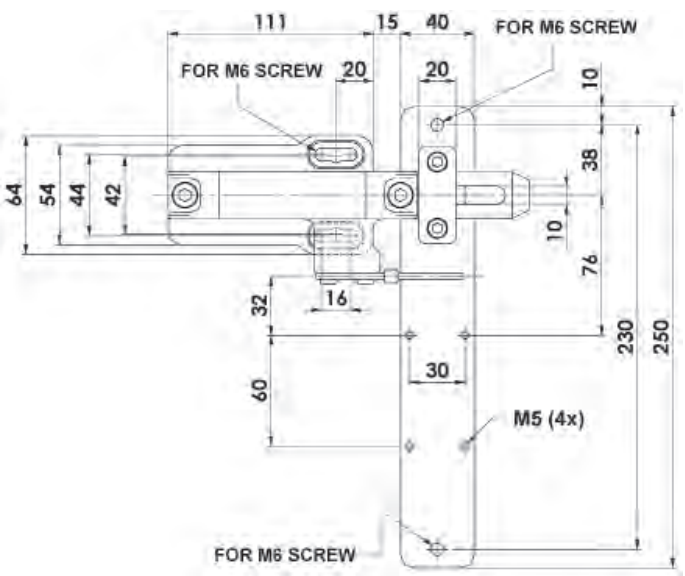
Rear handle where there is a requirement to move the handle from inside the guarded area.

Spring loaded catch to prevent accidental actuation after opening of the handle.

Type: GBL-1

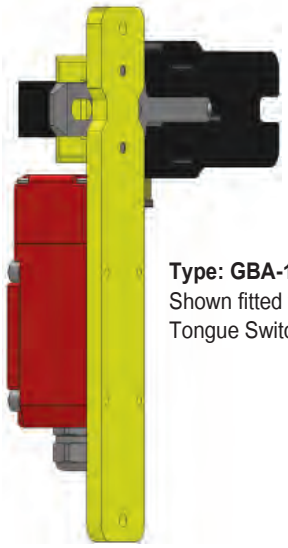


Type: GBA-1



Gate Bolts for Tongue Switches: **Types: GBL-1 & GBA-1**

Type: GBL-1
Shown fitted with KLM-RR Solenoid Locking Tongue Switch with optional extra Rear Handle



Type: GBA-1
Shown fitted with KM Tongue Switch

DESCRIPTION			SALES NUMBER	SUITABILITY
Gate Bolt Lock	GBL-1	Left Hand	210001	Suitable for Switch Types: KLP KLM KLM-RR KL4-SS
Gate Bolt Lock	GBL-1	Right Hand	210002	
Gate Bolt Tongue	GBA-1	Left Hand	210003	Suitable for Switch Type: KM
Gate Bolt Tongue	GBA-1	Right Hand	210004	
		Rear Handle	210005	Suitable for GBL-1 and GBA-1
		Spring Loaded Catch	210006	Suitable for GBL-1 and GBA-1

Accessories

Maintenance Lock Out Actuator:

Maintenance Lock Out Actuator. Fits to IDEM Tongue Switches.
Manufactured in Stainless Steel.
Fits to switch aperture during maintenance and provides multiple padlock holes.
Shown fitted to KM Switch (padlock not included).

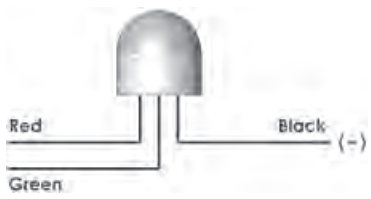
Actuator with Chain Attachment:

Flat Actuator supplied with 300mm (12") chain.
Can be used where poor alignment exists and provides manual insertion of actuator by operator.
Manufactured in Stainless Steel.

CONDUIT FITTING LED BEACON:

2 colour LED (3 wires) Steady Red and Steady Green.
Fits to conduit entry of most switches and provides option for LED indication based upon switch contacts.
The dome shaped LED is visible from narrow angles.
Available voltages 24Vdc, 110Vac or 230Vac and either M20 or 1/2" NPT conduit thread.
PVC conductors, fully encapsulated IP67.
Maximum temperature: 60C.
Housing material is polyester.

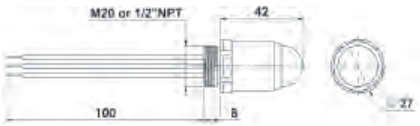
DESCRIPTION			SALES NUMBER
Lockout Actuator			140130
Flat Actuator with Chain			140131
Conduit LED Beacon	24Vdc	M20 conduit thread	140134
Conduit LED Beacon	110Vac	M20 conduit thread	140136
Conduit LED Beacon	230Vac	M20 conduit thread	140138
Conduit LED Beacon	24Vdc	1/2" NPT conduit thread	140135
Conduit LED Beacon	110Vac	1/2" NPT conduit thread	140137
Conduit LED Beacon	230Vac	1/2" NPT conduit thread	140139



Black is common
(0Vdc or negative for ac versions).

When power is applied to the RED wire the lamp will illuminate Red.

When power is applied to the GREEN wire the lamp will illuminate Green.



Gate Bolts for Tongue Switches: **GBL-1-SS & GBA-1-SS**

FEATURES & APPLICATION:

IDEM STAINLESS STEEL GATE BOLTS FOR TONGUE SWITCHES

Available in two sizes to accommodate short or long version tongue switches.

IDEM Stainless Steel Gate Bolt Actuators provide:

The GBL-1-SS and GBA-1-SS Steel Gate Bolts are manufactured in Stainless Steel and provide shearing forces up to 10,000 N (F1Max) on large hinged doors.

Easy to install on hinged or sliding guards. (4 x M6 Mounting Bolts).

Once installed there is no need for extra brackets or door handles.

Not susceptible to misalignment damage.

Operators are required to manually close the guard, they cannot close accidentally.

A padlock hole is provided as a means of locking open the handle to prevent the guard from being closed and the machine started during maintenance.

Supplied with Handle and Flat Actuator (Type F).

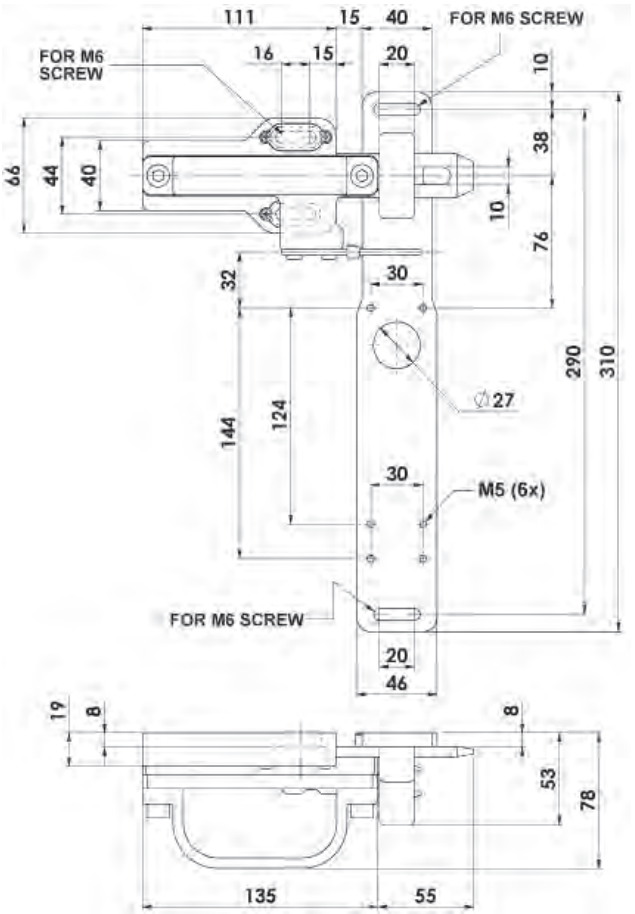
Optional Accessories (which can be fitted later after installation):

Stainless Steel Rear Handle: For where there is a requirement to move the handle from inside the guarded area.

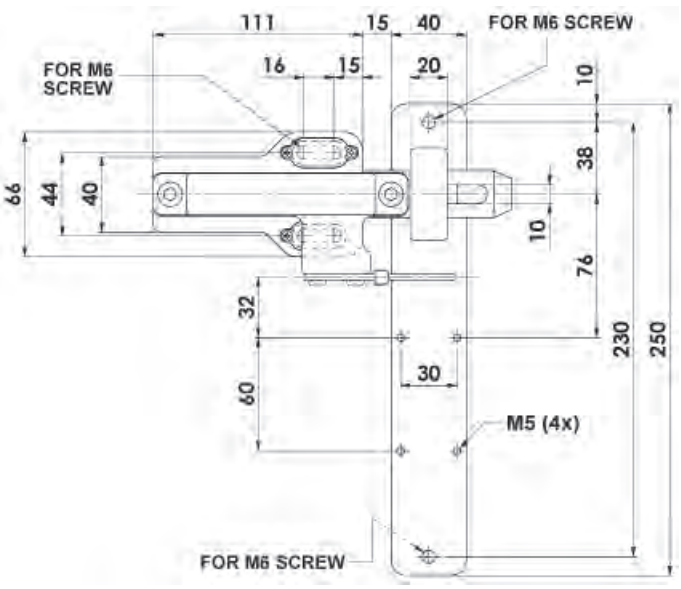
Stainless Steel Spring Loaded Catch:
To prevent accidental actuation after opening of the handle.

GBL-1-SS shown fitted with KL3-SS Switch
Left Hand Version shown

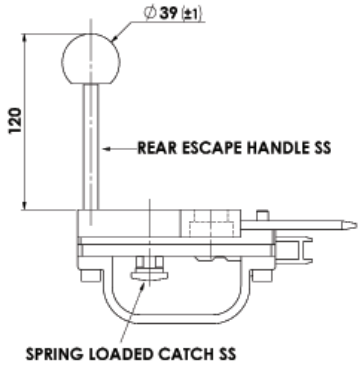
Type: GBL-1-SS



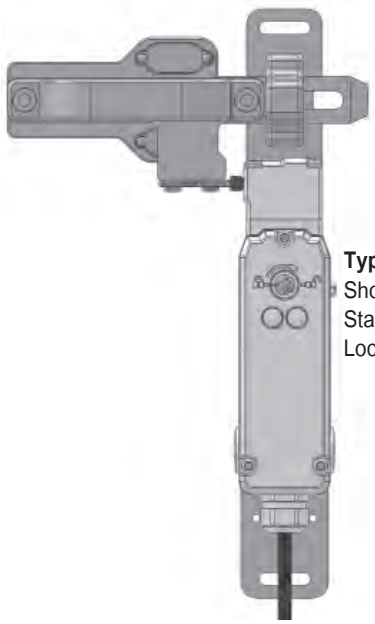
Type: GBA-1-SS



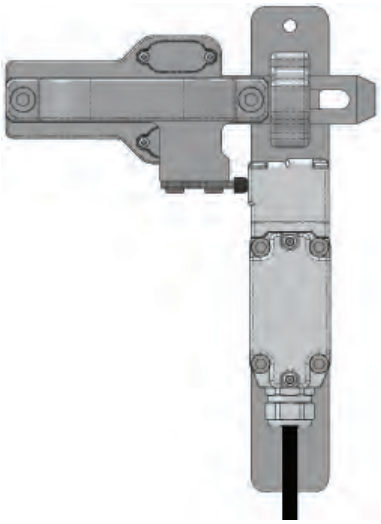
Stainless Steel Handle with Rear Lever and Spring Loaded Catch



Gate Bolts for Tongue Switches: **GBL-1-SS & GBA-1-SS**



Type: GBL-1-SS
Shown fitted with KL3-SS Stainless Steel 316 Solenoid Locking Tongue Switch

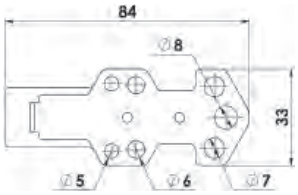


Type: GBA-1-SS
Shown fitted with KM-SS Stainless Steel 316 Tongue Switch

DESCRIPTION	SALES NUMBER	SUITABILITY
Gate Bolt Lock GBL-1 -SS Left Hand	211001	Suitable for Switch Types: KL3-SS KL3-SS-RR KL4-SS
Gate Bolt Lock GBL-1 -SS Right Hand	211002	
Gate Bolt Tongue GBA-1-SS Left Hand	211003	Suitable for Switch Type: KM-SS
Gate Bolt Tongue GBA-1-SS Right Hand	211004	
Rear Handle - Stainles Steel	211005	Suitable for GBL-1-SS and GBA-1-SS
Spring Loaded Catch - Stainless Steel	211006	Suitable for GBL-1-SS and GBA-1-SS

Accessories

Maintenance Lock Out Actuator:



Maintenance Lock Out Actuator. Fits to IDEM Tongue Switches.
Manufactured in Stainless Steel.
Fits to switch aperture during maintenance and provides multiple padlock holes.
Shown fitted to KM Switch (padlock not included).

Actuator with Chain Attachment:

Flat Actuator supplied with 300mm (12") chain.
Can be used where poor alignment exists and provides manual insertion of actuator by operator.
Manufactured in Stainless Steel.

CONDUIT FITTING LED BEACON:

2 colour LED (3 wires) Steady Red and Steady Green.
Fits to conduit entry of most switches and provides option for LED indication based upon switch contacts.
The dome shaped LED is visible from narrow angles.
Available voltages 24Vdc, 110Vac or 230Vac and either M20 or 1/2" NPT conduit thread.
PVC conductors, fully encapsulated IP67.
Maximum temperature: 60C.
Housing material is polyester.

DESCRIPTION			SALES NUMBER
Lockout Actuator			140130
Flat Actuator with Chain			140131
Conduit LED Beacon	24Vdc	M20 conduit thread	140134
Conduit LED Beacon	110Vac	M20 conduit thread	140136
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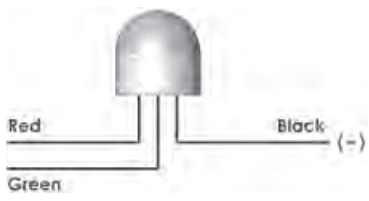
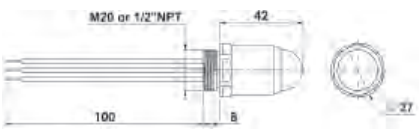
Conduit LED Beacon	24Vdc	1/2" NPT conduit thread	140135
Conduit LED Beacon	110Vac	1/2" NPT conduit thread	140137
Conduit LED Beacon	230Vac	1/2" NPT conduit thread	140139



Black is common
(0Vdc or negative for ac versions).

When power is applied to the RED wire the lamp will illuminate Red.

When power is applied to the GREEN wire the lamp will illuminate Green.



Gate Bolts for Non Contact Switches **Type: GBN-1**

APPLICATION:

IDEM GBN Gate Bolts when used with non contact switches provide interlocking of the guard but ensure that unintentional restart is prevented.

A deliberate action of sliding (and/or pulling GBN-3) and re-latching the gate bolt handle is required.

In conjunction with a Risk Assessment (ISO12100-1/ISO12100-2) they can be used to eliminate the risk of operators becoming accidentally trapped inside a guarded area.

FEATURES:

Manufactured in robust die cast metal and stainless steel construction.

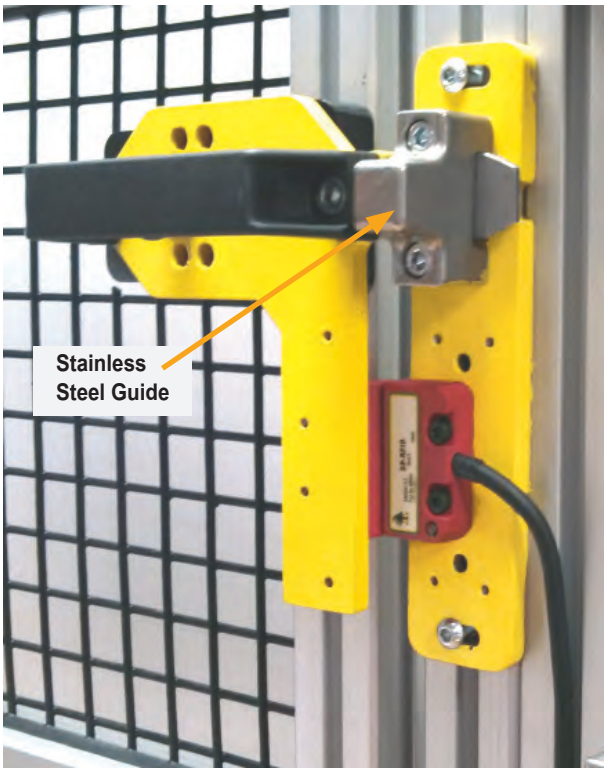
Non contact switches are mounted to aluminium plates to maximize read range.

Over 30mm ($1^1/_4$") adjustability (handle bracket and switch bracket mounting holes are slotted) to compensate for varying door gaps.

There are padlock holes provided to lock the handle to prevent the guard from being closed and the machine started during maintenance.

Stainless steel guide prevents accidental closure, keeps safety switches properly aligned and acts as door latch.

All individual pieces are replaceable if damaged (handle, guide, individual brackets, etc.). Switch brackets are pre-drilled to accommodate non contact safety switches (as listed).



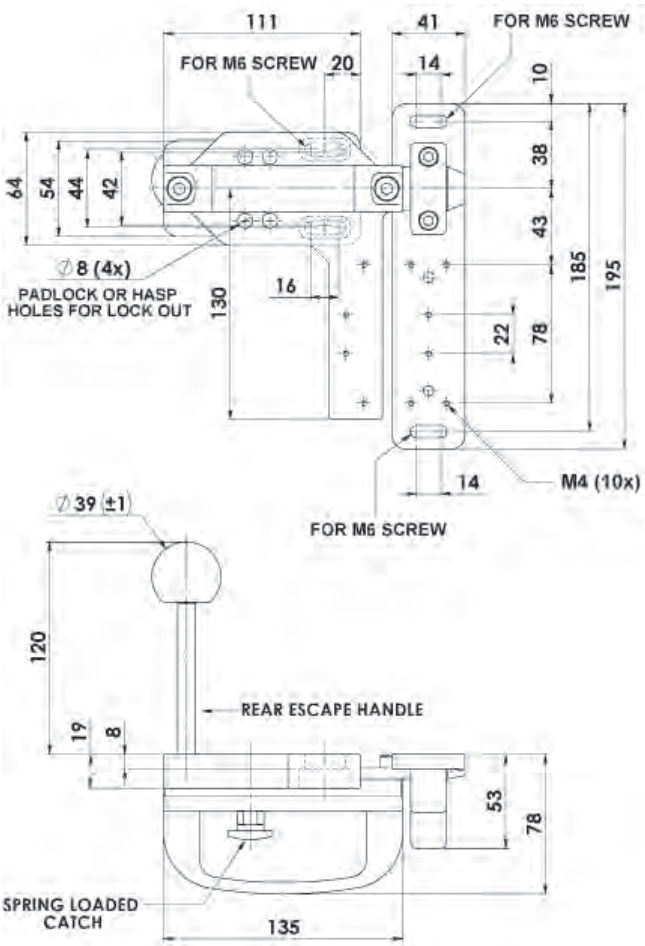
GBN-1 shown fitted with SPF-RFID Non Contact Switch
Left Hand Version shown.

Unlocking of the Gate Bolt can only be achieved by sliding the handle.

(Optional Rear Handle accessory available if there is a requirement to escape from the guarded area.)

Requires deliberate re-closing when re-start is required.

GBN-1 Gate Bolts hold the guard closed when the handle is closed, providing shearing forces of up to 10,000N (F1Max) on hinged guards.



OPTIONAL ACCESSORIES FOR GBN-1:

Rear handle where there is a requirement to open the Gate Bolt from inside the guarded area.

Spring loaded catch to prevent accidental actuation after opening of the handle. This holds the door in the closed position with light force (to prevent accidental opening due to vibration or other unforeseen actions).

When opened, knob retains the door in the open position and cannot close unless catch is pulled upwards.

GBN-1 GATE BOLT	HANDLE POSITION	SALES NUMBER
GBN-1 (Gate Bolt Non Contact)	Left	210007
GBN-1 (Gate Bolt Non Contact)	Right	210008
	Rear Handle	210005
	Spring Loaded Catch	210006

SWITCHES SUITABLE FOR MOUNTING ON THE GBN-1 GATE BOLT		
GBN-1 Gate Bolt	CODED:	SPC, SMC, SMC-H, LPC, LMC
	MAGNETIC:	SPR SMR, SMR-H, LPR, LMR
	RFID:	SPF-RFID, LPF-RFID, LPZ-RFID

Gate Bolts for Non Contact Switches **Types: GBN-3**

APPLICATION:

IDEM GBN Gate Bolts when used with non contact switches provide interlocking of the guard but ensure that unintentional restart is prevented.

A deliberate action of sliding (and/or pulling GBN-3) and re-latching the gate bolt handle is required.

In conjunction with a Risk Assessment (ISO12100-1/ISO12100-2) they can be used to eliminate the risk of operators becoming accidentally trapped inside a guarded area.

FEATURES:

Manufactured in robust die cast metal and stainless steel construction.

Non contact switches are mounted to aluminium plates to maximize read range.

Over 30mm (1¹/₄") adjustability (handle bracket and switch bracket mounting holes are slotted) to compensate for varying door gaps.

There are padlock holes provided to lock the handle to prevent the guard from being closed and the machine started during maintenance.

Stainless steel guide prevents accidental closure, keeps safety switches properly aligned and acts as door latch.

All individual pieces are replaceable if damaged (handle, guide, individual brackets, etc.). Switch brackets are pre-drilled to accommodate non contact safety switches (as listed).

GBN-3 shown fitted with SPF-RFID Non Contact Switch **Left Hand Version shown.**

Instant unlocking from inside the guarded area (held by springs only). Requires deliberate re-closing when re-start is required.

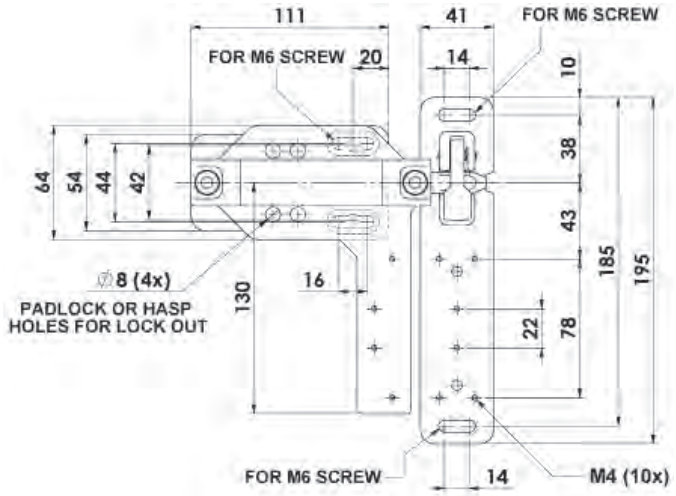
GBN-3 Gate Bolts with instant rear escape release allow operators to immediately open a closed guard from inside the danger area just by pushing the guard door. No tools or keys are needed to allow instant rear escape.

The GBN-3 Gate Bolt does not lock the guard but is retained by magnetic force to enable the guard to remain closed under normal operating conditions.

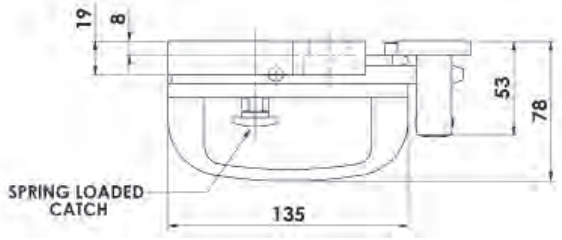
Whether opening the guard normally from the front (by using the handle) or by initiating the instant release by pushing the guard from inside the hazard zone the handle needs to be re-latched before the machine can be re-started.

A spring loaded stainless steel guide prevents the interlock being activated just by just closing or slamming the guard door.

DIMENSIONS GBN-3:



GBN-3 GATE BOLT	HANDLE POSITION	SALES NUMBER
GBN-3 (Gate Bolt Non Contact)	Left	210060
GBN-3 (Gate Bolt Non Contact)	Right	210061

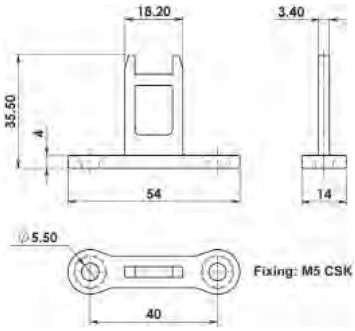


SWITCHES SUITABLE FOR MOUNTING ON THE GBN-3 GATE BOLT		
GBN-3 Gate Bolt	CODED:	SPC, SMC, SMC-H, LPC, LMC
	MAGNETIC:	SPR SMR, SMR-H, LPR, LMR
	RFID:	SPF-RFID, LPF-RFID, LPZ-RFID

Kobra Tongue Switches **Actuator Options**

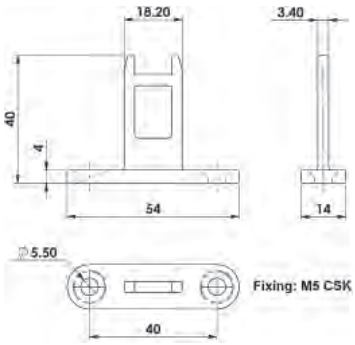
DIMENSIONS:

Standard Actuator
Kobra KP and K-15 (with plastic head)



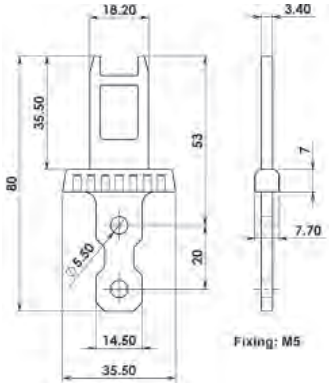
TYPE: A
Stainless Steel 316

Standard Actuator
Kobra KM, KLM, K-15-SS, KM-SS, K-SS, KL3-SS, KP-SS, KL4-SS, KL1-P, KL1-SS



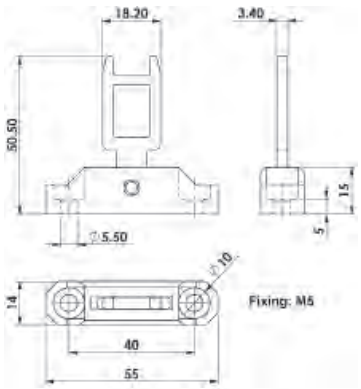
TYPE: A
Stainless Steel 316

Flat Actuator
Kobra KP, KM, K-15, KLP, KLM, KM-SS, K-SS, KL3-SS KL4-SS KL1-P, KL1-SS



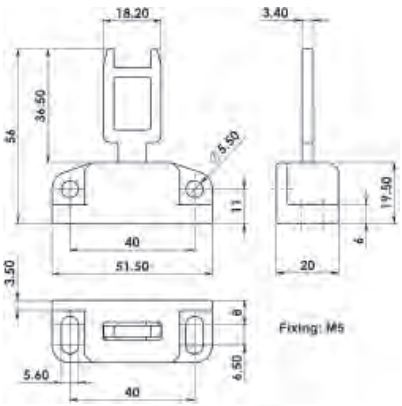
TYPE: F
Stainless Steel 316
with Plastic Shroud

Plastic Flexible Actuator
Kobra KP, KM, K-15, KM-SS, K-SS



TYPE: PF
Plastic Flexible Actuator
(adjust angle by screw)
Stainless Steel 316
Plastic Housing

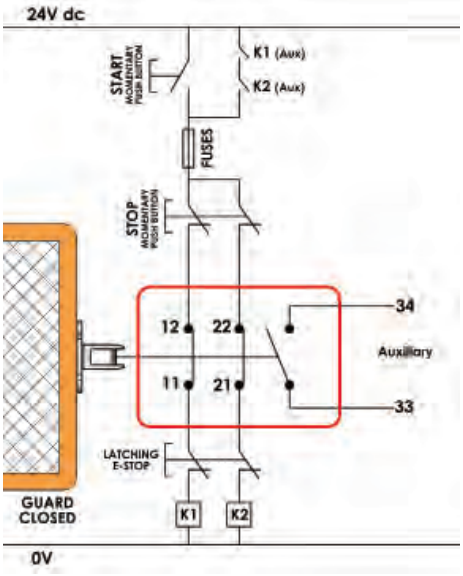
Metal Heavy Duty Flexible Actuators
Kobra KP, KM, KLP, KLM, K-15, KL3-SS, KM-SS, K-SS, KL4-SS, KL1-P, KL1-SS



TYPE: HF
Heavy Duty Flexible Actuator
Stainless Steel 316
Die-Cast Metal Housing
(black colour)

TYPE: HFH
Heavy Duty Flexible Actuator
(Hygienic version)
Stainless Steel 316 Housing
Mirror Polished Finish

Kobra Tongue Switches **Application Examples**



Guard Door Mechanical Interlock and E Stop - Dual Channel Non Monitored

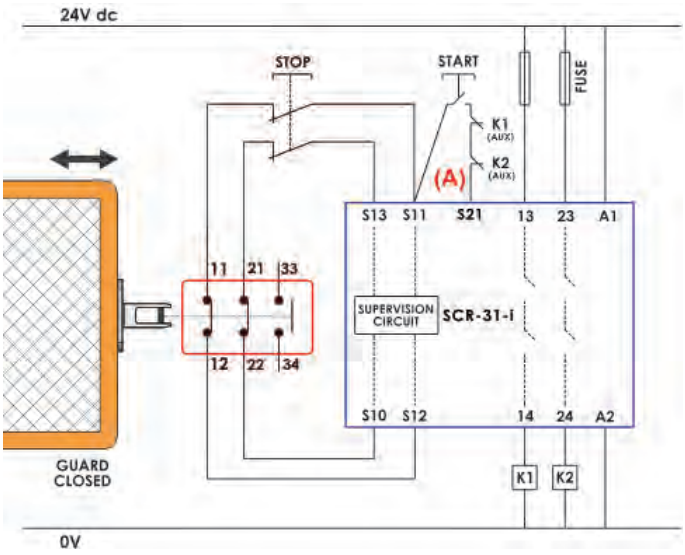
System shows interlock switch circuits 11-12 and 21-22 configured to allow direct feed to contactor coils K1 and K2.

Opening the interlock switch or depressing the E stop will isolate power to the contactor coils.

Re-start can only occur providing the guard is closed and the E stop is reset.

System is shown with machine stopped, guard closed and the contactors able to be energised.

Contacts 33-34 provide an auxiliary circuit for signalling guard open or closed.



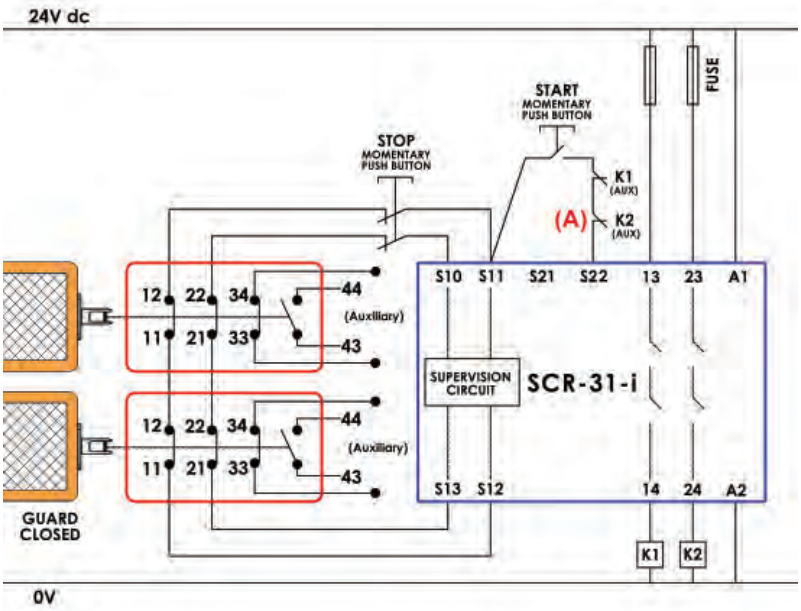
One Guard Door Mechanical Interlock - Dual Channel

The positively operated interlock contacts from circuit 11-12 and 21-22 are connected dual channel input to S11-S12 and S10-S13 on the SCR-31-i Safety Relay.

This provides a positively operated dual channel circuit and provides a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2. The SCR-31-i monitors the switch circuit and the contactors K1and K2 and provides it's own self-monitoring via force guided internal relays.

Opening the guard or pressing the stop button will cause the machine to stop. Re-start can only be achieved if the guard is closed and the contactors K1 and K2 have both opened and the start button is pressed.

System is shown with machine stopped, guards closed and the contactors able to be energised.



Two Guard Door Mechanical Interlocks in series - Dual Channel

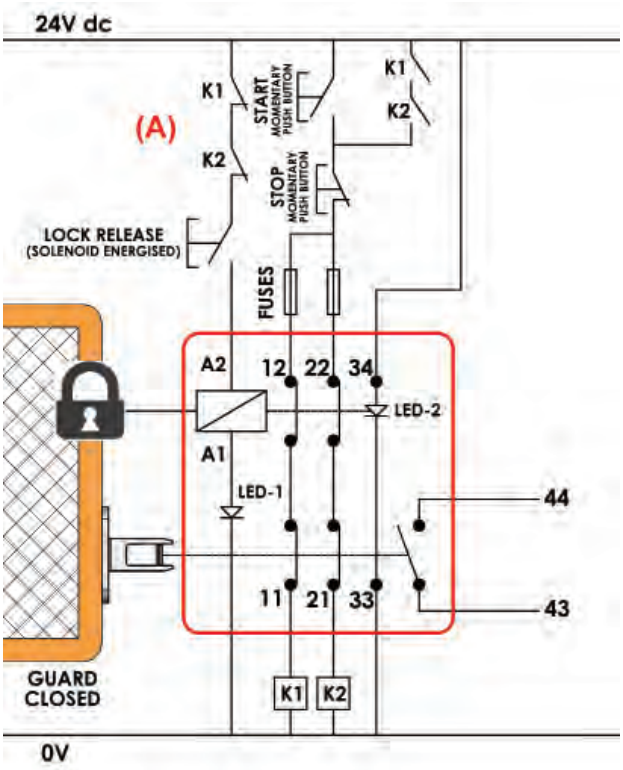
The safety category can be enhanced by connecting two switch circuits 11-12 and 21-22 from mechanical interlocks to an SCR-31-i Safety Relay to monitor for wiring short circuits.

This provides dual channel monitoring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

The SCR-31-i monitors the switch circuits and the contactors K1 and K2 and provides it's own self-monitoring via force guided internal relays.

System is shown with machine stopped, guards closed and the contactors able to be energised.

Kobra Tongue Switches **Application Examples**



Solenoid Locking Guard Switch - Dual Channel Non Monitored

The guard is locked closed until the solenoid is energised. The solenoid can only be energised when the auxiliary contacts (A) of contactors K1 and K2 are closed.

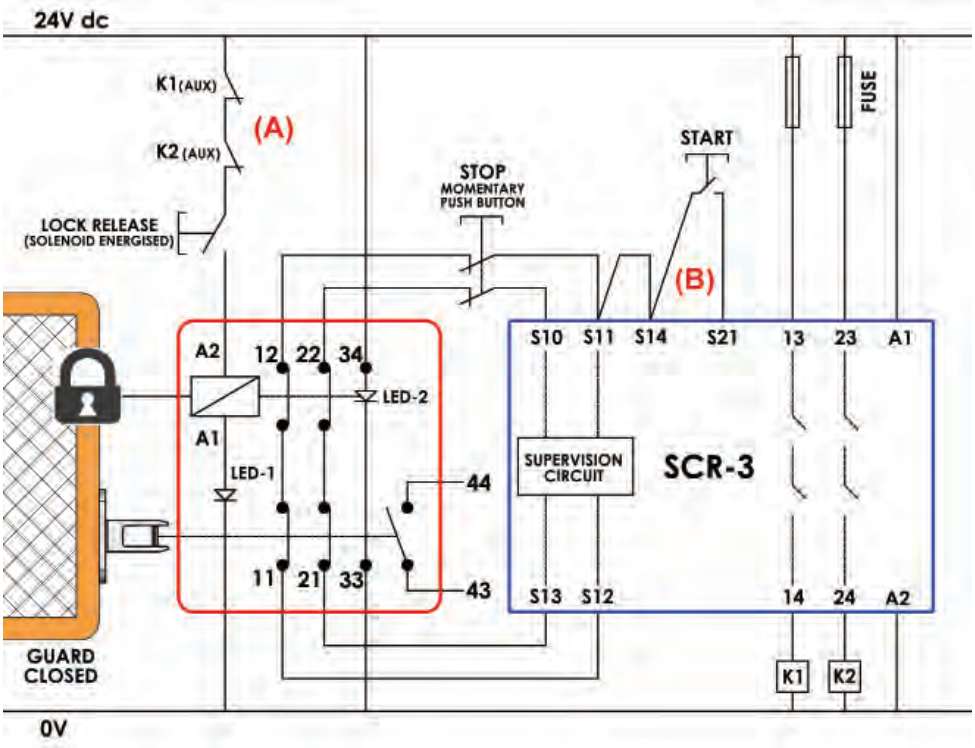
When the lock release button is pushed the locking mechanism is released and the switch contacts 11-12 and 21-22 are opened. These contacts are in series with contactor coils of K1 and K2 and will prevent re-start whilst the guard is open.

If after pressing the stop button either contactor K1 or K2 stays closed the motor will stop but the solenoid cannot be energized or the guard opened.

LED 1 provides visual indication of solenoid power applied.

LED 2 provides visual indication of guard locked and machine able to start.

System is shown with machine stopped, guard closed and locked, and the solenoid able to be energised.



Solenoid Locking Guard Switch - Dual Channel Monitored

A high safety category can be achieved by connecting the solenoid switch circuits 11-12 and 21-22 to an SCR-3 Safety Relay to monitor for wiring short circuits.

This provides dual channel monitoring and a check of the contactor feedback circuits through the auxiliary contacts (A) & (B) of K1 and K2. The SCR-3 monitors the switch and the contactors K1 and K2 and provides it's own self-monitoring via force guided internal relays.

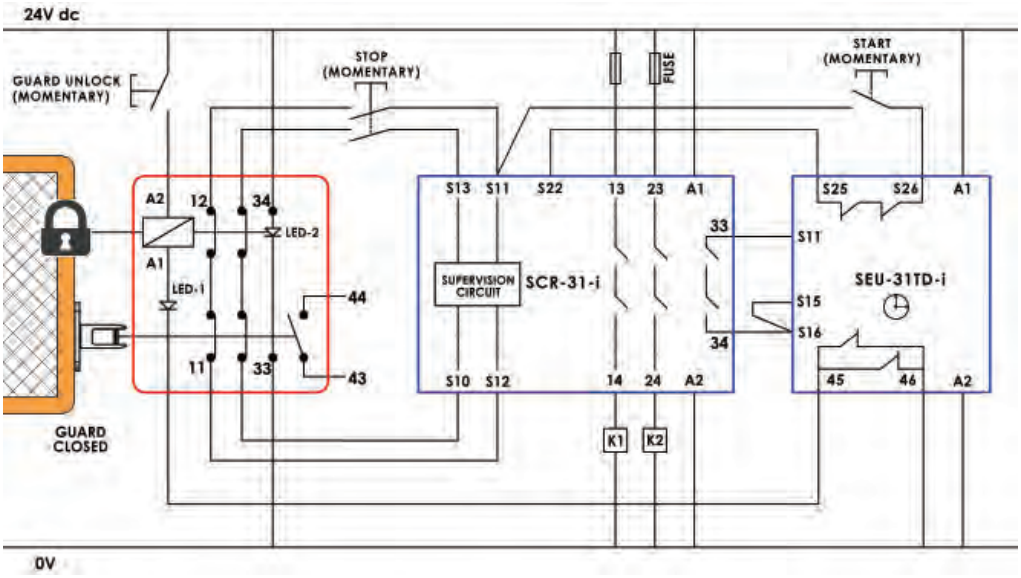
Pressing the lock release button will energise the solenoid, open the solenoid switch contacts and cause the safety relay output contacts at 13-14 and 23-24 to open. (The guard can be opened whilst the solenoid is energised).

Pressing the stop button will cause the safety relay output contacts at 13-14 and 23-24 to open. (The guard remains closed and locked).

Re-start can only be achieved if the guard is closed and the contactors K1 and K2 have both opened and the start button is pressed.

System is shown with machine stopped, guard closed and locked, and the solenoid able to be energised.

Kobra Tongue Switches **Application Examples**



Solenoid Locking Guard Switch Dual Channel monitored with time delayed guard opening (manual unlock)

For systems requiring run down after activating a stop, a time delay can be added by connecting the delayed output from an SEU-31TD-i to the solenoid feed.

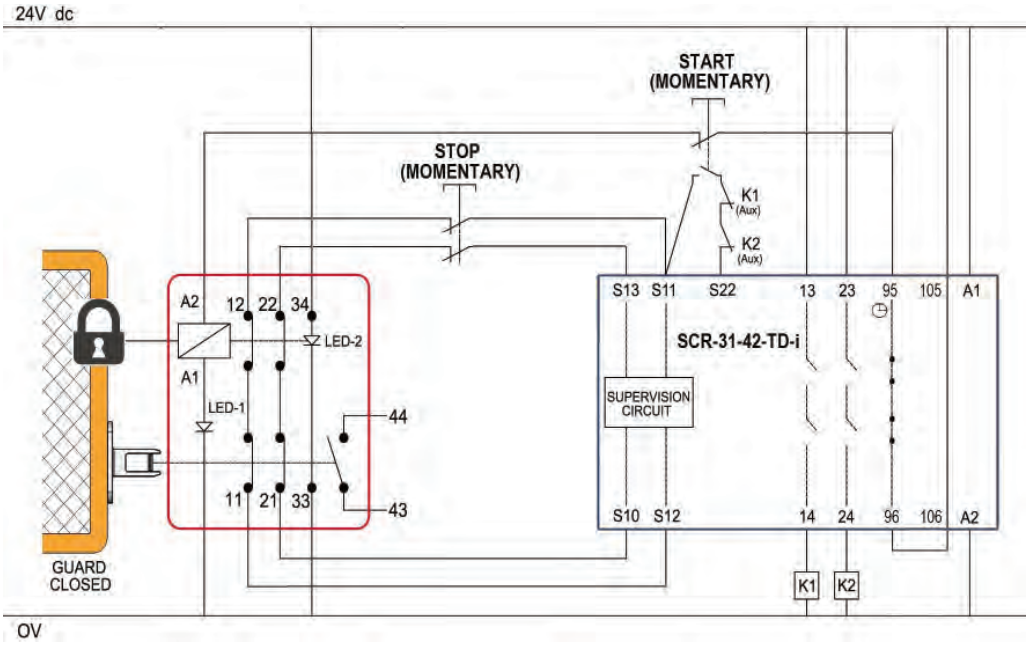
The output contacts 33-34 of the SCR-31-i provide the input to the SEU-31TD-i.

Pressing the top button causes the SCR-31-i contacts to open immediately and isolate power to contactors K1 and K2.

Also the input to the SEU-31TD-i will be opened and activate the preset time delay contacts.

Only when the set time delay has lapsed will the SEU-31TD-i allow the guard unlock button to supply power to the solenoid and enable the guard to be opened.

Providing that the guard is closed and locked the machine can start when the momentary start button is pressed.



Solenoid Locking Guard Switch Dual Channel Monitored with time delayed guard opening (Auto unlock)

Auto unlock after run down can be achieved by using the SCR-31-42-TD-i relay.

Pressing the STOP button causes the SCR-31-42-TD-i instant contacts to open and isolate the power to contactors K1 and K2.

The delayed contacts from 95-105 will supply power to the switch solenoid only after the set delay has been achieved.
The switch will auto unlock and the guard can be opened without pressing a manual button.

Providing that the guard is closed and locked, the machine can start when the START button is pressed.

Accessories for: **Tongue & Locking Switches**

ANGLED ACTUATOR

SALES NUMBER
140103
FITS MODELS
IDIS-1

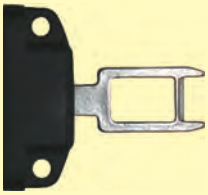
PLASTIC FLEXIBLE ACTUATOR

SALES NUMBER
140109
FITS MODELS
K-15 KP KM KM-SS K-SS

FLAT ACTUATOR

SALES NUMBER
140104
FITS MODELS
IDIS-1

HEAVY FLEXIBLE ACTUATOR



SALES NUMBER
140110
FITS MODELS
KP K15 KM KLP KLM KL1-P KLTM

PLASTIC FLEXIBLE ACTUATOR

SALES NUMBER
140105
FITS MODELS
IDIS-1

STAINLESS STEEL HEAVY FLEXIBLE ACTUATOR

SALES NUMBER
140111
FITS MODELS
KM-SS K-SS KL1-SS KL3-SS KL4-SS KLT-SS

STANDARD ACTUATOR

SALES NUMBER
140106
FITS MODELS
KP KP-15 (Plastic Heads)

MINIATURE ANGLED ACTUATOR

SALES NUMBER
140180
FITS MODELS
INCH-1 INCH-3 MK1-SS

STANDARD ACTUATOR

SALES NUMBER
140107
FITS MODELS
KP-SS K15-SS K-SS KM KM-SS KLP KLM KL3-SS KL4-SS KL1-P KL1-SS KLTM KLT-SS

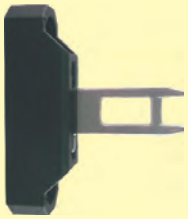
MINIATURE FLAT ACTUATOR

SALES NUMBER
140181
FITS MODELS
INCH-1 INCH-3 MK1-SS

FLAT ACTUATOR

SALES NUMBER
140108
FITS MODELS
KP-SS K15-SS K-SS KM KM-SS KLP KLM KL3-SS KL4-SS KL1-P KL1-SS KLTM KLT-SS

MINIATURE PLASTIC FLEXIBLE ACTUATOR



SALES NUMBER
140182
FITS MODELS
INCH-1 INCH-3 MK1-SS

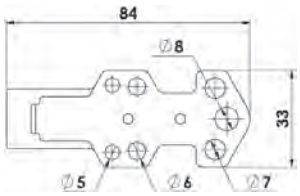
Accessories for: **Tongue & Locking Switches**

MANUAL RELEASE KEY	
	**SALES NUMBER**
	140123
	STAINLESS STEEL KL3-SS KL4-SS KLT-SS KL3-SS-Z

STAINLESS STEEL GUIDE (complete with screws)		
	**SALES NUMBER**	
	For INCH-1	140179
	For INCH-3	140179
	For MK1-SS	140179-SS
	MK1-SS supplied with two M3 stainless steel screws. INCH-1 and INCH-3 supplied with two self-tapping screws.	

	STAINLESS STEEL MOUNTING SPACERS Sold in Packs of 4 Length of Spacer: 20mm	
	M4 Clearance Hole	Sales Number: 140171
	M5 Clearance Hole	Sales Number: 140172

Maintenance Lock Out Actuator:



Maintenance Lock Out Actuator. Fits to IDEM Tongue Switches.
Manufactured in Stainless Steel.
Fits to switch aperture during maintenance and provides multiple padlock holes.
Shown fitted to KM Switch (padlock not included).

DESCRIPTION	SALES NUMBER
Lockout Actuator	140130

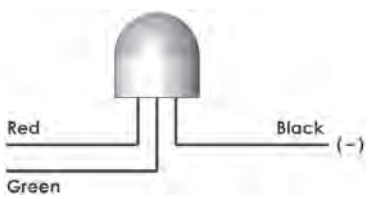
Actuator with Chain Attachment:

Flat Actuator supplied with 300mm (12") chain.
Can be used where poor alignment exists and provides manual insertion of actuator by operator.
Manufactured in Stainless Steel.

DESCRIPTION	SALES NUMBER
Flat Actuator with Chain	140131

CONDUIT FITTING LED BEACON:

2 colour LED (3 wires) Steady Red and Steady Green.
Fits to conduit entry of most switches and provides option for LED indication based upon switch contacts.
The dome shaped LED is visible from narrow angles.
Available voltages 24Vdc, 110Vac or 230Vac and either M20 or 1/2" NPT conduit thread.
PVC conductors, fully encapsulated IP67.
Maximum temperature: 60C.
Housing material is polyester.

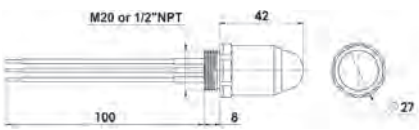


Black is common
(0Vdc or negative for ac versions).

When power is applied to the RED wire the lamp will illuminate Red.

When power is applied to the GREEN wire the lamp will illuminate Green.

DESCRIPTION			SALES NUMBER
Conduit LED Beacon	24Vdc	M20 conduit thread	140134
Conduit LED Beacon	110Vac	M20 conduit thread	140136
Conduit LED Beacon	230Vac	M20 conduit thread	140138
Conduit LED Beacon	24Vdc	1/2" NPT conduit thread	140135
Conduit LED Beacon	110Vac	1/2" NPT conduit thread	140137
Conduit LED Beacon	230Vac	1/2" NPT conduit thread	140139



Non Contact RFID Locking Switch **Type: MGL**

SPECIAL FEATURES:

Heavy Duty or Medium holding force versions

Available in Stainless Steel 316 (with Stainless Magnet), robust Plastic or Die-Cast Metal

Will operate with most Safety Relays to achieve up to PLe/Cat 4 to ISO13849-1

RFID Master Coded or Unique Coding

Stainless Steel 316 with Stainless Steel Magnet

High Specification Polyester

Die-Cast Metal

DESCRIPTION:

The MGL range of Non Contact RFID Coded switches has been developed in order to provide and maintain a high level of functional safety whilst providing a reliable magnetic door interlock.

Flexibility for holding force is provided by the provision of 2 different switch sizes - Heavy Duty (1100N (F1Max) Stainless Steel, 1500N (F1Max) Plastic and Die Cast) and Medium Duty (600N (F1Max) Stainless Steel, 1000N (F1Max) Plastic and Die Cast) to cover all applications.

Coding is achieved by using magnetic and RFID techniques and both principles need to be satisfied for the switch to operate safely.

The MGL range will connect to the majority of popular standard safety relays to achieve up to PLe/Category 4 to ISO13849-1.

Offered in Stainless Steel 316, high specification robust Plastic or Die-Cast Metal housings the MGL switch can be used in almost any environment including high pressure cleaning following contact with foreign particles.

The Stainless Steel 316 version has been designed with a Stainless Steel magnet and IP69K rating making it suitable for CIP and SIP processes.

RFID CODING OPTIONS:

The RFID coding is offered in two types and can be either coded by series or uniquely coded.

> **Type 1: Master Code** - by series (any actuator will operate any switch) this is used when unique door activation is not required, but the benefit of RFID makes it virtually impossible to be overridden or by-passed by simple means.
> **Type 2: 32,000,000 Unique Codes** - the switch is factory set and used when unique activation is required in areas where there are many interlocked doors and security of individual areas is required.

The MGL combines magnetic sensing and RFID technology to provide non contact operation and high anti-tamper coding. In addition an electromagnet is used to lock machine guards.

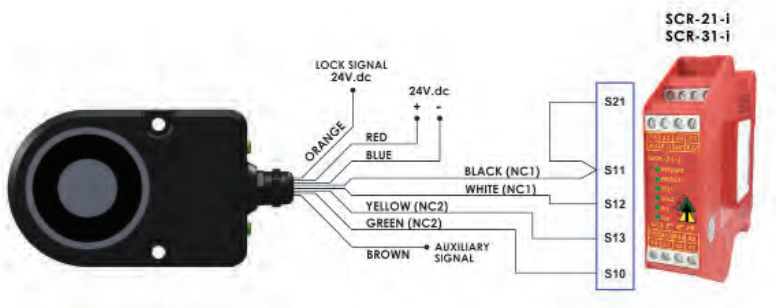
Only when the actuator is in the correct position can the lock be achieved and the safety outputs closed.

The switch provides two safe switching outputs for use with popular safety relays as well as a semi conductor auxiliary signal to indicate the door position.

There are 2 LEDs that offer 5 diagnostic functions to the user.

The switch is “Power to Lock” and therefore consideration must be given in the event of a power failure to machines where a run down time is present before the hazard is removed.

CONNECTION EXAMPLE:



FUNCTIONAL SPECIFICATIONS:

Heavy Duty: 1100N S/Steel, 1500N Plastic and Die Cast
Medium Duty: 600N S/Steel, 1000N Plastic and Die Cast
(All values quoted are F1Max.)

2NC Safety Outputs overload protected

1NO Auxiliary Output for indication of door open

No moving parts - high switch life and provides resistance to Shock and Vibration

Offered in: Stainless Steel 316 (with Stainless Steel Magnet), High Specification and robust Polyester housings, or Die Cast Metal.

Non Contact RFID Locking Switch **Type: MGL**

FEATURES:

Heavy Duty or Medium Duty holding forces available (comprising 6 models - 2 Stainless Steel, 2 High Specification Plastic and 2 Die-Cast Metal).

RFID provides a high degree of anti-tamper - virtually impossible to override.

Uniquely coded RFID or Series Coded RFID available - depending upon user's risk assessment for application.

The actuator (plastic or stainless steel) has been designed to be flexible and therefore has a degree of tolerance to misalignment.

Able to connect to most popular safety relays to achieve up to PLe and Cat.4 for ISO3849-1.

Connect up to 20 switches in series.

Ability to connect other switches and E-Stops in series.

Stainless Steel 316 model available for food processing applications (IP69K rating).

Unique triggering of solenoid latching mechanism to maintain close control of actuator position.

Choices of 8-core cable or M12 quick connect (QC).

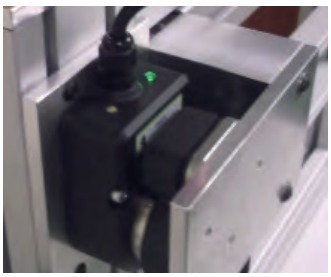
Remanence magnetization holding technique acts as a light magnetic latch after unlocking.

Shown in Guard Open position.

Yellow LED indicates OPEN.

Shown in Guard Closed position.

Green LED indicates CLOSED.



LED OPERATION & SWITCH STATUS INDICATION:

The MGL switch uses 2 LEDs to indicate all the different possible switch states.

The LEDs are in a clearly visible location at either side of the cable exit point.

SWITCH STATUS	GUARD	GREEN LED	YELLOW LED
Locked	Closed	Steady	Off
Solenoid Power OFF (Unlocked)	Closed	Flashing	Off
Guard Open	Open	Off	Steady
Door Forced Open	Open	Off	Flashing

MGL Operating Directions

SPECIFICATIONS:

Standards: ISO14119 EN60947-5-3 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Minimum switched current:	10V.dc 1mA
Dielectric Withstand:	250V.ac
Insulation Resistance:	100 Mohms
Switching Distance:	Sao 1mm Close Sar 10mm Open
Switching frequency:	1.0 Hz maximum
Approach speed:	200mm/m to 1000mm/s
Body material:	MGL-*P = Plastic MGL-*M = Die-Cast Metal MGL-*SS = Stainless Steel 316
Temperature Range:	-25C to +40C
Enclosure Protection:	IP67
Cable Type:	PVC 6 or 8 core 6mm OD
Mounting Bolts:	2 x M5 Tightening torque 1.0 Nm
Mounting Position:	Any

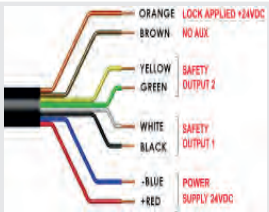
Characteristic Data according to IEC62061 (used as a sub system):

Safety Integrity Level	SIL3
PFH (1/h)	4.77E-10 Corresponds to 4.8% of SIL3
Proof Test Interval T_1	20a

Characteristic Data according to EN ISO13849-1:

Performance Level	e If both channels are used in combination with a SIL3/PLe control device
Category	Cat4
MTTFd	1100a
Diagnostic Coverage DC	99% (high)
Number of operating days per year:	d_{op} = 365d
Number of operating hours per day:	h_{op} = 24h
B10d	not mechanical parts implemented

When the product is used deviant from these assumptions (different load, operating frequency, etc.) the values have to be adjusted accordingly.

8-CORE 2M, 5M, 10M CABLE	CONDUCTOR COLOURS	FUNCTION
	Blue	0Vdc
	Red	24Vdc
	Orange	Lock Applied (24Vdc)
	Black	Safety Output 1
	White	Safety Output 1
	Yellow	Safety Output 2
	Green	Safety Output 2
	Brown	Auxiliary Signal

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

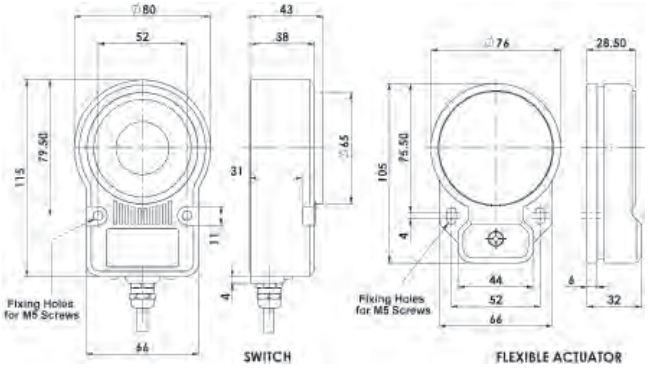
Pin view from Switch on flying lead 250mm (10")

Quick Connect (QC) M12 8 Way Male	Switch Circuit
3	0Vdc
2	24Vdc
8	Lock Applied (24Vdc)
7	Safety Output 1
1	Safety Output 1
4	Safety Output 2
6	Safety Output 2
5	Auxiliary Signal

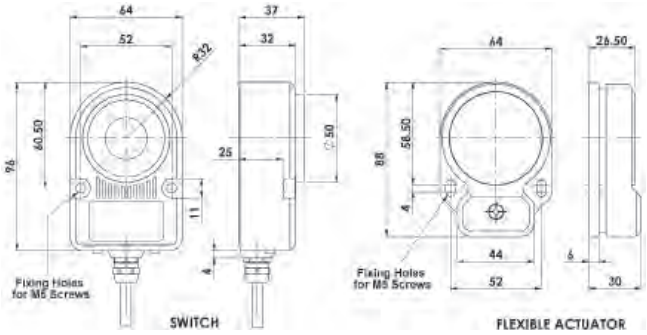
Non Contact RFID Locking Switch **Type: MGL**

DIMENSIONS:

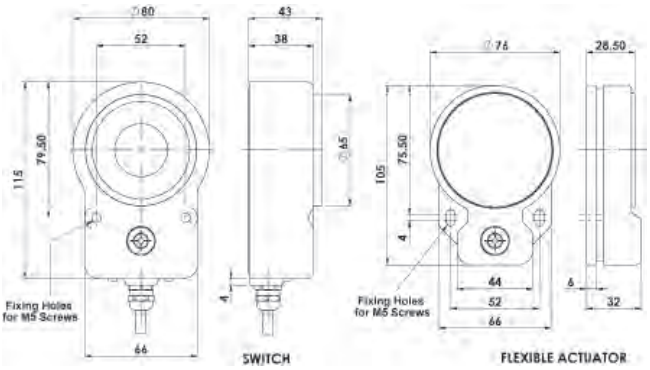
MGL-1P



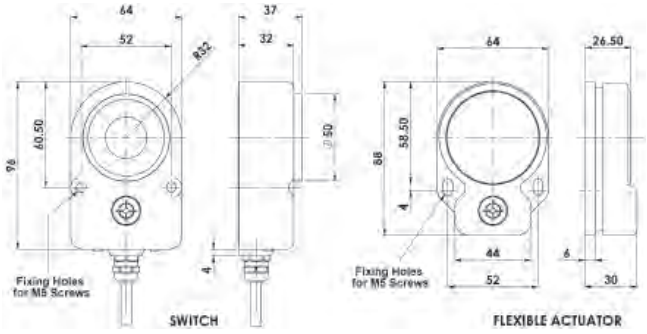
MGL-2P



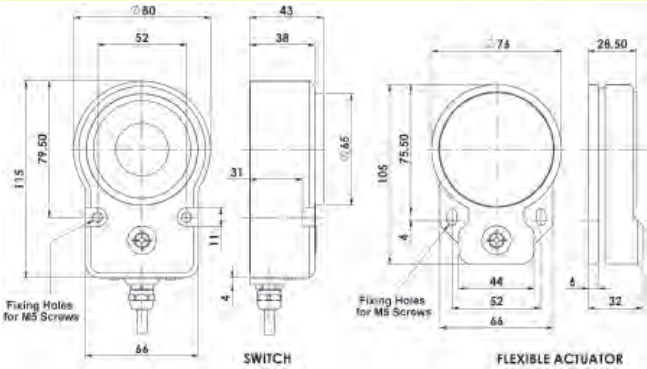
MGL-1SS



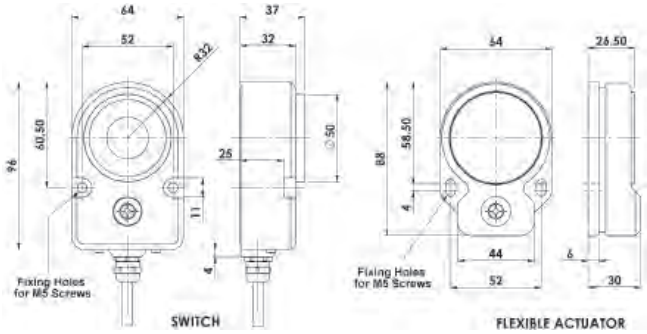
MGL-2SS



MGL-1M



MGL-2M



HOLDING FORCES:

STAINLESS STEEL VERSIONS:

1100N

MGL-1SS

600N

MGL-2SS

DIE-CAST METAL VERSIONS:

1500N

MGL-1M

1000N

MGL-2M

PLASTIC VERSIONS:

1500N

MGL-1P

1000N

MGL-2P

Non Contact RFID Locking Switch **Type: MGL**

STAINLESS STEEL VERSIONS:

SALES NUMBER	UNIQUELY CODED (every switch - unique activation)	CABLE LENGTH
462001	MGL-1SS-U	5m
462002	MGL-1SS-U	10m
462003	MGL-1SS-U	QC-M12
	Replacement Actuator not available	

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
462004	MGL-1SS-M	5m
462005	MGL-1SS-M	10m
462006	MGL-1SS-M	QC-M12
462102	Replacement Actuator (Master Code)	

SALES NUMBER	UNIQUELY CODED (every switch - unique activation)	CABLE LENGTH
460001	MGL-2SS-U	5m
460002	MGL-2SS-U	10m
460003	MGL-2SS-U	QC-M12
	Replacement Actuator not available	

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
460004	MGL-2SS-M	5m
460005	MGL-2SS-M	10m
460006	MGL-2SS-M	QC-M12
460102	Replacement Actuator (Master Code)	

DIE-CAST METAL VERSIONS:

SALES NUMBER	UNIQUELY CODED (every switch - unique activation)	CABLE LENGTH
464001	MGL-1M-U	5m
464002	MGL-1M-U	10m
464003	MGL-1M-U	QC-M12
	Replacement Actuator not available	

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
464004	MGL-1M-M	5m
464005	MGL-1M-M	10m
464006	MGL-1M-M	QC-M12
464102	Replacement Actuator (Master Code)	

SALES NUMBER	UNIQUELY CODED (every switch - unique activation)	CABLE LENGTH
465001	MGL-2M-U	5m
465002	MGL-2M-U	10m
465003	MGL-2M-U	QC-M12
	Replacement Actuator not available	

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
465004	MGL-2M-M	5m
465005	MGL-2M-M	10m
465006	MGL-2M-M	QC-M12
465102	Replacement Actuator (Master Code)	

PLASTIC VERSIONS:

SALES NUMBER	UNIQUELY CODED (every switch - unique activation)	CABLE LENGTH
463001	MGL-1P-U	5m
463002	MGL-1P-U	10m
463003	MGL-1P-U	QC-M12
	Replacement Actuator not available	

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
463004	MGL-1P-M	5m
463005	MGL-1P-M	10m
463006	MGL-1P-M	QC-M12
463102	Replacement Actuator (Master Code)	

SALES NUMBER	UNIQUELY CODED (every switch - unique activation)	CABLE LENGTH
461001	MGL-2P-U	5m
461002	MGL-2P-U	10m
461003	MGL-2P-U	QC-M12
	Replacement Actuator not available	

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
461004	MGL-2P-M	5m
461005	MGL-2P-M	10m
461006	MGL-2P-M	QC-M12
461102	Replacement Actuator (Master Code)	

Ordering example: MGL-2P Uniquely Coded with 5m cable:
Order Part Number: 461001

Ordering example: MGL-2SS Master Coded with 5m cable:
Order Part Number: 460004

For all IDEM Switches the NC circuits are closed when the guard is closed and the Actuator present and power is applied to the solenoid.

Coded Non Contact Safety Interlock Switches

DESCRIPTION:

All IDEM Coded Non Contact Safety Switches have been designed to enable the conformance to EN60947-5-3 and be used as directed by ISO12100, ISO14121 and EN60204-1.

They have coded magnetic sensing which provides a wide sensing distance and provides a high tolerance to misalignment after sensing. They can be fitted behind stainless steel fittings and can operate from 4 directions even in extreme environments of temperature and moisture.

When used in combination with most Dual Channel Safety Monitoring Relays they can be used to provide up to PLe to ISO13849-1.

They offer a choice of high specification Plastic or Stainless Steel 316.

APPLICATION:

IDEM Coded Non Contact Safety Switches are designed to interlock hinged, sliding or removable guard doors.

They are specifically advantageous when :

(a) poor guard alignment exists
(b) anti tamper sensing is required
(c) high hygiene requirements exist, e.g. food industry hose down
(d) long life is required (no moving or touching parts)
(e) LED status indication is desirable

FEATURES:

Dual channel electronic safety output 2NC (1NO auxiliary optional)

Visual LED indication of switch status

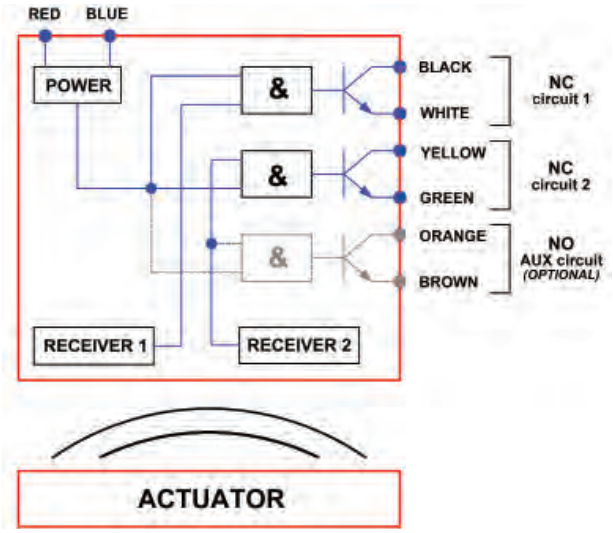
Enclosure Protected to IP67 or IP69K - wash down suitable

Conformance to EN60947-5-3

No moving parts to give high reliability and long life

Wide sensing distance up to 14mm

PRINCIPLE:



PLASTIC (HIGH SPECIFICATION POLYESTER) VERSIONS:

The Plastic **IDECODE** range have been developed for non contact guard door interlocking in the applications of general factory automation, packaging and some food processing industries.

Supplied with Screw Cap covers to prevent contamination from food deposits

MPC

Miniature industry standard design. 22mm fixing centres, available with Left or Right cable exit points.

SPC

Universal 22mm fixing centres.

LPC

European industry standard fitting. End cable exit.

CPC

Compact slim fitting housing. Suitable for fitting to applications where space is restricted.

WPC

Industry standard wide fitting.
Front face actuation for large guards.

RPC

M30 threaded body - easy to mount.

KPC

Industry standard interlock switch housing. Can be retrofitted in place of similar mechanical switches. Fixing centres 40mm.

Coded Non Contact Safety Interlock Switches

STAINLESS STEEL 316 VERSIONS:

The Stainless Steel 316 **HYGIECODE** range have been developed for non-contact guard door interlocking in the applications of Food Processing, Pharmaceutical, Packaging and Petro-Chemical Industries.

- Stainless Steel 316
- Can be high pressure hosed at high temperature - IP69K
- Mirror Polished Finish to Ra4
- Can be mounted on steel structures
- Suitable for CIP and SIP cleaning
- Wide 14mm sensing high tolerance to misalignment
- Can be high pressure hosed at high temperature (IP69K)

Designed in accordance with EHEDG guidelines for hygienic design (EHEDG European Hygienic Engineering & Design Group).

The housing designs, surface finish and styling means they can be used in almost any environments subject to high levels of cleaning following contamination from foreign particles.

They are offered with various types of mounting styles to cover different levels of food contact (as described by the EHEDG).

- Direct Contact Zone: The switch mounting is designed according to EHEDG hygienic guidelines and also fulfils the requirements of the splash zone.
- Splash Zone: The switch must be easy to clean and withstand the CIP and SIP cleaning processes found in the food industry (tested IP69K).

SMC

Universal 22mm fixing centres: suitable for food splash zones.

CMC

Compact slim housing: suitable for food splash zones. Ideal for where there are space restrictions.

LMC

European industry standard fitting: suitable for food splash zones.

WMC

Industry standard wide fitting: suitable for food splash zones. Front facing actuation.

SMC-F

Universal 22mm fixing centres.
Rear fixing - M4 tapped holes at rear of housing.
Suitable for food contact zones.

CMC-F

Compact slim housing.
Rear fixing - M4 tapped holes at rear of housing.
Suitable for food contact zones.

RMC

M30 thread: suitable for some food contact zones.
Circular body and actuator.

SMC-H

Universal 22mm fixing centres.
Through hole fixing - M4 clearance holes for front mounting by hexagon head bolts.
Suitable for food contact zones.

For SMC-H and MMC-H
Use hexagon head bolts for ease of cleaning.

MMC-H

Miniature industry standard design - through hole mounting on M4 clearance for front mounting by hexagon head bolts.
Suitable for food splash or food contact zones.

All types are available without LED for extremely harsh environments.
All Stainless Steel 316 switches are tested to ingress protection degree IP69K (high pressure hosing with detergent at 80C and 100psi).

IDECODE - Coded Non Contact **Type: MPC**

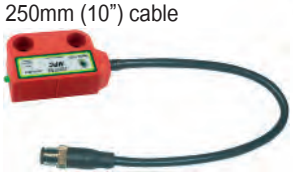
FEATURES:

Compact and robust fitting suitable for all small guard applications.
LED indication
Hygienic screw covers ensure suitability for Food Processing washdown
Cost-effective interlock solution
Wide sensing at 10mm
High specification polyester housing with integral back plate
Can be mounted unobtrusively in channels or behind doors
Left or right cable exit options available
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts

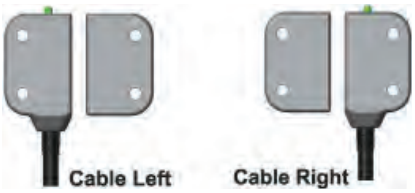
Coded Magnetic Actuation
Switching Tolerance up to 10mm
Will operate with most Safety Relays

Supplied with Screw Cap covers to prevent contamination from food deposits

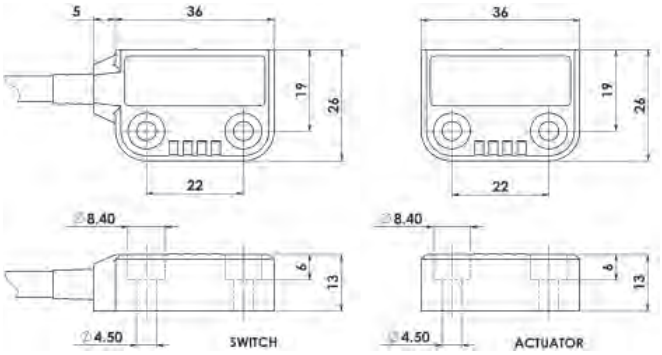
Quick Connect M12 versions fitted with 250mm (10") cable



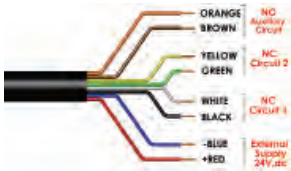
Left or Right Cable Exit Options available



DIMENSIONS:



Quick Connect M12 versions fitted with 250mm (10") cable



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

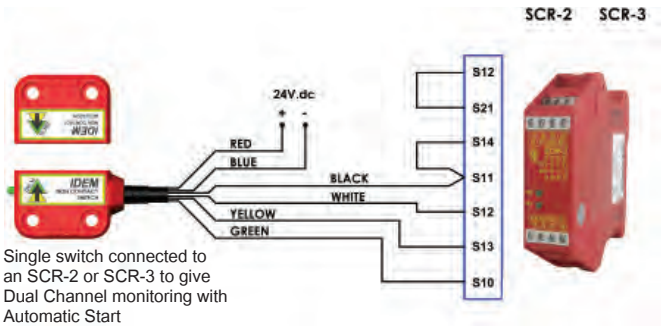
Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 12mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

CONNECTION EXAMPLE: CODED SWITCH



Single switch connected to an SCR-2 or SCR-3 to give Dual Channel monitoring with Automatic Start

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
114101	MPC Cable Right	2M	2NC
114102	MPC Cable Right	5M	2NC
114103	MPC Cable Right	10M	2NC
114104	MPC Cable Right	QC-M12*	2NC
114105	MPC Cable Right	2M	2NC 1NO
114106	MPC Cable Right	5M	2NC 1NO
114107	MPC Cable Right	10M	2NC 1NO
114108	MPC Cable Right	QC-M12*	2NC 1NO
114117	MPC Cable Right	2M	3NC
114118	MPC Cable Right	5M	3NC
114119	MPC Cable Right	10M	3NC
114120	MPC Cable Right	QC-M12*	3NC
114109	MPC Cable Left	2M	2NC
114110	MPC Cable Left	5M	2NC
114111	MPC Cable Left	10M	2NC
114112	MPC Cable Left	QC-M12*	2NC
114113	MPC Cable Left	2M	2NC 1NO
114114	MPC Cable Left	5M	2NC 1NO
114115	MPC Cable Left	10M	2NC 1NO
114116	MPC Cable Left	QC-M12*	2NC 1NO
114121	MPC Cable Left	2M	3NC
114122	MPC Cable Left	5M	3NC
114123	MPC Cable Left	10M	3NC
114124	MPC Cable Left	QC-M12*	3NC

*Other QC (Quick Connect) sizes available upon request.

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

EUROCODE - Coded Non Contact **Type: LPC**

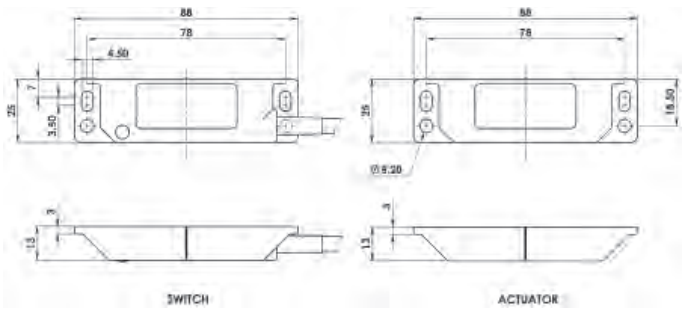
FEATURES:

Popular European fitting suitable for all industry applications
LED indication
Can be high pressure hosed at high temperature due to IP69K rating
Wide sensing at 14mm with high tolerance to misalignment
High specification polyester housing with integral back plate
Quick Connect versions available
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Magnet holding option available for use with small guards

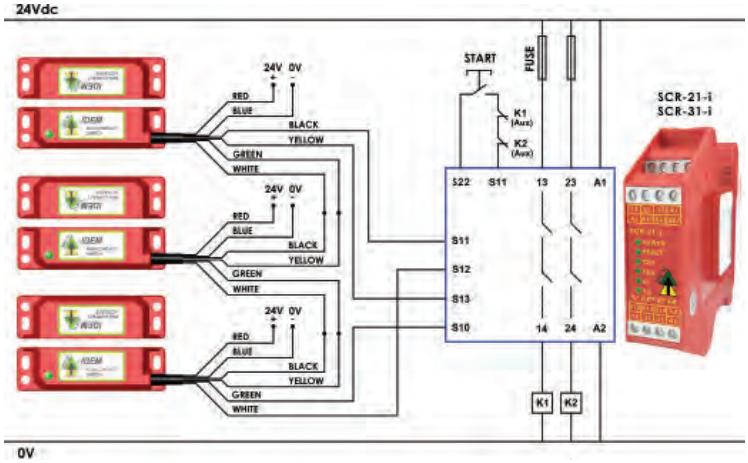
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

Quick Connect M12 versions fitted with 250mm (10") cable

DIMENSIONS:



CONNECTION EXAMPLE: CODED SWITCH



Three switches connected in series to an SCR-21-i or SCR-31-i to give
Dual Channel monitoring with monitored Manual Start and Contactor Feedback Check

Magnetic Holding versions

At 1mm setting gap: 10N
At 5mm setting gap: 5N

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
110001	Eurocode LPC	2M	2NC
110002	Eurocode LPC	5M	2NC
110003	Eurocode LPC	10M	2NC
110004	Eurocode LPC	QC-M12	2NC
110005	Eurocode LPC	2M	2NC 1NO
110006	Eurocode LPC	5M	2NC 1NO
110007	Eurocode LPC	10M	2NC 1NO
110008	Eurocode LPC	QC-M12	2NC 1NO
110070	Eurocode LPC	2M	3NC
110071	Eurocode LPC	5M	3NC
110072	Eurocode LPC	10M	3NC
110073	Eurocode LPC	QC-M12	3NC

For Magnetic Holding versions add 10N to Sales Number
Example: LPC 2NC 1NO 5m with Magnetic Holding Order: 110006-10N

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

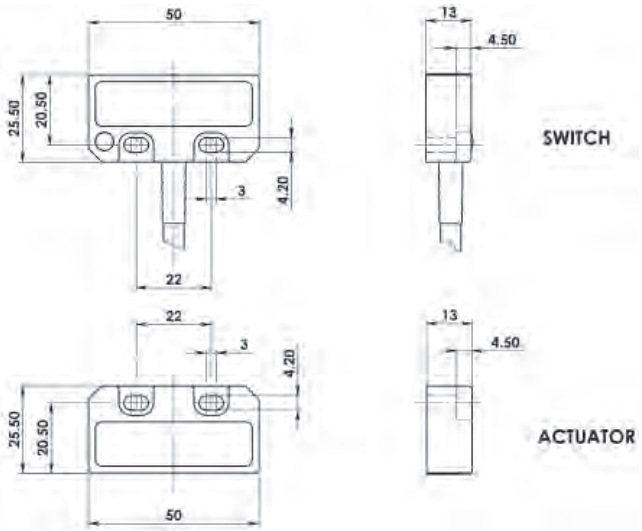
IDECODE - Coded Non Contact **Type: SPC**

FEATURES:

Universal fitting - established 22mm footprint suitable for most applications
Withstands environments where high humidity or hose down is required
High specification and durable polyester housing
Wide 14mm sensing with high tolerance to misalignment
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

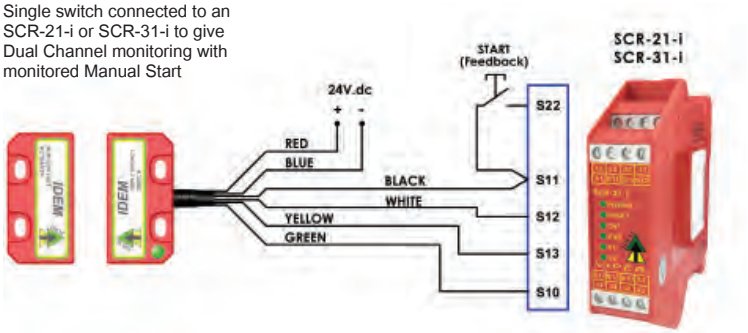
DIMENSIONS:



Quick Connect M12 versions fitted with 250mm (10") cable

CONNECTION EXAMPLE: CODED SWITCH

Single switch connected to an SCR-21-i or SCR-31-i to give Dual Channel monitoring with monitored Manual Start



140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
111001	Idecode SPC	2M	2NC
111002	Idecode SPC	5M	2NC
111003	Idecode SPC	10M	2NC
111004	Idecode SPC	QC-M12	2NC
111005	Idecode SPC	2M	2NC 1NO
111006	Idecode SPC	5M	2NC 1NO
111007	Idecode SPC	10M	2NC 1NO
111008	Idecode SPC	QC-M12	2NC 1NO
111105	Idecode SPC	2M	3NC
111106	Idecode SPC	5M	3NC
111107	Idecode SPC	10M	3NC
111108	Idecode SPC	QC-M12	3NC

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

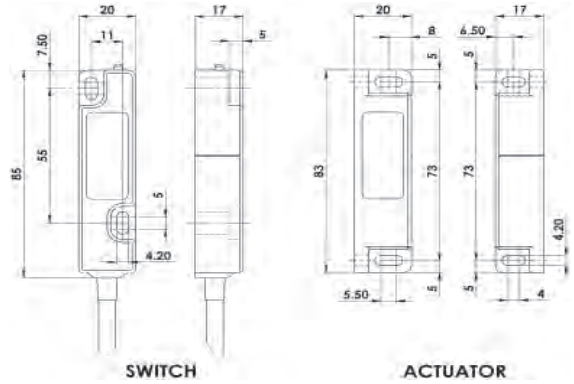
IDECODE - Coded Non Contact **Type: CPC**

FEATURES:

Designed with a slim fitting making it suitable for all industry applications
Easy to install within narrow frame constructions
High specification and durable polyester housing
Wide 14mm sensing with high tolerance to misalignment
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

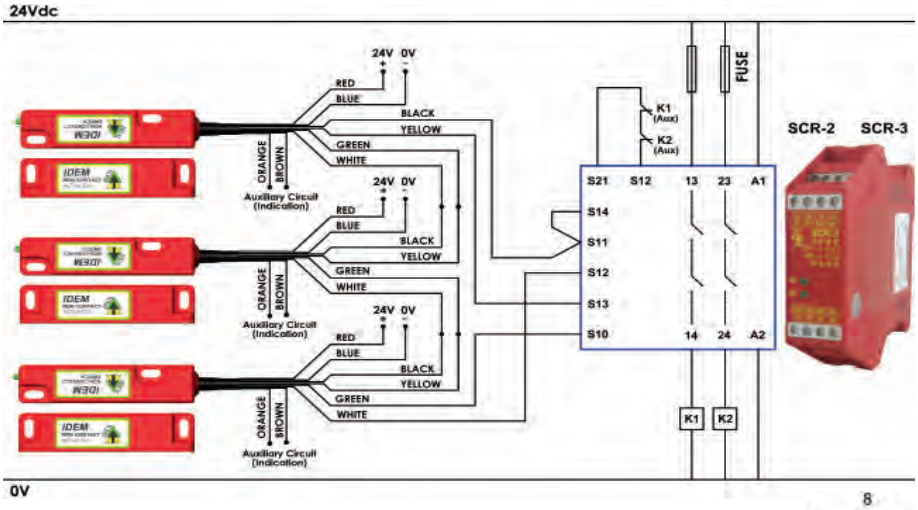
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

DIMENSIONS:



Quick Connect M12 versions fitted with 250mm (10") cable

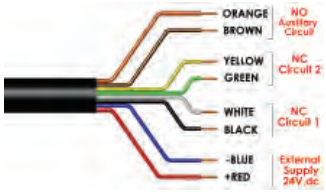
CONNECTION EXAMPLE: CODED SWITCH



Three switches connected in series to an SCR-2 or SCR-3 to give Dual Channel monitoring with automatic start and contactor feedback check.

Optional auxiliary circuits provide for remote signalling from each switch.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way



Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening Torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
115001	Idecode CPC	2M	2NC
115002	Idecode CPC	5M	2NC
115003	Idecode CPC	10M	2NC
115004	Idecode CPC	QC-M12	2NC
115005	Idecode CPC	2M	2NC 1NO
115006	Idecode CPC	5M	2NC 1NO
115007	Idecode CPC	10M	2NC 1NO
115008	Idecode CPC	QC-M12	2NC 1NO

AVAILABLE WITHOUT LED IF REQUIRED.

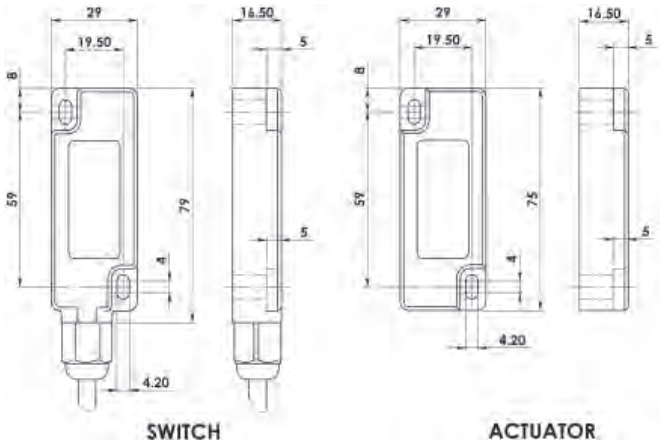
IDECODE - Coded Non Contact **Type: WPC**

FEATURES:

Designed with a slim fitting making it suitable for all industry applications
Wide 14mm sensing with high tolerance to misalignment
High specification and durable polyester housing
Wide 14mm sensing with high tolerance to misalignment
LED indication - no moving parts - survives shock and vibration
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

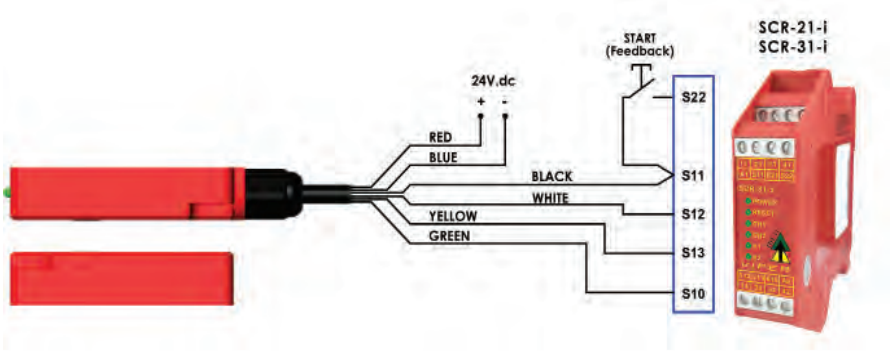
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

DIMENSIONS:



Quick Connect M12 versions fitted with 250mm (10") cable

CONNECTION EXAMPLE: CODED SWITCH



One switch connected to an SCR-21-i or SCR-31-i to give Dual Channel monitoring with manual start and contactor feedback check.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
112013	Idecode WPC	2M	2NC
112014	Idecode WPC	5M	2NC
112015	Idecode WPC	10M	2NC
112016	Idecode WPC	QC-M12	2NC
112017	Idecode WPC	2M	2NC 1NO
112018	Idecode WPC	5M	2NC 1NO
112019	Idecode WPC	10M	2NC 1NO
112020	Idecode WPC	QC-M12	2NC 1NO
112105	Idecode WPC	2M	3NC
112106	Idecode WPC	5M	3NC
112107	Idecode WPC	10M	3NC
112108	Idecode WPC	QC-M12	3NC

AVAILABLE WITHOUT LED IF REQUIRED.

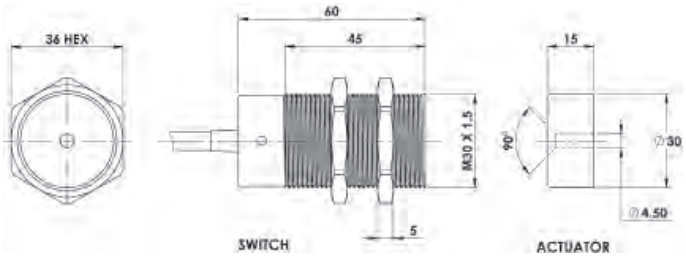
IDECODE - Coded Non Contact **Type: RPC**

FEATURES:

Cylindrical fitting making it suitable for all industry applications
Easy to install with an M30 threaded body - easy to set
Robust and durable polyester housing - suitable for harsh environments
Wide 10mm sensing
Can be flush mounted
LED indication
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

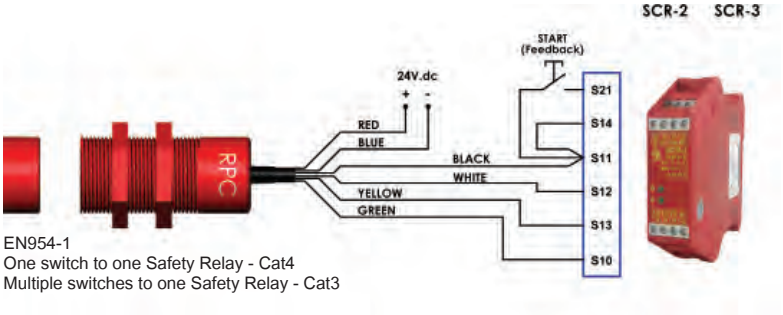
Coded Magnetic Actuation
Switching Tolerance up to 10mm
Will operate with most Safety Relays

DIMENSIONS:

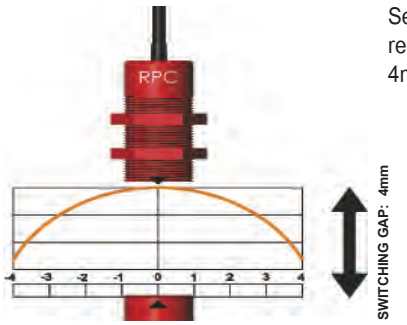


Quick Connect M12 versions fitted with 250mm (10") cable

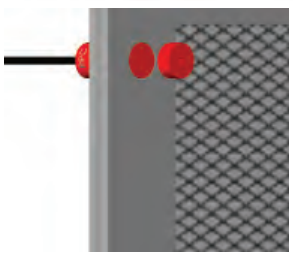
CONNECTION EXAMPLE: CODED SWITCH



EN954-1
One switch to one Safety Relay - Cat4
Multiple switches to one Safety Relay - Cat3



Sensitivity at recommended 4mm setting



Can be flush mounted

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2 +ve	200mA Max. 24Vdc
6	Green	Safety NC2 -ve	
7	Black	Safety NC1 +ve	200mA Max. 24Vdc
1	White	Safety NC1 -ve	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 12mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
116001	Idecode RPC	2M	2NC
116002	Idecode RPC	5M	2NC
116003	Idecode RPC	10M	2NC
116004	Idecode RPC	QC-M12	2NC
116005	Idecode RPC	2M	2NC 1NO
116006	Idecode RPC	5M	2NC 1NO
116007	Idecode RPC	10M	2NC 1NO
116008	Idecode RPC	QC-M12	2NC 1NO
116105	Idecode RPC	2M	3NC
116106	Idecode RPC	5M	3NC
116107	Idecode RPC	10M	3NC
116108	Idecode RPC	QC-M12	3NC

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

KOBRACODE - Coded Non Contact **Type: KPC**

FEATURES:

Industry housing shape 52mm wide 98mm long 40mm fixing
2NC 1NO semi conductor outputs for connection to safety relay
Visual LED indication of switch status
Fully encapsulated sealing and pre-wired 2m, 5m or 10m cable
Wide 10mm sensing with high tolerance to misalignment
M12 8 Way Quick Connect version available (flying lead 150mm)

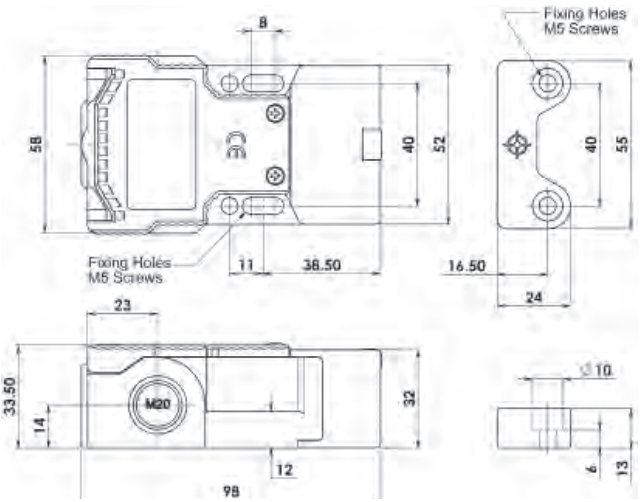
APPLICATION:

IDEM KPC Coded Non Contact switches have been designed to interlock hinged, sliding or removable guard doors.
They have an industry standard fixing and are specifically advantageous where:

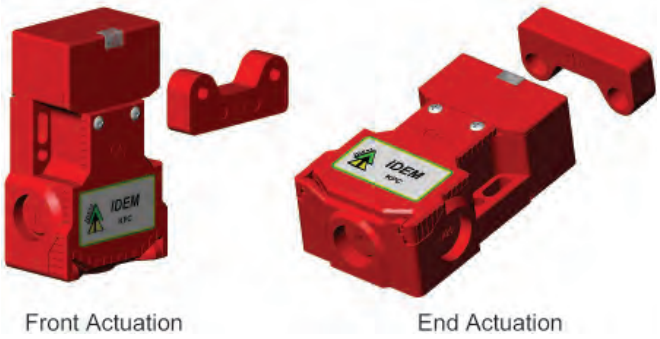
(a) severe guard alignment exists using traditional tongue type versions
(b) long mechanical life is required (no moving or touching parts)

When used in combination with Dual Channel Safety Relays they can be used to provide up to PLe ISO13849-1 SIL3 EN62061.

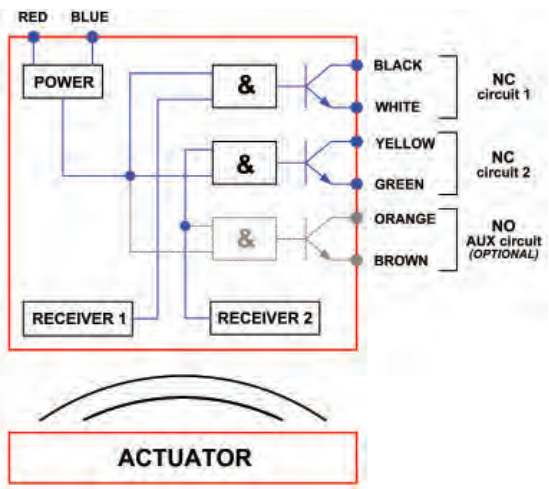
DIMENSIONS:



Coded Magnetic Actuation
Switching Tolerance up to 10mm
Will operate with most Safety Relays



SENSING PRINCIPLE:



Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM5 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CONDUIT OR CABLE EXIT	CIRCUITS
120001	Kobracode KPC	Pre-wired 2m End	2NC 1NO
120002	Kobracode KPC	Pre-wired 5m End	2NC 1NO
120003	Kobracode KPC	Pre-wired 10m End	2NC 1NO
120004	Kobracode KPC	Pre-wired 2m Left	2NC 1NO
120005	Kobracode KPC	Pre-wired 5m Left	2NC 1NO
120006	Kobracode KPC	Pre-wired 10m Left	2NC 1NO
120007	Kobracode KPC	Pre-wired 2m Right	2NC 1NO
120008	Kobracode KPC	Pre-wired 5m Right	2NC 1NO
120009	Kobracode KPC	Pre-wired 10m Right	2NC 1NO
120012	Kobracode KPC	QC M12 8 Way 150mm End	2NC 1NO

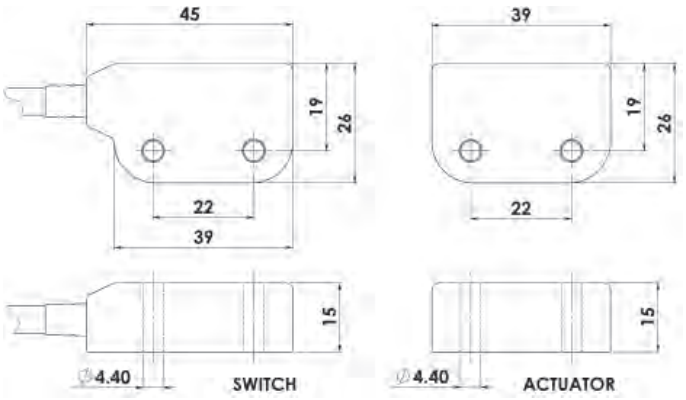
HYGIECODE - Coded Non Contact **Type: MMC-H**

FEATURES:

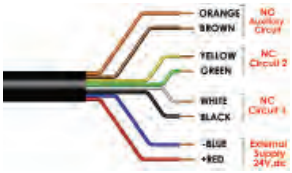
Compact and robust fitting suitable for all small guard applications
Through hole fixing to enable front mounting
No food trap areas
Suitable for CIP SIP cleaning -
Food Contact or Splash Zones EHEDG guidelines
LED indication
Cost-effective interlock solution
Wide sensing at 10mm
Can be mounted unobtrusively in channels or behind doors
Left or right cable exit options available
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Stainless Steel 316 housing - mirror polished finished to Ra4

Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 10mm
Will operate with most Safety Relays

DIMENSIONS:

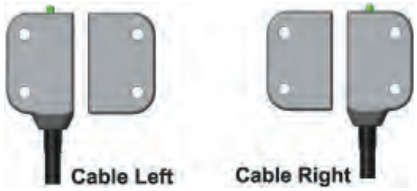


Quick Connect M12 versions fitted with 250mm (10") cable



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

Left or Right Cable Exit Options available



140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6×10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 12mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 Mirror Polished Finish (Ra4)
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors $0.25mm^2$
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
131101	MMC-H Cable Right	2M	2NC
131102	MMC-H Cable Right	5M	2NC
131103	MMC-H Cable Right	10M	2NC
131104	MMC-H Cable Right	QC-M12*	2NC
131105	MMC-H Cable Right	2M	2NC 1NO
131106	MMC-H Cable Right	5M	2NC 1NO
131107	MMC-H Cable Right	10M	2NC 1NO
131108	MMC-H Cable Right	QC-M12*	2NC 1NO
131109	MMC-H Cable Right	2M	3NC
131110	MMC-H Cable Right	5M	3NC
131111	MMC-H Cable Right	10M	3NC
131112	MMC-H Cable Left	QC-M12*	3NC
131113	MMC-H Cable Left	2M	2NC
131114	MMC-H Cable Left	5M	2NC
131115	MMC-H Cable Left	10M	2NC
131116	MMC-H Cable Left	QC-M12*	2NC
131117	MMC-H Cable Left	2M	2NC 1NO
131118	MMC-H Cable Left	5M	2NC 1NO
131119	MMC-H Cable Left	10M	2NC 1NO
131120	MMC-H Cable Left	QC-M12*	2NC 1NO
131121	MMC-H Cable Left	2M	3NC
131122	MMC-H Cable Left	5M	3NC
131123	MMC-H Cable Left	10M	3NC
131124	MMC-H Cable Left	QC-M12*	3NC

*Other QC (Quick Connect) sizes available upon request.

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

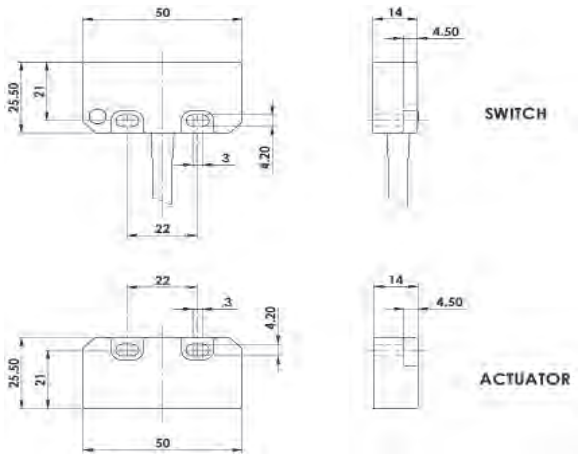
HYGIECODE - Coded Non Contact **Type: SMC**

FEATURES:

Robust Stainless Steel 316 enclosure designed to survive the tough environments of Food Processing and Pharmaceutical industries
LED indication
Survives high pressure hosing at high temperature
Wide 14mm sensing with high tolerance to misalignment
Universal fitting - 22mm footprint suitable for most applications
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

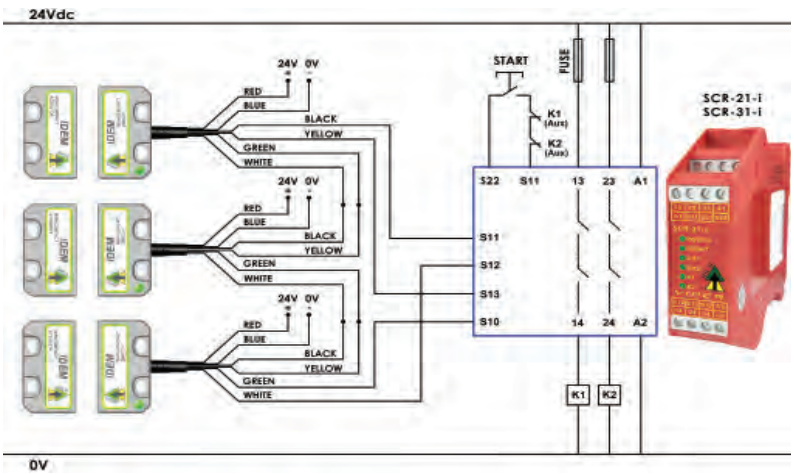
Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

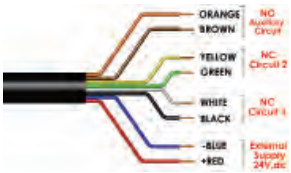
DIMENSIONS:



Quick Connect M12 versions fitted with 250mm (10") cable

CONNECTION EXAMPLE: CODED SWITCHES





Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
139001	Hygiecode SMC	2M	2NC
139002	Hygiecode SMC	5M	2NC
139003	Hygiecode SMC	10M	2NC
139004	Hygiecode SMC	QC-M12	2NC
139005	Hygiecode SMC	2M	2NC 1NO
139006	Hygiecode SMC	5M	2NC 1NO
139007	Hygiecode SMC	10M	2NC 1NO
139008	Hygiecode SMC	QC-M12	2NC 1NO
139105	Hygiecode SMC	2M	3NC
139106	Hygiecode SMC	5M	3NC
139107	Hygiecode SMC	10M	3NC
139108	Hygiecode SMC	QC-M12	3NC

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

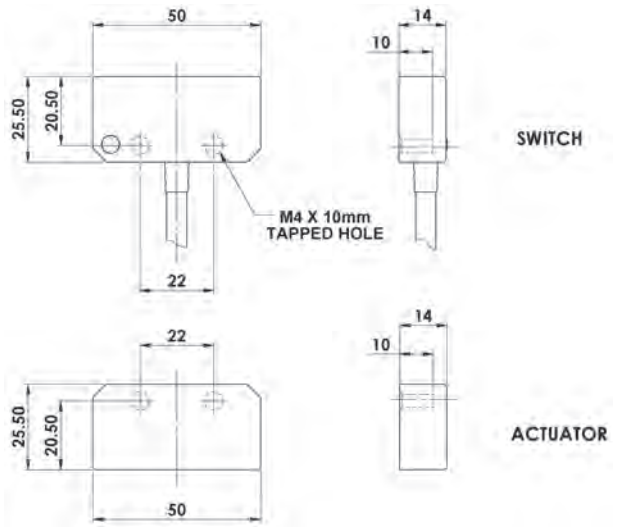
HYGIECODE - Coded Non Contact **Type: SMC-F**

FEATURES:

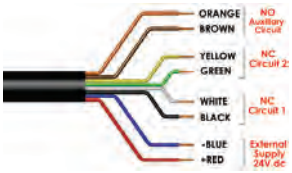
Specifically designed for Food Processing applications
Suitable for CIP and SIP cleaning - mounting holes at rear - no food traps
Wide 14mm sensing with high tolerance to misalignment
Universal housing - 22mm fixing hole centre - 50mm wide body
Can be high pressure hosed at high temperature - IP69K rating
Rear fixing with 2 x M4 tapped holes
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

DIMENSIONS:



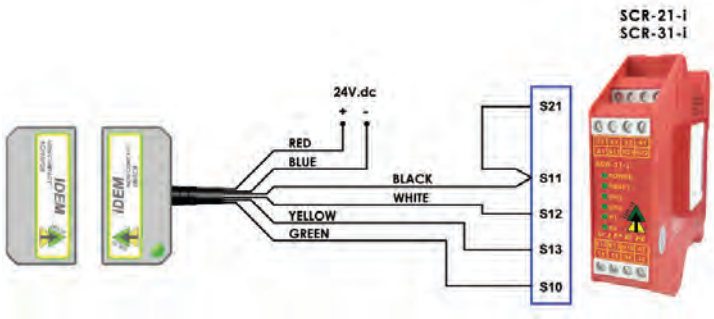
Quick Connect M12 versions fitted with 250mm (10") cable



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

CONNECTION EXAMPLE: CODED SWITCHES



Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
137001	Hygiecode SMC-F	2M	2NC
137002	Hygiecode SMC-F	5M	2NC
137003	Hygiecode SMC-F	10M	2NC
137004	Hygiecode SMC-F	QC-M12	2NC
137005	Hygiecode SMC-F	2M	2NC 1NO
137006	Hygiecode SMC-F	5M	2NC 1NO
137007	Hygiecode SMC-F	10M	2NC 1NO
137008	Hygiecode SMC-F	QC-M12	2NC 1NO
137105	Hygiecode SMC-F	2M	3NC
137106	Hygiecode SMC-F	5M	3NC
137107	Hygiecode SMC-F	10M	3NC
137108	Hygiecode SMC-F	QC-M12	3NC

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

HYGIECODE - Coded Non Contact **Type: SMC-H**

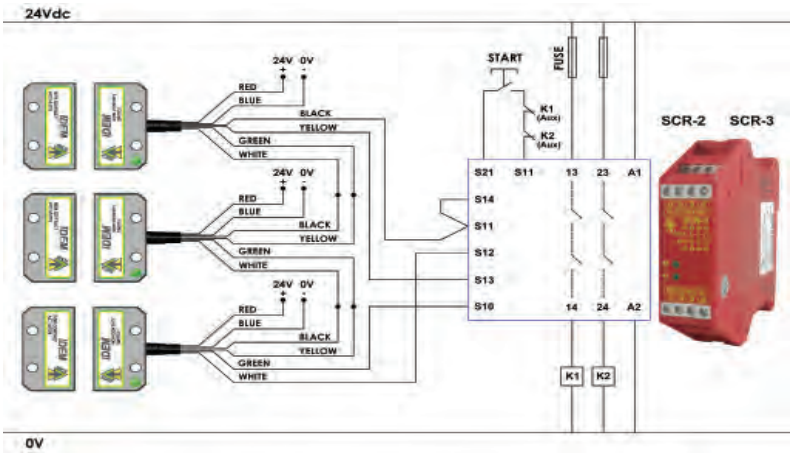
FEATURES:

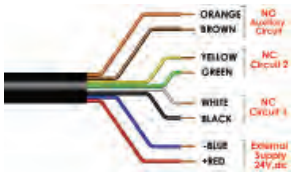
Designed for Food Processing and Pharmaceutical applications
Through hole fixing for front mounting by hexagon bolts - no food trap areas
Suitable for CIP and SIP cleaning -
Food Contact or Splash Zones EHEDG Guidelines
Wide 14mm sensing with high tolerance to misalignment
Universal fitting, established 22mm fixing footprint - suits most applications
Can be high pressure hosed at high temperature
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

Use Hexagon Head Bolts for ease of cleaning

CONNECTION EXAMPLE: CODED SWITCHES





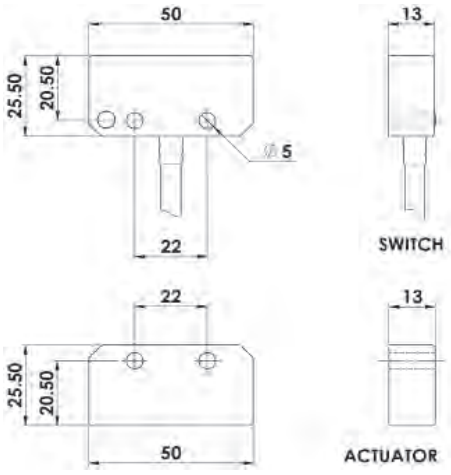
Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance (Target to Target)	Sao 10mm Close Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

DIMENSIONS:



SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
132001	Hygiecode SMC-H	2M	2NC
132002	Hygiecode SMC-H	5M	2NC
132003	Hygiecode SMC-H	10M	2NC
132004	Hygiecode SMC-H	QC-M12	2NC
132005	Hygiecode SMC-H	2M	2NC 1NO
132006	Hygiecode SMC-H	5M	2NC 1NO
132007	Hygiecode SMC-H	10M	2NC 1NO
132008	Hygiecode SMC-H	QC-M12	2NC 1NO
132105	Hygiecode SMC-H	2M	3NC
132106	Hygiecode SMC-H	5M	3NC
132107	Hygiecode SMC-H	10M	3NC
132108	Hygiecode SMC-H	QC-M12	3NC

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

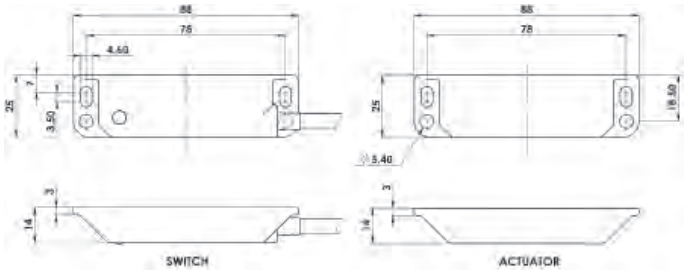
HYGIECODE - Coded Non Contact **Type: LMC**

FEATURES:

Specifically designed for Food Processing applications
Suitable for CIP cleaning - Food Splash Zones EHEDG Guidelines
Wide 14mm sensing with high tolerance to misalignment
LED indication
Can be high pressure hosed with detergent at high temperature
Magnetic holding option available for use with small guards
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

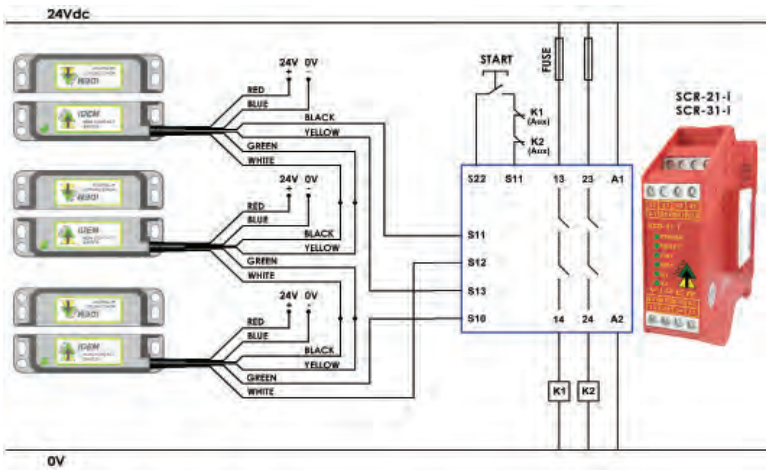
Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

DIMENSIONS:



Quick Connect M12 versions fitted with 250mm (10") cable

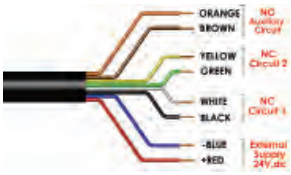
CONNECTION EXAMPLE: CODED SWITCHES



Three 2NC version switches connected in series to an SCR-21-i or SCR-31-i to give Dual Channel monitoring with Manual Start and Contactor Feedback Check

Magnetic Holding versions:

At 1mm setting gap: 10N
At 5mm setting gap: 5N



140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance (Target to Target)	Sao 10mm Close Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
133001	Hygiecode LMC	2M	2NC
133002	Hygiecode LMC	5M	2NC
133003	Hygiecode LMC	10M	2NC
133004	Hygiecode LMC	QC-M12	2NC
133005	Hygiecode LMC	2M	2NC 1NO
133006	Hygiecode LMC	5M	2NC 1NO
133007	Hygiecode LMC	10M	2NC 1NO
133008	Hygiecode LMC	QC-M12	2NC 1NO
133017	Hygiecode LMC	2M	3NC
133018	Hygiecode LMC	5M	3NC
133019	Hygiecode LMC	10M	3NC
133020	Hygiecode LMC	QC-M12	3NC

For Magnetic Holding versions add 10N to Sales Number
Example: LMC 2NC 10m with Magnetic Holding Order: 133003-10N

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

HYGIECODE - Coded Non Contact **Type: CMC**

FEATURES:

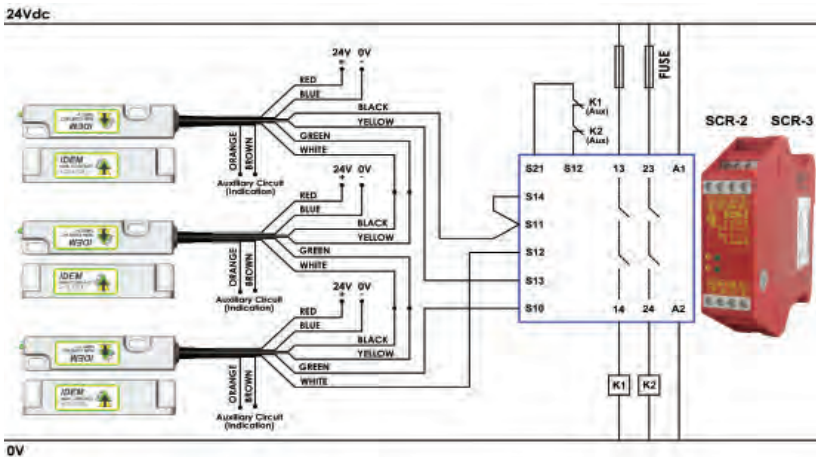
Designed for Food Processing and Pharmaceutical applications
Suitable for CIP and SIP cleaning -
Food Splash Zones EHEDG guidelines
Wide 14mm sensing with high tolerance to misalignment
Industry standard slim 20mm wide housing - fits in narrow channels
Can be high pressure hosed at high temperature - IP69K
LED indication
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts

Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

Quick Connect M12 versions fitted with 250mm (10") cable

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

CONNECTION EXAMPLE: CODED SWITCHES



Three switches connected in series to an SCR-2 or SCR-3 to give Dual Channel monitoring with Auto Start and Contactor Feedback Check. Optional auxiliary circuits provide for remove signalling from each switch.

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2 +ve	200mA Max. 24Vdc
6	Green	Safety NC2 -ve	
7	Black	Safety NC1 +ve	200mA Max. 24Vdc
1	White	Safety NC1 -ve	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

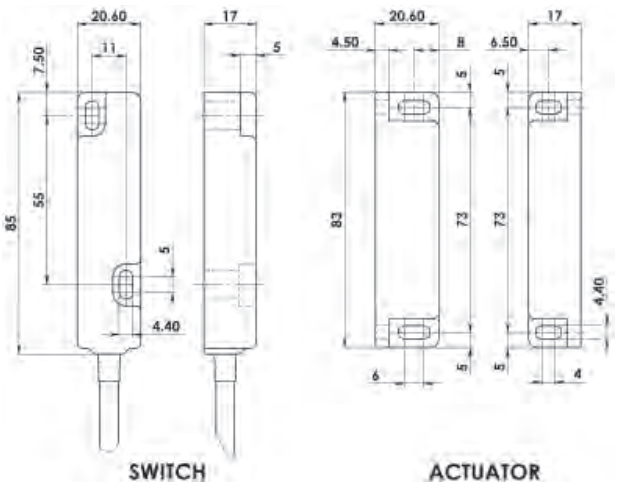
Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

DIMENSIONS:



SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
138001	Hygiecode CMC	2M	2NC
138002	Hygiecode CMC	5M	2NC
138003	Hygiecode CMC	10M	2NC
138004	Hygiecode CMC	QC-M12	2NC
138005	Hygiecode CMC	2M	2NC 1NO
138006	Hygiecode CMC	5M	2NC 1NO
138007	Hygiecode CMC	10M	2NC 1NO
138008	Hygiecode CMC	QC-M12	2NC 1NO
138105	Hygiecode CMC	2M	3NC
138106	Hygiecode CMC	5M	3NC
138107	Hygiecode CMC	10M	3NC
138108	Hygiecode CMC	QC-M12	3NC

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

HYGIECODE - Coded Non Contact **Type: CMC-F**

FEATURES:

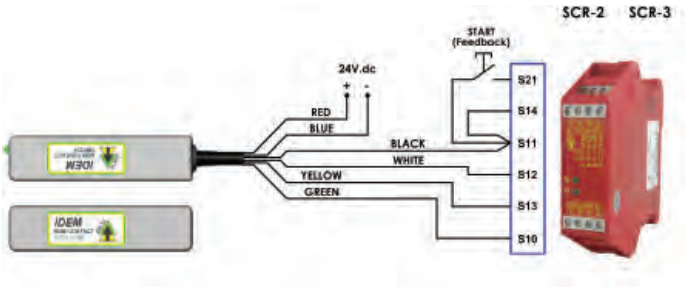
Specifically designed for Food Processing applications -
Stainless Steel 316 Mirror Polished finish (Ra4)
Suitable for CIP and SIP cleaning
Mounting holes are at the rear therefore creating no Food Traps
Suitable for Food Contact Zones - EHEDG guidelines
Slim fixing can be fitted in narrow channels
Wide 14mm sensing with high tolerance to misalignment
Can be high pressure hosed at high temperature - IP69K
LED indication
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect version available

Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

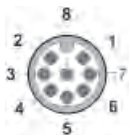
Quick Connect M12 versions fitted with 250mm (10") cable

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

CONNECTION EXAMPLE: CODED SWITCHES



One switch connected to an SCR-2 or SCR-3 to give Dual Channel monitoring with Manual Start.



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

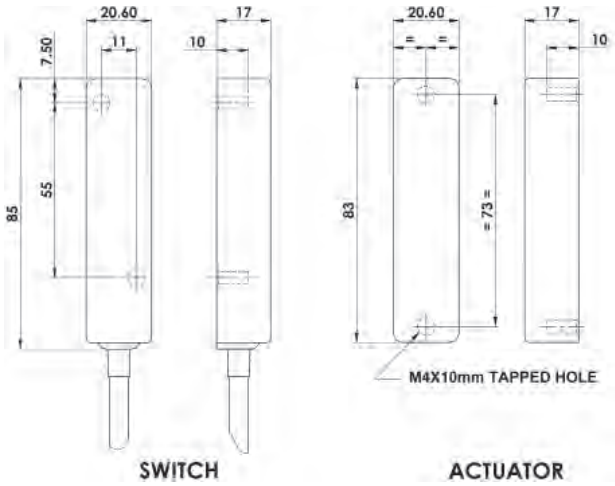
Standards: ISO14119) EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

DIMENSIONS:



SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
135001	Hygiecode CMC-F	2M	2NC
135002	Hygiecode CMC-F	5M	2NC
135003	Hygiecode CMC-F	10M	2NC
135004	Hygiecode CMC-F	QC-M12	2NC
135005	Hygiecode CMC-F	2M	2NC 1NO
135006	Hygiecode CMC-F	5M	2NC 1NO
135007	Hygiecode CMC-F	10M	2NC 1NO
135008	Hygiecode CMC-F	QC-M12	2NC 1NO
135105	Hygiecode CMC-F	2M	3NC
135106	Hygiecode CMC-F	5M	3NC
135107	Hygiecode CMC-F	10M	3NC
135108	Hygiecode CMC-F	QC-M12	3NC

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

HYGIECODE - Coded Non Contact **Type: WMC**

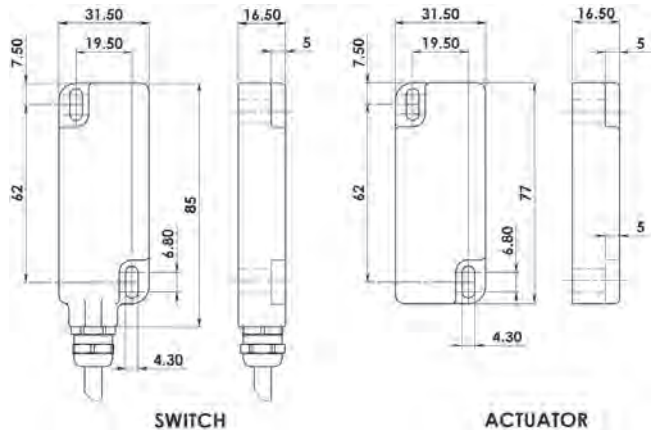
FEATURES:

Specifically designed for Food Processing applications -
Stainless Steel 316 Housing Mirror Polished finish (Ra4)
Robust 32mm wide housing, no moving parts - survives shock and vibration
Can be high pressure hosed at high temperature - IP69K
Wide 14mm sensing with high tolerance to misalignment
Suitable for CIP and SIP cleaning -
Food Splash Zones EHEDG guidelines
LED indication
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts

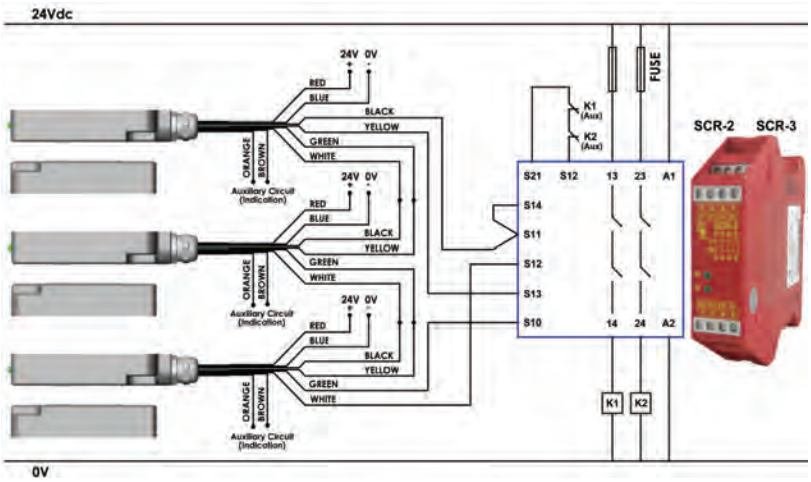
Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

Quick Connect M12 versions fitted with 250mm (10") cable

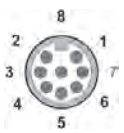
DIMENSIONS:

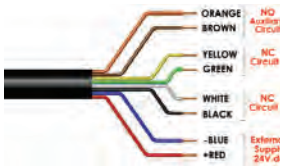


CONNECTION EXAMPLE: CODED SWITCHES



Three switches connected in series to an SCR-2 or SCR-3 to give Dual Channel monitoring with Automatic Start and Contactor Feedback Check. Optional auxiliary circuits provide for remove signalling from each switch.





Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
136013	Hygiecode WMC	2M	2NC
136014	Hygiecode WMC	5M	2NC
136015	Hygiecode WMC	10M	2NC
136016	Hygiecode WMC	QC-M12	2NC
136017	Hygiecode WMC	2M	2NC 1NO
136018	Hygiecode WMC	5M	2NC 1NO
136019	Hygiecode WMC	10M	2NC 1NO
136020	Hygiecode WMC	QC-M12	2NC 1NO

AVAILABLE WITHOUT LED IF REQUIRED.

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

HYGIECODE - Coded Non Contact **Type: RMC**

FEATURES:

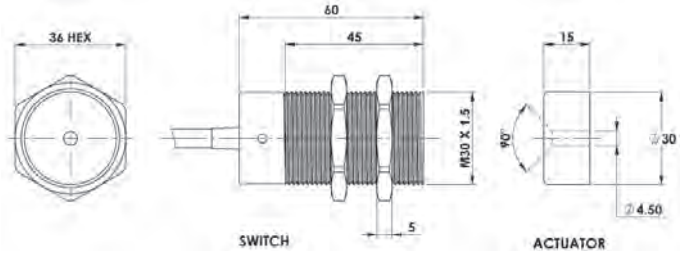
Cylindrical fitting - suitable for industry applications
Easy to install - M30 threaded body - easy to set
Wide 10mm sensing - low hysterisis - no moving parts
Suitable for harsh environments of Food Processing and Packaging
CIP and SIP cleaning - Food Splash Zones EHEDG guidelines
Can be flush mounted - Solid Stainless Steel 316 housing
LED indication
Can be high pressure hosed at high temperature - IP69K
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

Stainless Steel 316 Housing mirror polished (Ra4)
Coded Magnetic Actuation
Switching Tolerance up to 10mm
Will operate with most Safety Relays

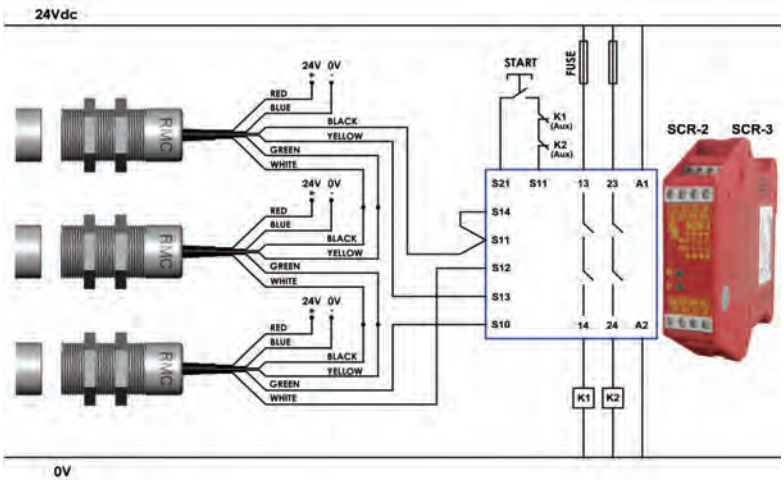
IP69K

Quick Connect M12 versions fitted with 250mm (10") cable

DIMENSIONS:



CONNECTION EXAMPLE: CODED SWITCHES



Three switches connected in series to an SCR-2 or SCR-3 to give Dual Channel guard monitoring with Manual Start and Contactor Feedback Check.

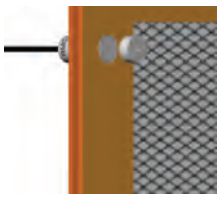
140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13489-1 EN62061 UL508

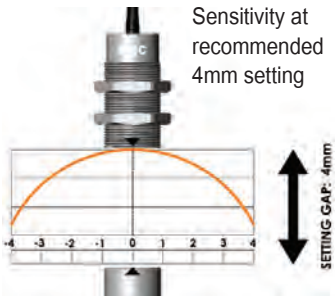
Safety Classification and Reliability Data:

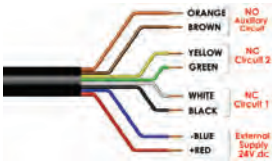
ISO13849-1	Up to PLe Category 4
PFHd	2.6 x 10^{-10}
Proof Test Interval (Life)	20 years
MTTFd	866 years
Safety Channel 1 NC	24Vdc 0.2A Max. Rating
Safety Channel 2 NC	24Vdc 0.2A Max. Rating
Safety Channel 3 NO	24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.



Can be flush mounted





Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2 +ve	200mA Max. 24Vdc
6	Green	Safety NC2 -ve	
7	Black	Safety NC1 +ve	200mA Max. 24Vdc
1	White	Safety NC1 -ve	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
134001	Hygiecode RMC	2M	2NC
134002	Hygiecode RMC	5M	2NC
134003	Hygiecode RMC	10M	2NC
134004	Hygiecode RMC	QC-M12	2NC
134005	Hygiecode RMC	2M	2NC 1NO
134006	Hygiecode RMC	5M	2NC 1NO
134007	Hygiecode RMC	10M	2NC 1NO
134008	Hygiecode RMC	QC-M12	2NC 1NO
134105	Hygiecode RMC	2M	3NC
134106	Hygiecode RMC	5M	3NC
134107	Hygiecode RMC	10M	3NC
134108	Hygiecode RMC	QC-M12	3NC

Note: 2NC 1NO versions have 2NC Safety and 1NO Auxiliary Circuits
3NC versions have 2NC Safety and 1NC Auxiliary Circuits
AVAILABLE WITHOUT LED IF REQUIRED.

Magnetic Non Contact Safety Interlock Switches

OPERATION:

All IDEM Magnetic Non Contact Safety Switches are designed to conform to EN60947-5-3 and can be used as directed by ISO12100, ISO14121 and EN60204-1.

They have magnetic sensing which provides a wide (>12mm) sensing distance and provides high tolerance to misalignment after sensing.

They can operate from 4 directions even in extreme environments of temperature and moisture.

They have volt free high power switching capability (either 1A or 2A ac/dc) and can be used independently to switch low risk applications, or connect to a Safety Relay to provide higher safety levels.

APPLICATION:

IDEM Magnetic Non Contact Safety Switches are designed to interlock hinged, sliding or removable guard doors.
They are specifically advantageous when:

(a) Poor guard alignment exists and a wide tolerance to misalignment is a requirement.
(b) High levels of hygiene is a requirement, e.g. high pressure chemical or water hosing in the food industry environment.
(c) Environments where high switching capacity is a requirement.

When used in combination with Dual Channel Safety Relays they can be used to provide up to PLe/Category 4 to ISO13849-1.

FEATURES:

- Magnetic High Power Switching up to 230Vac 2A
- Dual channel safety output 2NC (1NO auxiliary optional)
- Wide switching distance up to 12mm
- High tolerance to guard misalignment
- Enclosure protection to IP67 or IP69K
- Conformance to EN60947-5-3
- Choice of miniature, compact, wide or barrel type housings
- Choice of Plastic or Stainless Steel 316 (Food Industry compatible)
- High temperature stability
- Resistance to many organic and inorganic chemicals
- Resistant to high temperature hosing and detergent washdown
- Volt free contacts - up to 230Vac 2A and 24Vdc 2A (internally fused)

PLASTIC (high specification Polyester) Versions:

The Plastic **IDEMAG** Range have been developed for non-contact guard door interlocking in the applications of general factory automation, packaging and some food processing industries.

Supplied with Screw Cap covers to prevent contamination from food deposits

MPR

Miniature industry standard design.
22mm fixing centres, available with Left or Right cable exit points.

SPR

Universal 22mm fixing centres.

LPR

European industry standard fitting.
End cable exit point.

WPR

Industry standard wide fitting.
Front face actuation for large guards.

CPR

Compact slim fitting housing - making it suitable for fitting to applications where space is limited.

RPR

M30 threaded body - easy to mount.

Magnetic Non Contact Safety Interlock Switches

STAINLESS STEEL 316 VERSIONS:

The Stainless Steel 316 **HYGIEMAG** range has been developed for non-contact guard door interlocking in the applications of Food Processing, Pharmaceutical, Packaging and Petro-Chemical Industries.

- Stainless Steel 316
- Can be high pressure hosed at high temperature - IP69K
- Mirror Polished Finish to Ra4
- Suitable for CIP and SIP cleaning
- Wide 12mm sensing high tolerance to misalignment
- Can be mounted on Steel Structures

Designed in accordance with EHEDG guidelines for hygienic design (EHEDG European Hygienic Engineering & Design Group)

The housing designs, surface finish and styling means they can be used in almost any environments subject to high levels of cleaning following contamination from foreign particles.

They are offered with various types of mounting styles to cover different levels of food contact (as described by the EHEDG).

- Direct Contact Zone: The switch mounting is designed according to EHEDG hygienic guidelines and also fulfils the requirements of the splash zone.
- Splash Zone: The switch must be easy to clean and withstand the CIP and SIP cleaning processes found in the food industry (tested IP69K).

SMR

Universal 22mm fixing centres: suitable for food splash zones

CMR

Compact slim housing: suitable for food splash zones. Ideal for where there are space restrictions.

LMR

European industry standard fitting: suitable for food splash zones.

WMR

Industry standard wide fitting: suitable for food splash zones. Front facing actuation.

SMR-F

Universal 22mm fixing centres.
Rear fixing - M4 tapped holes at rear of housing.
Suitable for food contact zones.

CMR-F

Compact slim housing.
Rear fixing - M4 tapped holes at rear of housing.
Suitable for food contact zones.

RMR

M30 thread: suitable for some food contact zones.
Circular body and actuator.

SMR-H

Universal 22mm fixing centres.
Through hole fixing - M4 clearance holes for front mounting by hexagon head bolts.
Suitable for food splash or food contact zones.

For SMR-H and MMR-H
Use hexagon head bolts for ease of cleaning.

MMR-H

Miniature industry standard design - 22mm fixing centres with through hole mounting on M4 clearance for front mounting by hexagon head bolts.
Suitable for food splash or food contact zones.

All Stainless Steel 316 switches are tested to ingress protection degree IP69K (high pressure hosing with detergent at 80C and 100psi).

IDEMAG - Magnetic Non Contact **Type: MPR**

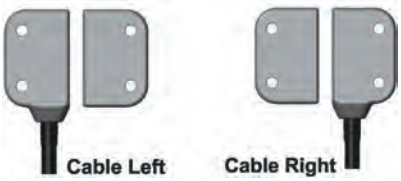
FEATURES:

Compact and robust fitting suitable for all small guard applications.
Hygienic screw covers ensure suitability for Food Processing washdown
Cost-effective interlock solution
Wide sensing at 12mm and high tolerance to misalignment
High specification polyester housing with integral back plate
Can be mounted unobtrusively in channels or behind doors
Left or Right Cable exit options available
High current switching capability up to 0.5A
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available - M12 8 Way or M8 4 Way

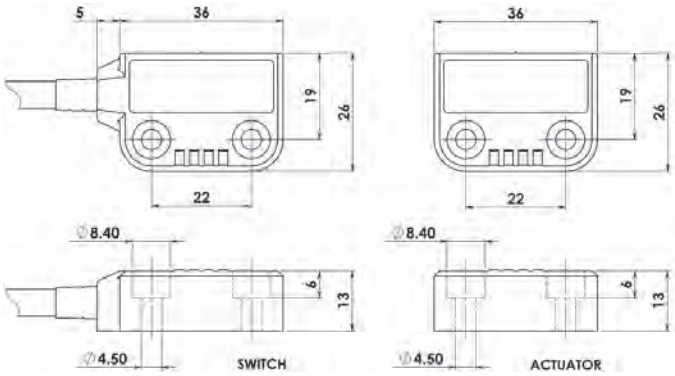
Magnetic Actuation
Switching Tolerance up to 12mm
Will operate with most Safety Relays

Supplied with Screw Cap covers to prevent contamination from food deposits

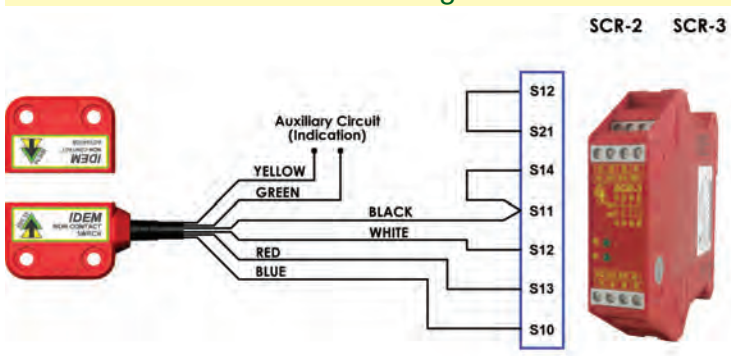
Left or Right Cable Exit Options available



DIMENSIONS:



CONNECTION EXAMPLE: Magnetic Switches



Quick Connect M12 versions fitted with 250mm (10") cable

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Medium Duty Safety Channel 1 NC	Voltage Free: 250Vac 0.5A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 0.5A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.4A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

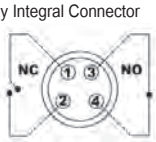
For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
114001	MPR Cable Right	2M	2NC
114002	MPR Cable Right	5M	2NC
114003	MPR Cable Right	10M	2NC
114004	MPR Cable Right	QC-M12	2NC
114005	MPR Cable Right	2M	2NC 1NO
114006	MPR Cable Right	5M	2NC 1NO
114007	MPR Cable Right	10M	2NC 1NO
114008	MPR Cable Right	QC-M12	2NC 1NO
114009	MPR Cable Left	2M	2NC
114010	MPR Cable Left	5M	2NC
114011	MPR Cable Left	10M	2NC
114012	MPR Cable Left	QC-M12	2NC
114013	MPR Cable Left	2M	2NC 1NO
114014	MPR Cable Left	5M	2NC 1NO
114015	MPR Cable Left	10M	2NC 1NO
114016	MPR Cable Left	QC-M12	2NC 1NO

Alternative QC Version — M8 Universal 4 Way Integral Connector

M8 Connector Right

2NC Versions



1NC 1NO Versions

114020	MPR Connector Right	QC M8 2NC	Close 10mm Open 20mm
114021	MPR Connector Left	QC M8 2NC	Close 10mm Open 20mm
114022	MPR Connector Right	QC M8 1NC 1NO	Close 10mm Open 20mm
114023	MPR Connector Left	QC M8 1NC 1NO	Close 10mm Open 20mm
114024	MPR Connector Right	QC M8 2NC	Close 4mm Open 10mm
114025	MPR Connector Left	QC M8 2NC	Close 4mm Open 10mm
114026	MPR Connector Right	QC M8 1NC 1NO	Close 4mm Open 10mm
114027	MPR Connector Left	QC M8 1NC 1NO	Close 4mm Open 10mm

114300	Plastic 8mm Spacers (2) for use when mounting on Ferrous Materials	1 x Switch 1 x Actuator

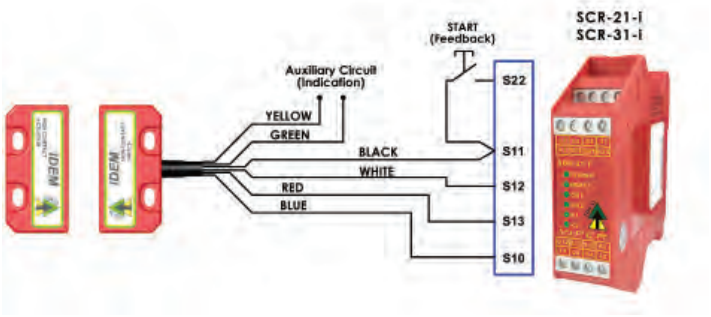
IDEMAG - Magnetic Non Contact **Type: SPR**

FEATURES:

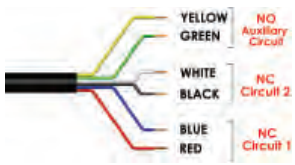
Universal fitting - established 22mm fixing footprint
Suitable for most general industry applications
Can be high pressure hosed at high temperature - IP69K
Withstands environments where high humidity or hose down is required
Wide sensing at 12mm and high tolerance to misalignment
High specification polyester housing with integral back plate
Long life high current switching capability up to 1A
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

Magnetic Actuation - Power Series
Switching Tolerance up to 12mm
Medium Duty versions 230Vac/24Vdc 1A
Will operate with most Safety Relays

CONNECTION EXAMPLE: Magnetic Switches



Single switch connected to an SCR-21-i or SCR-31-i to give Dual Channel guard monitoring with Manual Start. Optional auxiliary circuit provides for remote signalling from switch.



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

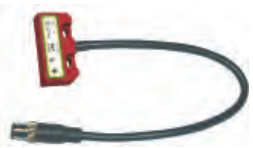
Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

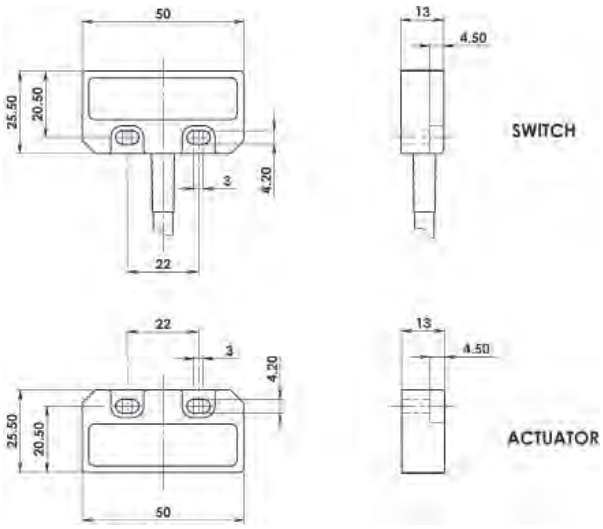
Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.8A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

Quick Connect M12 versions fitted with 250mm (10") cable



DIMENSIONS:



SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
111009	Idemag SPR	2M	2NC
111010	Idemag SPR	5M	2NC
111011	Idemag SPR	10M	2NC
111012	Idemag SPR	QC-M12	2NC
111013	Idemag SPR	2M	2NC 1NO
111014	Idemag SPR	5M	2NC 1NO
111015	Idemag SPR	10M	2NC 1NO
111016	Idemag SPR	QC-M12	2NC 1NO

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

111300	Plastic 8mm Spacers (2) for use when mounting on Ferrous Materials	1 x Switch 1 x Actuator

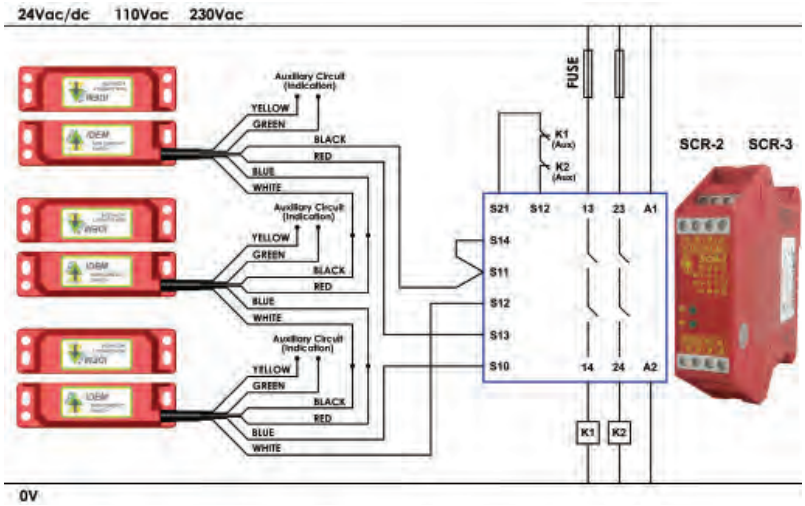
EUROMAG - Magnetic Non Contact **Type: LPR**

FEATURES:

Popular European fitting suitable for all industry applications
Wide 12mm sensing and high tolerance to misalignment
Narrow fitting to enable flush mounting
Long life high power switching capability up to 1A
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

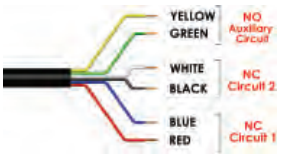
Magnetic Actuation - Power Series
Switching Tolerance up to 12mm
Medium Duty versions 230Vac/24Vdc 1A
Will operate with most Safety Relays

CONNECTION EXAMPLE: Magnetic Switches



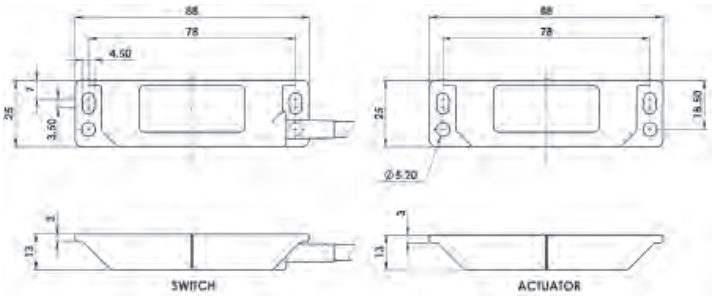
Three switches connected in series to an SCR-2 or SCR-3 to give Dual Channel guard monitoring with Automatic Start and Contactor Feedback check.
Optional auxiliary circuits provides for remote signalling from each switch.

Quick Connect M12 versions fitted with 250mm (10") cable



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

DIMENSIONS:



Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Medium Duty Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.8A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

NC1 Pins 1 and 2
NC2 Pins 3 and 4
M12 4 Way Versions
Asi compatible Pin out
Pin view from switch

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
110009	Euromag LPR	2M	2NC
110010	Euromag LPR	5M	2NC
110011	Euromag LPR	10M	2NC
110012	Euromag LPR	QC-M12	2NC
110013	Euromag LPR	2M	2NC 1NO
110014	Euromag LPR	5M	2NC 1NO
110015	Euromag LPR	10M	2NC 1NO
110016	Euromag LPR	QC-M12	2NC 1NO
110021	Euromag LPR	2M	1NC 1NO
110022	Euromag LPR	5M	1NC 1NO
110023	Euromag LPR	10M	1NC 1NO
110024	Euromag LPR	QC-M12 4 Way	2NC

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

110300	Plastic 8mm Spacers (2) for use when mounting on Ferrous Materials	1 x Switch 1 x Actuator

EUROMAG - Magnetic Non Contact: **LPR (with Integral LED)**

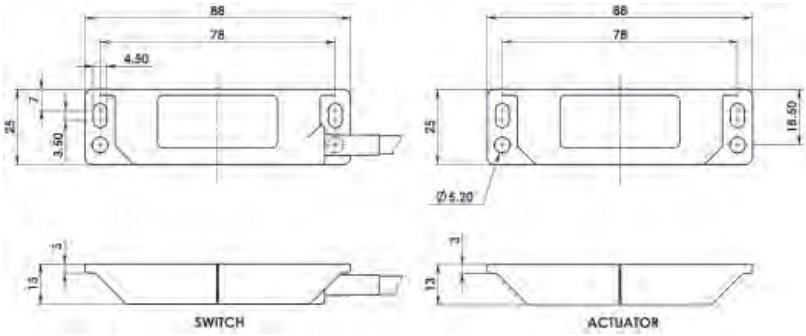
FEATURES:

2NC circuits for connection to safety relays to achieve up to:
PLe ISO13849-1
Integral LED indication of sensing position
Choice of LED versions:
Green - ON when guard is closed
Red - ON when guard is open
Popular European fitting suitable for all industry applications
Narrow fitting to allow for flush mounting
Wide 10mm sensing with high tolerance to misalignment
Long life high power switching capability up to 1A
M12 Quick Connect versions available

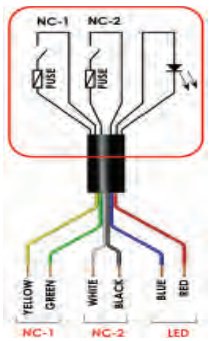
Integral LED (options available)
Magnetic Actuation - Power Series
Switching Tolerance up to 10mm
Will operate with most Safety Relays

Quick Connect M12 versions fitted with 250mm (10") cable

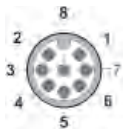
DIMENSIONS:



Recommended operating direction for optimum performance



Note: The LED does not indicate the status of the NC Safety Contacts, but indicates that the actuator is aligned to give optimum performance.



Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Safety Channels NC1 and NC2	Voltage free: 250Vac 1.0A Max.
Fuse (NC Circuits)	Fuse externally 0.8A (F)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
LED Supply Voltage	24Vdc +/-10%
NC Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
LED (Green)	Typical 8mm ON 15mm OFF
LED (Red)	Typical 8mm OFF 15mm ON
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Mechanical Life Expectancy	10,000,000 switching operations
Electrical Life Expectancy	1,000,000 switching operations De-rating Safety Factor 2 Tested to 2,000,000 cycles at 24V 0.2A
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NC2
6	Green	NC2
7	Black	NC1
1	White	NC1
2	Red	Supply + 24Vdc
3	Blue	Supply 0Vdc

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

LED COLOUR AND STATUS	SALES NUMBER	TYPE	CABLE LENGTH	OUTPUT CIRCUITS
LED GREEN (Illuminated when the guard is closed)	110101	Euromag LPR (with Integral LED)	2M	2NC
	110102	Euromag LPR (with Integral LED)	5M	2NC
	110103	Euromag LPR (with Integral LED)	10M	2NC
	110104	Euromag LPR (with Integral LED)	QC-M12	2NC
LED RED (Illuminated when the guard is open)	110105	Euromag LPR (with Integral LED)	2M	2NC
	110106	Euromag LPR (with Integral LED)	5M	2NC
	110107	Euromag LPR (with Integral LED)	10M	2NC
	110108	Euromag LPR (with Integral LED)	QC-M12	2NC

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

110300	Plastic 8mm Spacers (2) for use when mounting on Ferrous Materials	1 x Switch 1 x Actuator

IDEMAG - Magnetic Non Contact **Type: CPR**

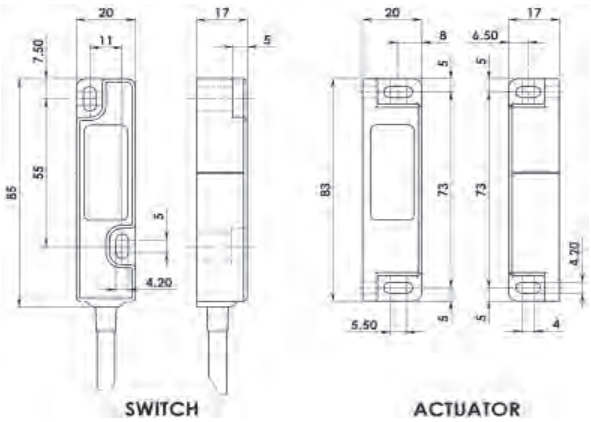
FEATURES:

Can be high pressure hosed at high temperature IP69K
Slim fitting suitable for all industry applications.
Easy to install within narrow frame structures
Operates from two sides for ease of applications
Wide 12mm sensing and high tolerance to misalignment
High switching capability 1A (medium duty) or 2A (heavy duty)
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

Magnetic Actuation - Power Series
Switching Tolerance up to 12mm
Heavy Duty 230Vac/24Vdc 2A or Medium Duty 1.0A
Will operate with most Safety Relays

Quick Connect M12 versions fitted with 250mm (10") cable

DIMENSIONS:



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

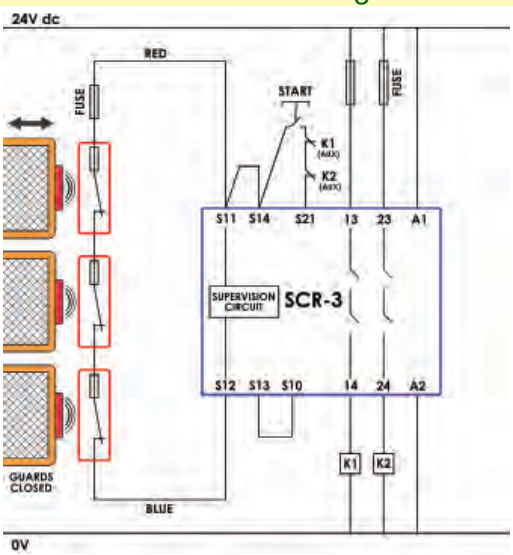
Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
	MTTFd 470 years
Heavy Duty Safety Channel 1 NC	Voltage Free: 250Vac 2.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 2.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 2.0A (F) External 1.6A (F) (User)
Medium Duty Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.8A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

CONNECTION EXAMPLE: Magnetic Switches



Three switches connected in series to an SCR-2 or SCR-3 to give Single Channel guard monitoring but with monitored Manual Start and Contactor Feedback check. Allows minimal wiring but higher current switching to K1 and K2 contactors.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS	NC DUTY
113001	Idemag CPR	2M	2NC	Medium 1A
113002	Idemag CPR	5M	2NC	Medium 1A
113003	Idemag CPR	10M	2NC	Medium 1A
113004	Idemag CPR	QC-M12	2NC	Medium 1A
113005	Idemag CPR	2M	2NC 1NO	Medium 1A
113006	Idemag CPR	5M	2NC 1NO	Medium 1A
113007	Idemag CPR	10M	2NC 1NO	Medium 1A
113008	Idemag CPR	QC-M12	2NC 1NO	Medium 1A
113009	Idemag CPR	2M	1NC	Heavy 2A
113010	Idemag CPR	5M	1NC	Heavy 2A
113011	Idemag CPR	10M	1NC	Heavy 2A
113012	Idemag CPR	QC-M12	1NC	Heavy 2A
113013	Idemag CPR	2M	1NC 1NO	Heavy 2A
113014	Idemag CPR	5M	1NC 1NO	Heavy 2A
113015	Idemag CPR	10M	1NC 1NO	Heavy 2A
113016	Idemag CPR	QC-M12	1NC 1NO	Heavy 2A

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

113300	Plastic 8mm Spacers (2) for use when mounting on Ferrous Materials	1 x Switch 1 x Actuator

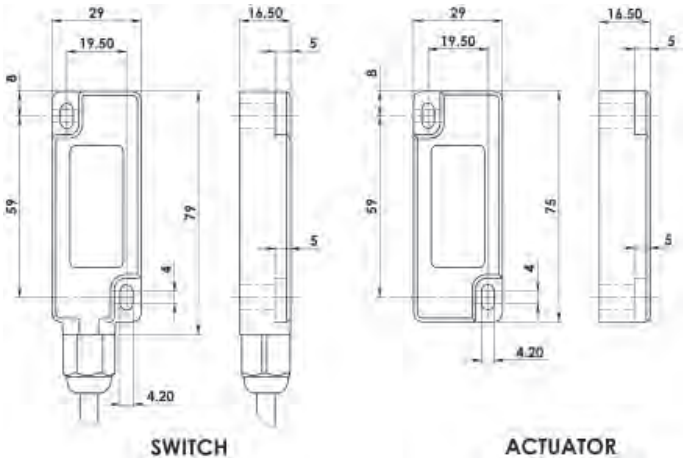
IDEMAG - Magnetic Non Contact **Type: WPR**

FEATURES:

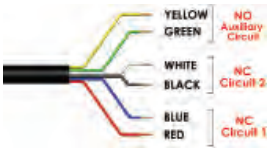
Robust wide fitting suitable for all industry applications.
Wide 12mm sensing and high tolerance to misalignment
Long life high power switching capability: Heavy Duty 2A
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

Magnetic Actuation - Power Series
Switching Tolerance up to 12mm
Heavy Duty version 230Vac/24Vdc 2A
Will operate with most Safety Relays

DIMENSIONS:

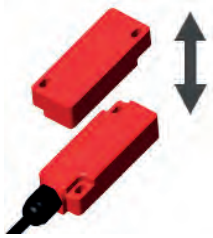


Quick Connect M12 versions fitted with 250mm (10") cable



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

Operating Direction



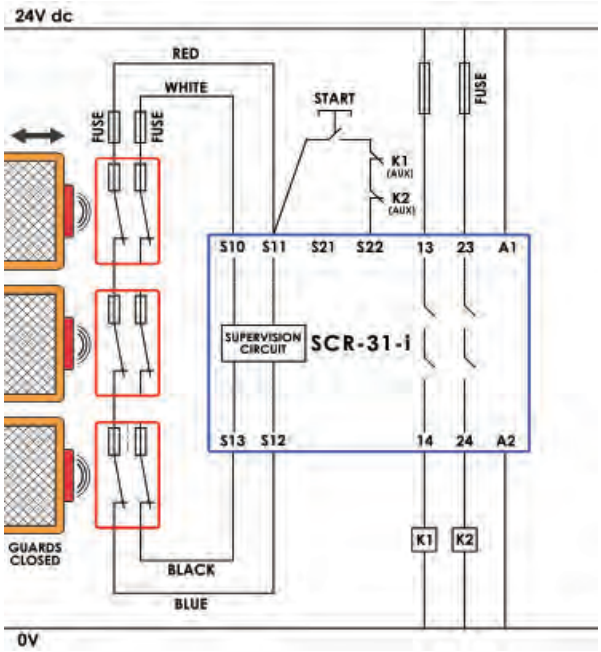
Alternative QC option:

NC1 Pins 1 and 2
NC2 Pins 3 and 4
M12 4 Way Versions
Asi compatible Pin out
Pin view from switch

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Heavy Duty Safety Channel 1 NC	Voltage Free: 250Vac 2.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 2.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 2.0A (F) External 1.6A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

CONNECTION EXAMPLE: Magnetic Switches



Three switches connected in series to an SCR-21-i or SCR-31-i to give Dual Channel guard monitoring but with Monitored Manual Start and Contactor Feedback check.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
112001	Idemag WPR	2M	2NC
112002	Idemag WPR	5M	2NC
112003	Idemag WPR	10M	2NC
112004	Idemag WPR	QC-M12	2NC
112005	Idemag WPR	2M	2NC 1NO
112006	Idemag WPR	5M	2NC 1NO
112007	Idemag WPR	10M	2NC 1NO
112008	Idemag WPR	QC-M12	2NC 1NO
112009	Idemag WPR	2M	1NC 1NO
112010	Idemag WPR	5M	1NC 1NO
112011	Idemag WPR	10M	1NC 1NO
112012	Idemag WPR	QC-M12	1NC 1NO

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

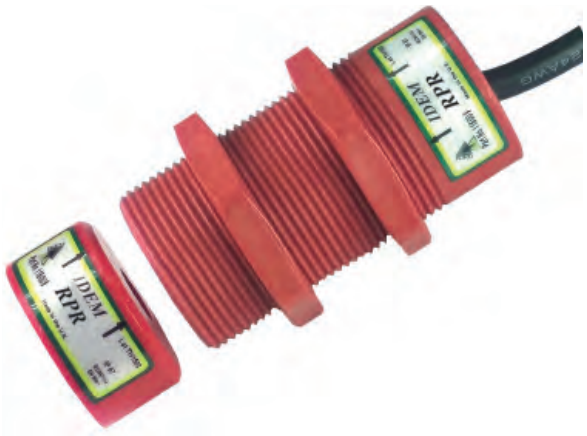
112300	Plastic 8mm Spacers (2) for use when mounting on Ferrous Materials	1 x Switch 1 x Actuator

IDEMAG - Magnetic Non Contact **Type: RPR (Plastic)**

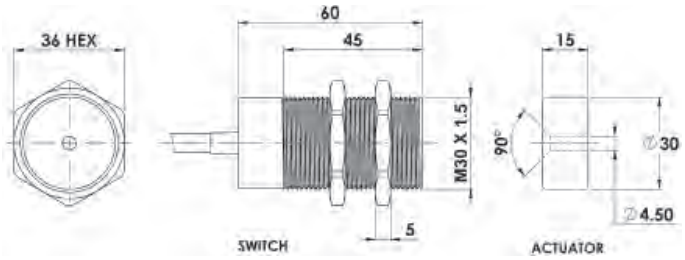
FEATURES:

Cylindrical fitting suitable for all industry applications.
Easy to install - M30 threaded body - easy to set
Wide 10mm sensing
Suitable for harsh environments of Food Processing and Packaging
High specification red polyester housing
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

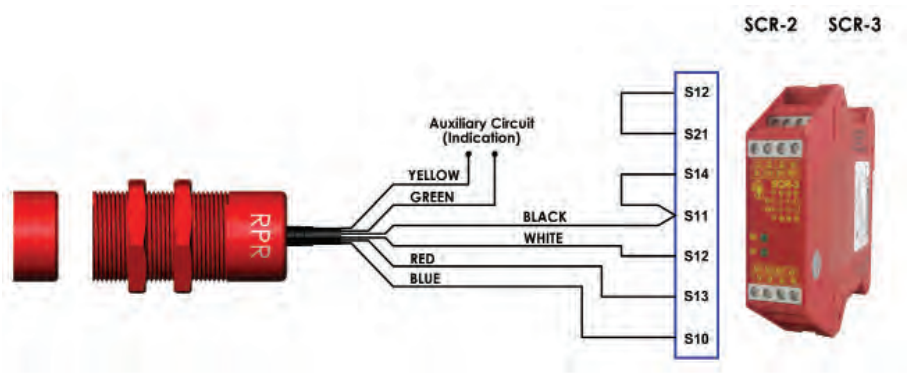
Magnetic Actuation
Switching Tolerance up to 10mm
Will operate with most Safety Relays
Quick Connect versions available



DIMENSIONS:

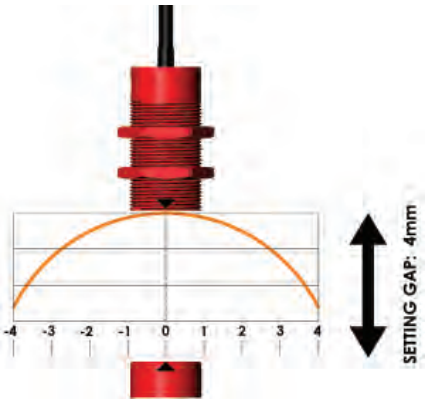


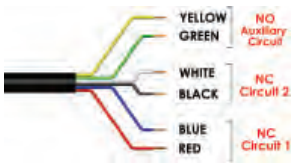
CONNECTION EXAMPLE: Magnetic Switches



One switch connected to an SCR-2 or SCR-3 to give Dual Channel guard monitoring with Automatic Start.

SETTING GAP:





Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Safety Channel 1 NC	Voltage Free: 24Vdc 0.5A Max. Rating
Safety Channel 2 NC	Voltage Free: 24Vdc 0.5A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	4mm in any direction from 4mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	UL approved polyester
Operating Temperature	-25C +80C
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Position	Any

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
116009	Idemag RPR Plastic	2M	2NC
116010	Idemag RPR Plastic	5M	2NC
116011	Idemag RPR Plastic	10M	2NC
116012	Idemag RPR Plastic	QC-M12	2NC
116013	Idemag RPR Plastic	2M	2NC 1NO
116014	Idemag RPR Plastic	5M	2NC 1NO
116015	Idemag RPR Plastic	10M	2NC 1NO
116016	Idemag RPR Plastic	QC-M12	2NC 1NO

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

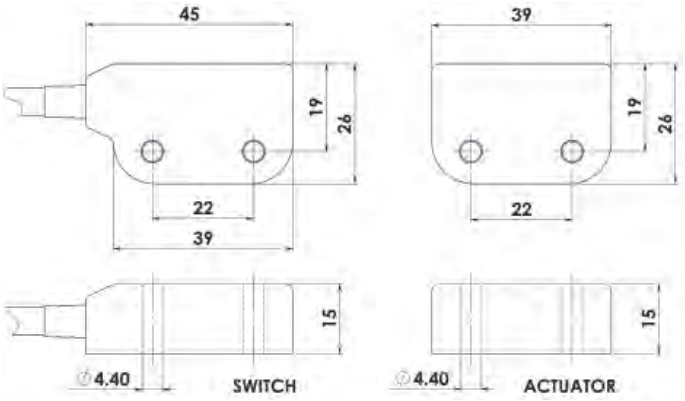
HYGIEMAG - Magnetic Non Contact **Type: MMR-H**

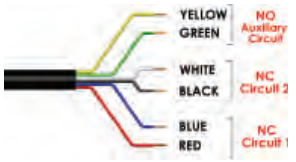
FEATURES:

Compact and robust fitting suitable for all small guard applications.
Through hole fixing to enable front mounting - no food trap areas
Suitable for CIP and SIP cleaning -
Food Contact or Splash Zones EHEDG guidelines
Cost effective interlock solution for harsh environments
Wide sensing at 10mm with high tolerance to misalignment
Stainless Steel 316 housing with Mirror Polished finish (Ra4)
Can be mounted unobtrusively in channels or behind doors
Left or Right Cable exit options available
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

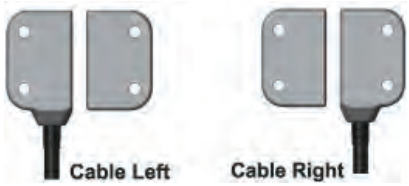
Stainless Steel 316 Housing mirror polished (Ra4)
Magnetic Actuation
Switching Tolerance up to 10mm
Will operate with most Safety Relays

DIMENSIONS:





Left or Right Cable Exit Options available



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Safety Channel 1 NC	Voltage Free: 250Vac 0.5A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 0.5A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
131001	MMR-H Cable Right	2M	2NC
131002	MMR-H Cable Right	5M	2NC
131003	MMR-H Cable Right	10M	2NC
131004	MMR-H Cable Right	QC-M12	2NC
131005	MMR-H Cable Right	2M	2NC 1NO
131006	MMR-H Cable Right	5M	2NC 1NO
131007	MMR-H Cable Right	10M	2NC 1NO
131008	MMR-H Cable Right	QC-M12	2NC 1NO
131009	MMR-H Cable Left	2M	2NC
131010	MMR-H Cable Left	5M	2NC
131011	MMR-H Cable Left	10M	2NC
131012	MMR-H Cable Left	QC-M12	2NC
131013	MMR-H Cable Left	2M	2NC 1NO
131014	MMR-H Cable Left	5M	2NC 1NO
131015	MMR-H Cable Left	10M	2NC 1NO
131016	MMR-H Cable Left	QC-M12	2NC 1NO

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

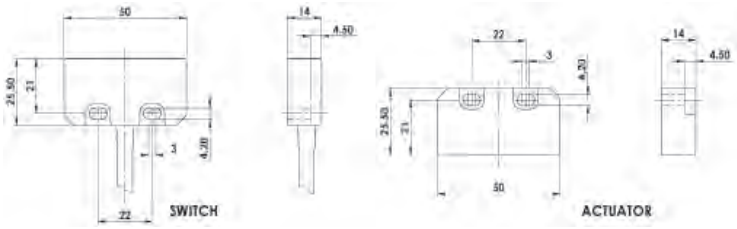
HYGIEMAG - Magnetic Non Contact **Type: SMR**

FEATURES:

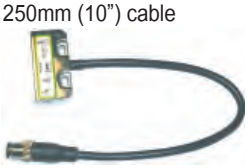
Specifically designed for Food Processing applications -
Stainless Steel 316 Mirror Polished finish (Ra4)
Suitable for CIP and SIP cleaning -
Food Splash Zones EHEDG guidelines
Universal housing - 22mm fixing hole centre with a 50mm wide body
Wide sensing at 12mm with high tolerance to misalignment
Can be high pressure hosed at high temperature
High switching capability - up to 1.0A
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

Stainless Steel 316 Housing mirror polished (Ra4)
Magnetic Actuation - Power Series 230Vac/24Vdc 1.0A
Switching Tolerance up to 12mm
Will operate with most Safety Relays

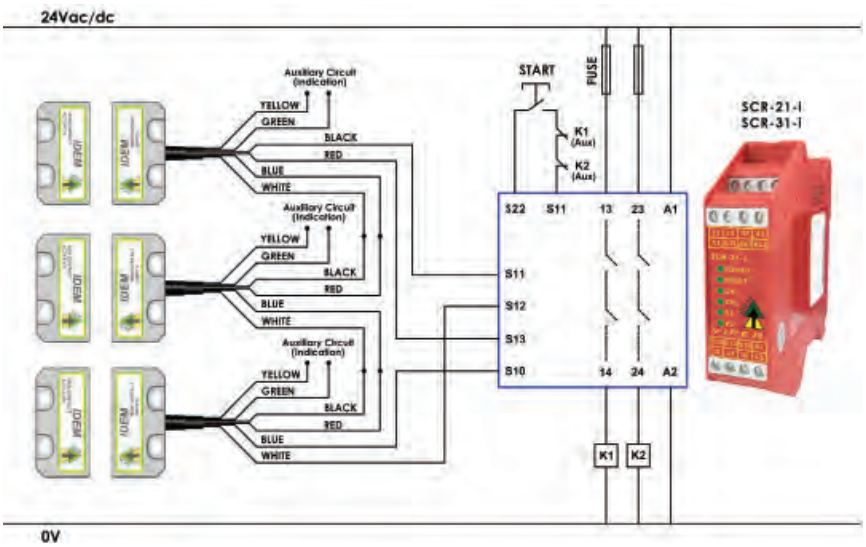
DIMENSIONS:



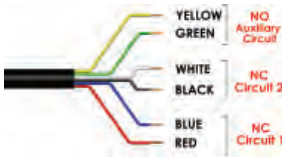
Quick Connect M12 versions fitted with 250mm (10") cable



CONNECTION EXAMPLE: Magnetic Switches



Three SMR switches connected to an SCR-21-i or SCR-31-i to give dual channel guard monitoring with monitored manual start and contactor feedback check. Auxiliary circuits provide remote signalling from each switch.



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.8A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
139009	Hygiemag SMR	2M	2NC
139010	Hygiemag SMR	5M	2NC
139011	Hygiemag SMR	10M	2NC
139012	Hygiemag SMR	QC-M12	2NC
139013	Hygiemag SMR	2M	2NC 1NO
139014	Hygiemag SMR	5M	2NC 1NO
139015	Hygiemag SMR	10M	2NC 1NO
139016	Hygiemag SMR	QC-M12	2NC 1NO
139017	Hygiemag SMR	2M	1NC
139018	Hygiemag SMR	5M	1NC
139019	Hygiemag SMR	10M	1NC
139020	Hygiemag SMR	QC-M12	1NC
139021	Hygiemag SMR	2M	1NC 1NO
139022	Hygiemag SMR	5M	1NC 1NO
139023	Hygiemag SMR	10M	1NC 1NO
139024	Hygiemag SMR	QC-M12	1NC 1NO

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

HYGIEMAG - Magnetic Non Contact **Type: SMR-H**

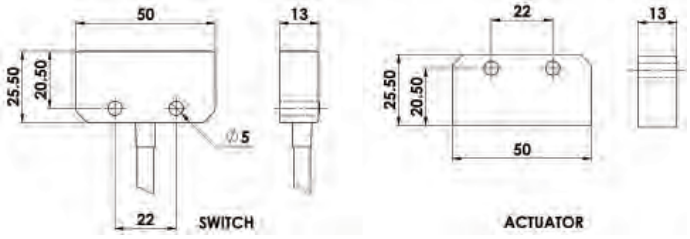
FEATURES:

Robust Stainless Steel 316 enclosure designed to survive Food Processing, Packaging and Pharmaceutical applications
Through hole fixing to enable front mounting by Hexagon head bolts - no food trap areas
Suitable for CIP and SIP cleaning - Food Contact or Food Splash Zones EHEDG guidelines
Universal Housing - 22mm fixing hole centre with 50mm wide body
Wide sensing at 12mm with high tolerance to misalignment
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

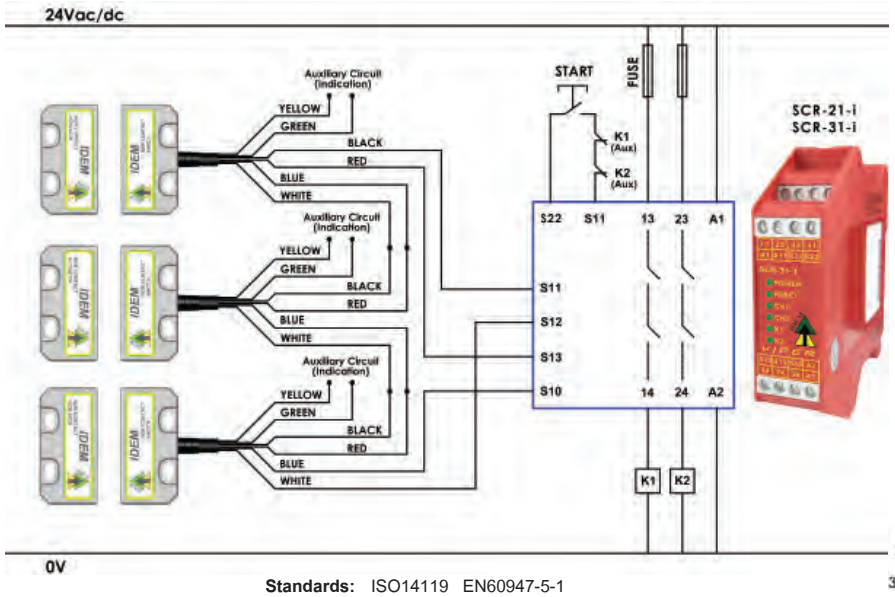
Stainless Steel 316 Housing mirror polished (Ra4)
Magnetic Actuation
Switching Tolerance up to 12mm
Will operate with most Safety Relays

Use Hexagon Head Bolts for ease of cleaning

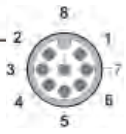
DIMENSIONS:

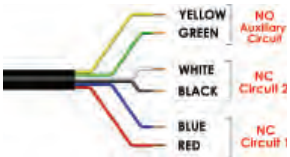


CONNECTION EXAMPLE: Magnetic Switches



Three switches connected to an SCR-21-i or SCR-31-i to give Dual Channel guard monitoring with monitored Manual Start and Contactor Feedback check. Auxiliary circuits provide remote signalling from each switch.





Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.8A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
132009	Hygiemag SMR-H	2M	2NC
132010	Hygiemag SMR-H	5M	2NC
132011	Hygiemag SMR-H	10M	2NC
132012	Hygiemag SMR-H	QC-M12	2NC
132013	Hygiemag SMR-H	2M	2NC 1NO
132014	Hygiemag SMR-H	5M	2NC 1NO
132015	Hygiemag SMR-H	10M	2NC 1NO
132016	Hygiemag SMR-H	QC-M12	2NC 1NO

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

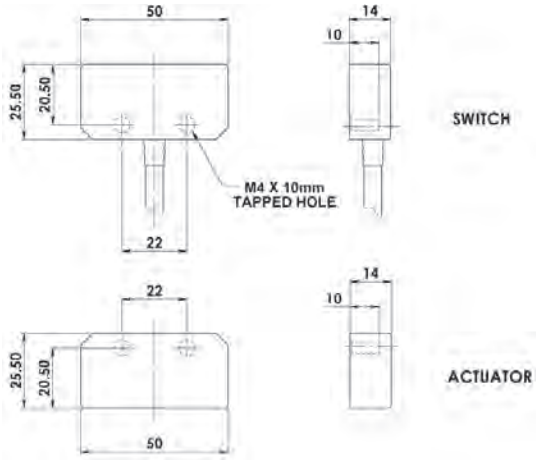
HYGIEMAG - Magnetic Non Contact **Type: SMR-F**

FEATURES:

Specifically designed for Food Processing applications
Suitable for CIP and SIP cleaning - mounting holes at rear - no food traps
Suitable for Food Contact Zones - EHEDG Guidelines
Wide 12mm sensing with high tolerance to misalignment
Universal housing - 22mm fixing hole centre - 50mm wide body
Can be high pressure hosed at high temperature - IP69K
Rear fixing with 2 x M4 tapped holes
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

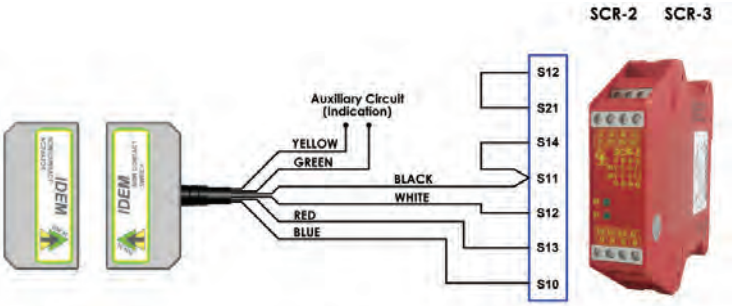
Stainless Steel 316 Housing mirror polished (Ra4)
Magnetic Actuation - Power Series
Medium Duty 230Vac 1.0A/24Vdc 1.0A
Switching Tolerance up to 12mm
Will operate with most Safety Relays

DIMENSIONS:



Quick Connect M12 versions fitted with 250mm (10") cable

CONNECTION EXAMPLE: Magnetic Switches



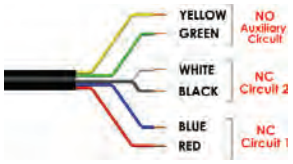
One switch connected to an SCR-2 or SCR-3 to give Dual Channel guard monitoring but with Automatic Start.

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Medium Duty Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.8A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
137009	Hygiemag SMR-F	2M	2NC
137010	Hygiemag SMR-F	5M	2NC
137011	Hygiemag SMR-F	10M	2NC
137012	Hygiemag SMR-F	QC-M12	2NC
137013	Hygiemag SMR-F	2M	2NC 1NO
137014	Hygiemag SMR-F	5M	2NC 1NO
137015	Hygiemag SMR-F	10M	2NC 1NO
137016	Hygiemag SMR-F	QC-M12	2NC 1NO
137017	Hygiemag SMR-F	2M	1NC
137018	Hygiemag SMR-F	5M	1NC
137019	Hygiemag SMR-F	10M	1NC
137020	Hygiemag SMR-F	QC-M12	1NC
137021	Hygiemag SMR-F	2M	1NC 1NO
137022	Hygiemag SMR-F	5M	1NC 1NO
137023	Hygiemag SMR-F	10M	1NC 1NO
137024	Hygiemag SMR-F	QC-M12	1NC 1NO

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

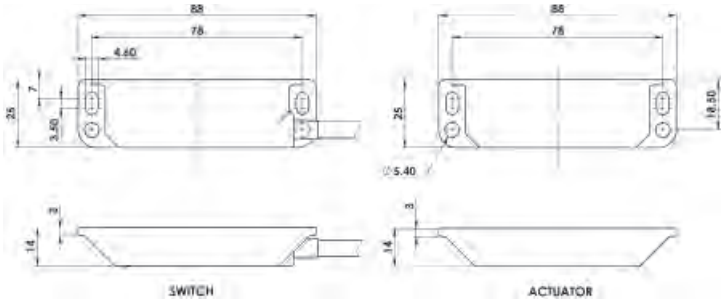
HYGIEMAG - Magnetic Non Contact **Type: LMR**

FEATURES:

Specifically designed for Food Processing applications -
Stainless Steel 316 Mirror Polished finish (Ra4)
Suitable for CIP and SIP cleaning -
Food Splash Zones EHEDG guidelines - IP69K
Wide sensing at 12mm with high tolerance to misalignment
Narrow fitting enables flush mounting
Can be high pressure hosed at high temperature
Long life high power switching capability - up to 1.0A
Up to: PLe ISO13849-1
2NC 1NO circuits Quick Connect versions available

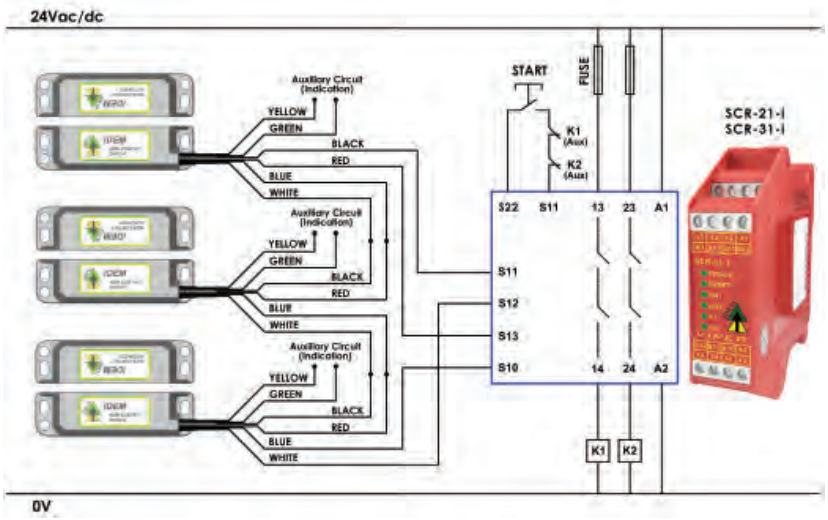
Stainless Steel 316 Housing mirror polished (Ra4)
Magnetic Actuation - Power Series 230Vac/24Vdc 1.0A
Switching Tolerance up to 12mm
Will operate with most Safety Relays

DIMENSIONS:

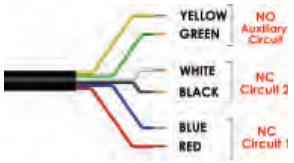


Quick Connect M12 versions fitted with 250mm (10") cable

CONNECTION EXAMPLE: Magnetic Switches



Three switches connected in series to an SCR-21-i or SCR-31-i to give Dual Channel guard monitoring with Monitored Manual Start and Contactor Feedback check. Optional auxiliary circuits provide for remote signalling from each switch.



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
	MTTFd 470 years
Medium Duty Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.8A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
133009	Hygiemag LMR	2M	2NC
133010	Hygiemag LMR	5M	2NC
133011	Hygiemag LMR	10M	2NC
133012	Hygiemag LMR	QC-M12	2NC
133013	Hygiemag LMR	2M	2NC 1NO
133014	Hygiemag LMR	5M	2NC 1NO
133015	Hygiemag LMR	10M	2NC 1NO
133016	Hygiemag LMR	QC-M12	2NC 1NO

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

HYGIEMAG - Magnetic Non Contact: **LMR (with Integral LED)**

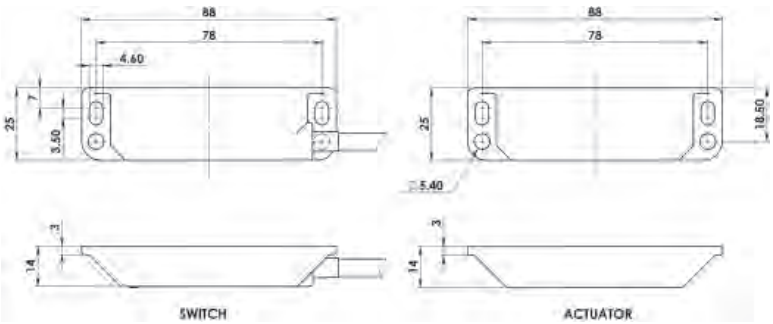
FEATURES:

2NC circuits for connection to safety relays to achieve up to:
PLe ISO13849-1
Integral LED indication of sensing position
Choice of LED versions:
Green - ON when guard is closed
Red - ON when guard is open
Stainless Steel 316 housing - IP69K suitable for high pressure hosing
Popular European style narrow fitting for flush mounting
Wide 10mm sensing with high tolerance to misalignment
Long life high power switching capability up to 1A
M12 Quick Connect versions available

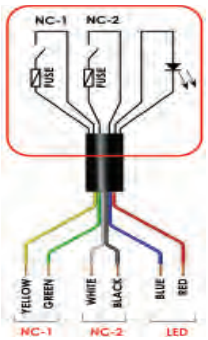
Integral LED (options available)
Magnetic Actuation - Power Series
Switching Tolerance up to 10mm
Will operate with most Safety Relays

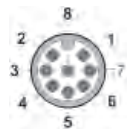
Quick Connect M12 versions fitted with 250mm (10") cable

DIMENSIONS:



Recommended operating direction for optimum performance





Note: The LED does not indicate the status of the NC Safety Contacts, but indicates that the actuator is aligned to give optimum performance.

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Safety Channels NC1 and NC2	Voltage free: 250Vac 1.0A Max.
Fuse (NC Circuits)	Fuse externally 0.8A (F)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
LED Supply Voltage	24Vdc +/-10%
NC Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
LED (Green)	Typical 8mm ON 15mm OFF
LED (Red)	Typical 8mm OFF 15mm ON
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP67 IP69K
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Mechanical Life Expectancy	10,000,000 switching operations
Electrical Life Expectancy	1,000,000 switching operations De-rating Safety Factor 2 Tested to 2,000,000 cycles at 24V 0.2A
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NC2
6	Green	NC2
7	Black	NC1
1	White	NC1
2	Red	Supply + 24Vdc
3	Blue	Supply 0Vdc

LED COLOUR AND STATUS	SALES NUMBER	TYPE	CABLE LENGTH	OUTPUT CIRCUITS
LED GREEN (Illuminated when the guard is closed)	133120	Hygiemag LMR (with Integral LED)	2M	2NC
	133121	Hygiemag LMR (with Integral LED)	5M	2NC
	133122	Hygiemag LMR (with Integral LED)	10M	2NC
	133123	Hygiemag LMR (with Integral LED)	QC-M12	2NC
LED RED (Illuminated when the guard is open)	133124	Hygiemag LMR (with Integral LED)	2M	2NC
	133125	Hygiemag LMR (with Integral LED)	5M	2NC
	133126	Hygiemag LMR (with Integral LED)	10M	2NC
	133127	Hygiemag LMR (with Integral LED)	QC-M12	2NC

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

HYGIEMAG - Magnetic Non Contact **Type: CMR**

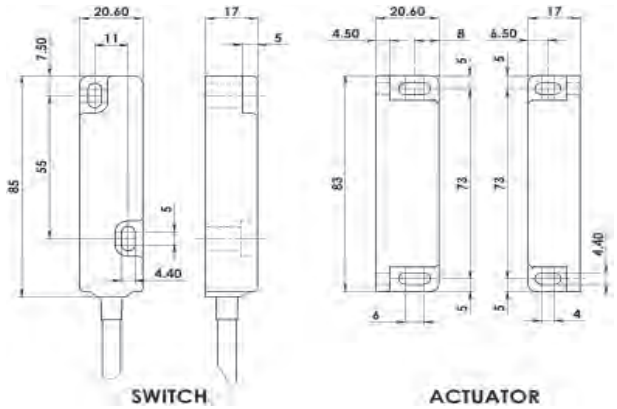
FEATURES:

Specifically designed for Food Processing applications -
Stainless Steel 316 Mirror Polished finish (Ra4)
Suitable for CIP and SIP cleaning -
Food Splash Zones EHEDG guidelines
Slim 20mm wide housing - can be fitted into narrow channels easily
Wide sensing at 12mm with high tolerance to misalignment
Can be high pressure hosed at high temperature
High switching capability - up to 2.0A
Up to: PLe ISO13849-1
Quick Connect versions available

Stainless Steel 316 Housing mirror polished (Ra4)
Magnetic Actuation - Power Series 230Vac/24Vdc 2.0A
Switching Tolerance up to 12mm
Will operate with most Safety Relays

Quick Connect M12 versions fitted with 250mm (10") cable

DIMENSIONS:



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

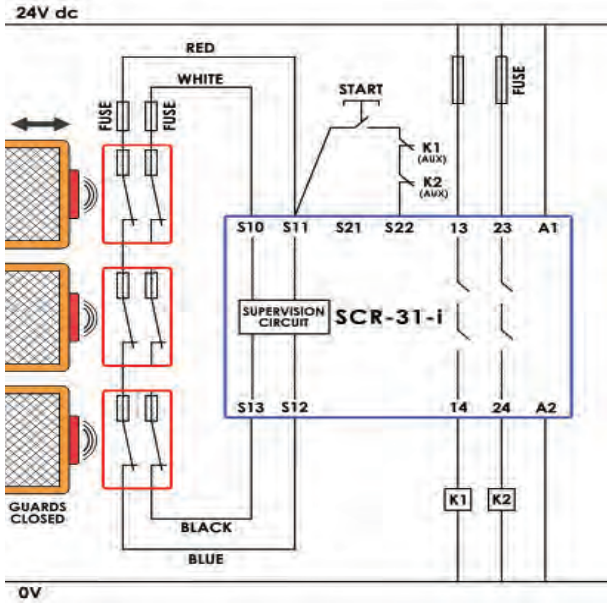
Safety Classification and Reliability Data:

	Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
	ISO13849-1	Up to PLe depending upon system architecture
	Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
		MTTFd 470 years
Heavy Duty	Safety Channel 1 NC	Voltage Free: 250Vac 2.0A Max. Rating
	Safety Channel 2 NC	Voltage Free: 250Vac 2.0A Max. Rating
	Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
	Fuse	Internal 2.0A (F) External 1.6A (F) (User)
Medium Duty	Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
	Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
	Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
	Fuse	Internal 1.0A (F) External 0.8A (F) (User)
	Contact Release Time	<2ms
	Initial Contact Resistance	<500 milliohm
	Minimum Switched Current	10Vdc 1mA
	Dielectric Withstand	250Vac
	Insulation Resistance	100 Mohms
	Recommended Setting Gap	5mm
	Switching Distance	Sao 8mm Close
	(Target to Target)	Sar 22mm Open
	Tolerance to Misalignment	5mm in any direction from 5mm setting gap
	Switching Frequency	1.0Hz maximum
	Approach Speed	200mm/min to 1000mm/sec
	Body Material	Stainless Steel 316 mirror polished finish to Ra4
	Operating Temperature	-25C +105C (CIP SIP cleaning)
	Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
	Shock Resistance	IEC68-2-27 11ms 30g
	Vibration Resistance	IEC68-2-6 10-55Hz 1mm
	Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
	Mounting Bolts	2xM4 Tightening torque 1.0Nm
	Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

CONNECTION EXAMPLE: Magnetic Switches

Three switches connected in series to an SCR-21-i or SCR-31-i to give Dual Channel guard monitoring with Monitored Manual Start and Contactor Feedback check.



SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS	NC DUTY
138017	Hygiemag CMR	2M	2NC	Medium 1A
138018	Hygiemag CMR	5M	2NC	Medium 1A
138019	Hygiemag CMR	10M	2NC	Medium 1A
138020	Hygiemag CMR	QC-M12	2NC	Medium 1A
138021	Hygiemag CMR	2M	2NC 1NO	Medium 1A
138022	Hygiemag CMR	5M	2NC 1NO	Medium 1A
138023	Hygiemag CMR	10M	2NC 1NO	Medium 1A
138024	Hygiemag CMR	QC-M12	2NC 1NO	Medium 1A
138025	Hygiemag CMR	2M	1NC	Heavy 2A
138026	Hygiemag CMR	5M	1NC	Heavy 2A
138027	Hygiemag CMR	10M	1NC	Heavy 2A
138028	Hygiemag CMR	QC-M12	1NC	Heavy 2A
138029	Hygiemag CMR	2M	1NC 1NO	Heavy 2A
138030	Hygiemag CMR	5M	1NC 1NO	Heavy 2A
138031	Hygiemag CMR	10M	1NC 1NO	Heavy 2A
138032	Hygiemag CMR	QC-M12	1NC 1NO	Heavy 2A

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

HYGIEMAG - Magnetic Non Contact **Type: CMR-F**

FEATURES:

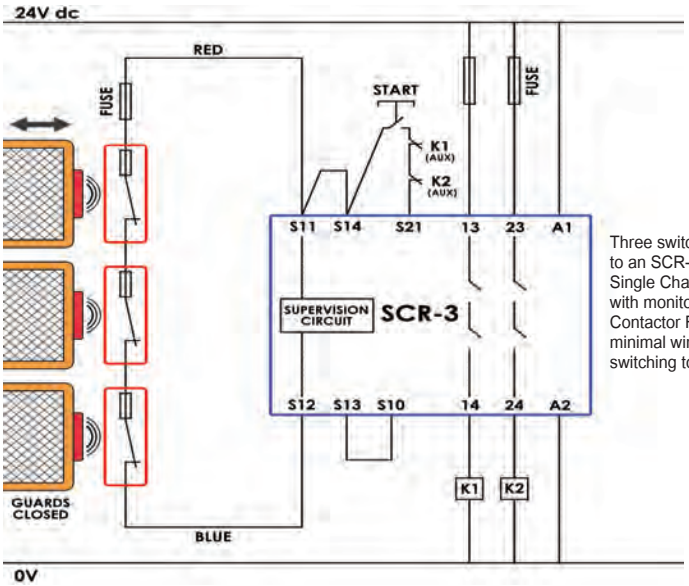
Specifically designed for Food Processing applications -
Stainless Steel 316 Mirror Polished finish (Ra4)
Suitable for CIP SIP cleaning, mounting holes are at the rear - no food traps
Suitable for Food Contact Zones - EHEDG Guidelines
Industry standard fixings - can be high pressure hosed at high temperature
Wide sensing at 12mm with high tolerance to misalignment
Can be high pressure hosed at high temperature
High switching capability - up to 2.0A
Up to: PLe ISO13849-1

Stainless Steel 316 Housing mirror polished (Ra4)
Magnetic Actuation - Power Series 230Vac/24Vdc 2.0A
Switching Tolerance up to 12mm
No Food Traps - Rear Mounting Holes
Will operate with most Safety Relays

IP69K

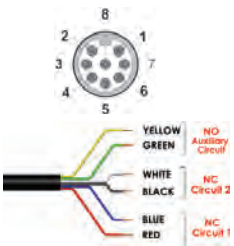
Quick Connect M12 versions fitted with 250mm (10") cable

CONNECTION EXAMPLE: Magnetic Switches



Three switches connected in series to an SCR-2 or SCR-3 to give Single Channel guard monitoring with monitored Manual Start and Contactor Feedback check. Allows minimal wiring but higher current switching to K1 and K2 contactors.

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1



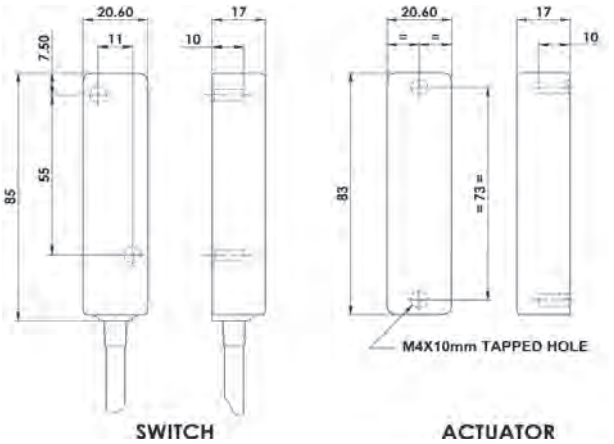
Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Heavy Duty Safety Channel 1 NC	Voltage Free: 250Vac 2.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 2.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 2.0A (F) External 1.6A (F) (User)
Medium Duty Safety Channel 1 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 1.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 1.0A (F) External 0.8A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

DIMENSIONS:



SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS	NC DUTY
135017	Hygiemag CMR-F	2M	2NC	Medium 1A
135018	Hygiemag CMR-F	5M	2NC	Medium 1A
135019	Hygiemag CMR-F	10M	2NC	Medium 1A
135020	Hygiemag CMR-F	QC-M12	2NC	Medium 1A
135021	Hygiemag CMR-F	2M	2NC 1NO	Medium 1A
135022	Hygiemag CMR-F	5M	2NC 1NO	Medium 1A
135023	Hygiemag CMR-F	10M	2NC 1NO	Medium 1A
135024	Hygiemag CMR-F	QC-M12	2NC 1NO	Medium 1A
135025	Hygiemag CMR-F	2M	1NC	Heavy 2A
135026	Hygiemag CMR-F	5M	1NC	Heavy 2A
135027	Hygiemag CMR-F	10M	1NC	Heavy 2A
135028	Hygiemag CMR-F	QC-M12	1NC	Heavy 2A
135029	Hygiemag CMR-F	2M	1NC 1NO	Heavy 2A
135030	Hygiemag CMR-F	5M	1NC 1NO	Heavy 2A
135031	Hygiemag CMR-F	10M	1NC 1NO	Heavy 2A
135032	Hygiemag CMR-F	QC-M12	1NC 1NO	Heavy 2A

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

HYGIEMAG - Magnetic Non Contact **Type: WMR**

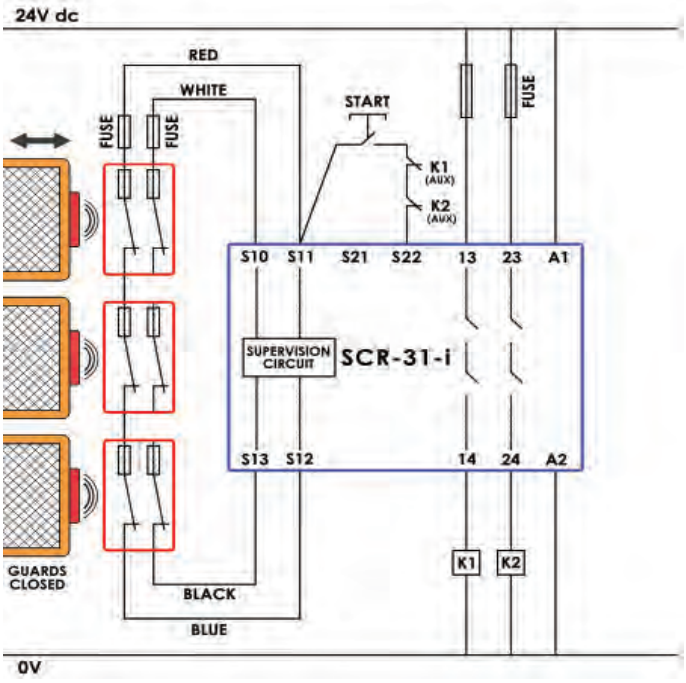
FEATURES:

Specifically designed for Food Processing applications -
Stainless Steel 316 Mirror Polished finish (Ra4)
Suitable for CIP and SIP cleaning -
Food Splash Zones EHEDG guidelines
Industry standard fixings
Wide sensing at 12mm with high tolerance to misalignment
Can be high pressure hosed at high temperature IP69K
Long life high power switching capability - Heavy Duty 2.0A
Up to: PLe
Quick Connect versions available

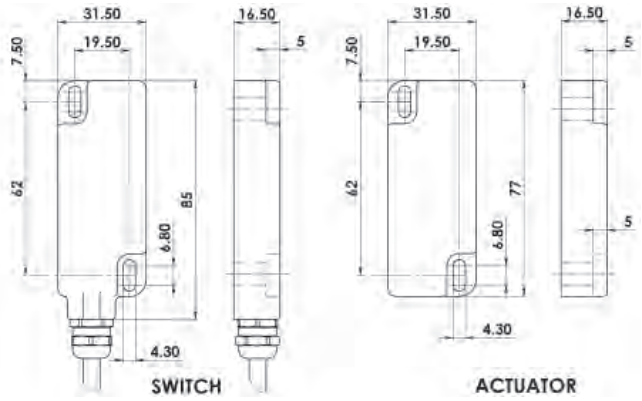
Stainless Steel 316 Housing mirror polished (Ra4)
Magnetic Actuation - Power Series 230Vac/24Vdc 2.0A
Switching Tolerance up to 12mm
Will operate with most Safety Relays

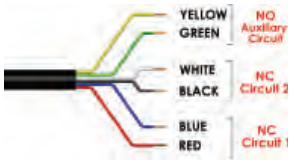
Quick Connect M12 versions fitted with 250mm (10") cable

CONNECTION EXAMPLE: Magnetic Switches



DIMENSIONS:





Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Heavy Duty Safety Channel 1 NC	Voltage Free: 250Vac 2.0A Max. Rating
Safety Channel 2 NC	Voltage Free: 250Vac 2.0A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Fuse	Internal 2.0A (F) External 1.6A (F) (User)
Contact Release Time	<2ms
Initial Contact Resistance	<500 milliohm
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 22mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316 mirror polished finish to Ra4
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K (NEMA PW12) IP67 (NEMA 6)
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Bolts	2xM4 Tightening torque 1.0Nm
Mounting Position	Any

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
136001	Hygiemag WMR	2M	2NC
136002	Hygiemag WMR	5M	2NC
136003	Hygiemag WMR	10M	2NC
136004	Hygiemag WMR	QC-M12	2NC
136005	Hygiemag WMR	2M	2NC 1NO
136006	Hygiemag WMR	5M	2NC 1NO
136007	Hygiemag WMR	10M	2NC 1NO
136008	Hygiemag WMR	QC-M12	2NC 1NO
136009	Hygiemag WMR	2M	1NC 1NO
136010	Hygiemag WMR	5M	1NC 1NO
136011	Hygiemag WMR	10M	1NC 1NO
136012	Hygiemag WMR	QC-M12	1NC 1NO

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

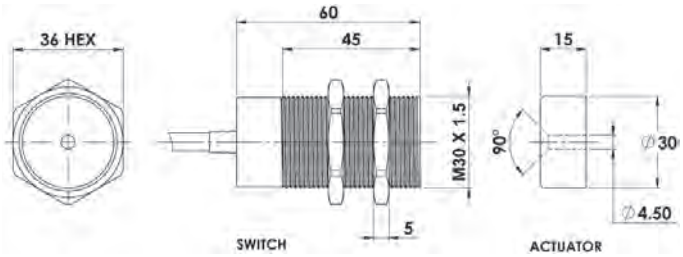
HYGIEMAG - Magnetic Non Contact **Type: RMR**

FEATURES:

Cylindrical fitting suitable for all industry applications.
Easy to install - M30 threaded body - easy to set
Wide 10mm sensing
Suitable for harsh environments of Food Processing and Packaging
Up to: PLe ISO13849-1
2NC 1NO circuits
Quick Connect versions available

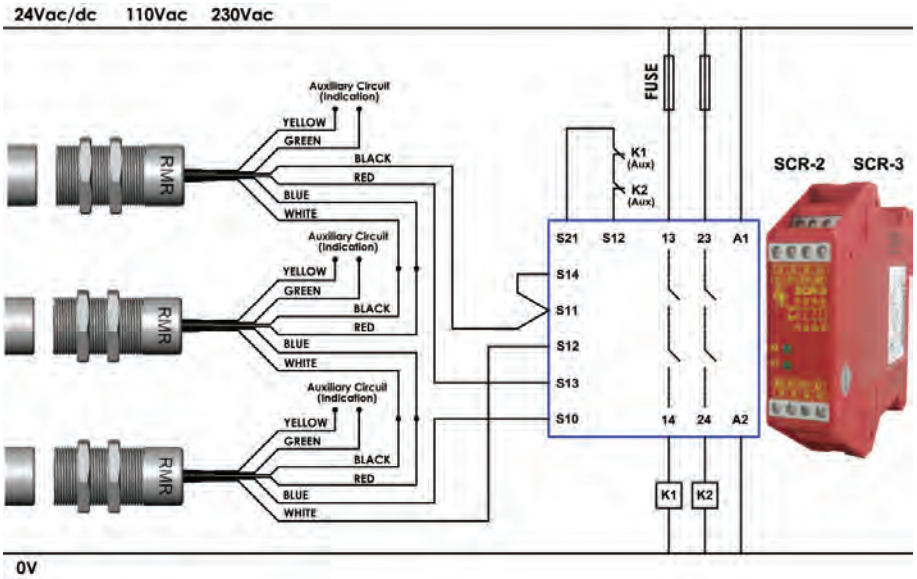
Stainless Steel 316 Housing
Magnetic Actuation
Switching Tolerance up to 10mm
Will operate with most Safety Relays
Quick Connect versions available

DIMENSIONS:



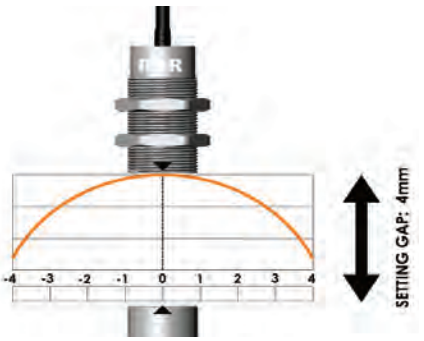
Quick Connect M12 versions fitted with 250mm (10") cable

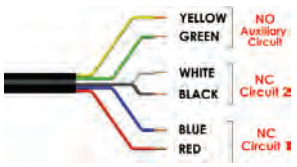
CONNECTION EXAMPLE: Magnetic Switches



Three switches connected in series to an SCR-2 or SCR-3 to give Dual Channel guard monitoring with Automatic Start and Contactor Feedback Check.

SETTING GAP:





Standards: ISO14119 EN60947-5-1
EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	3.3 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 470 years
Safety Channel 1 NC	Voltage Free: 24Vdc 0.5A Max. Rating
Safety Channel 2 NC	Voltage Free: 24Vdc 0.5A Max. Rating
Safety Channel 3 NO	Voltage Free: 24Vdc 0.2A Max. Rating
Minimum Switched Current	10Vdc 1mA
Dielectric Withstand	250Vac
Insulation Resistance	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 8mm Close
(Target to Target)	Sar 20mm Open
Tolerance to Misalignment	4mm in any direction from 4mm setting gap
Switching Frequency	1.0Hz maximum
Approach Speed	200mm/min to 1000mm/sec
Body Material	Stainless Steel 316
Operating Temperature	-25C +105C (CIP SIP cleaning)
Enclosure Protection	IP69K IP67
Shock Resistance	IEC68-2-27 11ms 30g
Vibration Resistance	IEC68-2-6 10-55Hz 1mm
Cable Type	PVC 6 core 6mm OD Conductors 0.25mm^2
Mounting Position	Any

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

SALES NUMBER	TYPE	CABLE LENGTH	CIRCUITS
134009	Hygiemag RMR S/Steel 316	2M	2NC
134010	Hygiemag RMR S/Steel 316	5M	2NC
134011	Hygiemag RMR S/Steel 316	10M	2NC
134012	Hygiemag RMR S/Steel 316	QC-M12	2NC
134013	Hygiemag RMR S/Steel 316	2M	2NC 1NO
134014	Hygiemag RMR S/Steel 316	5M	2NC 1NO
134015	Hygiemag RMR S/Steel 316	10M	2NC 1NO
134016	Hygiemag RMR S/Steel 316	QC-M12	2NC 1NO

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

Standalone Coded Non Contact Switches **Types: PSA & MSA**

FEATURES & APPLICATION:

IDEM's PSA and MSA Non Contact Coded switches have been developed as stand alone mountable devices to provide a high level of fault detection and functional safety.

They can be mounted to guard doors to provide and maintain a high level of functional safety without the need to connect to external safety evaluators.

They have their own internal monitoring system and use force guided mechanical contacts and will maintain PLe (ISO13849-1) even when the switches are connected in series.

They are offered in high specification plastic or stainless steel 316 (mirror polished finish to Ra4) housings and can be used in almost any environment including where the requirement for high pressure cleaning following contamination from foreign particles exists. The housings are compact and easy to fit on frame sections of less than 40mm.

The PSA (Plastic) and the MSA (Stainless Steel 316) both have IP69K ingress protection and are suitable for most detergent washdown applications. The MSA Stainless Steel 316 version has a mirror polished (Ra4) surface finish and is suitable for CIP and SIP process applications.

Dual Actuator versions are available for use with "double door" guards

The typical sensing distance "on" is 12mm with wide tolerance to guard misalignment after setting.

Tested to ingress protection degree IP69K (high pressure hosing with detergent at 80C and 100psi)

SAFETY RELIABILITY:

All standalone switches employ Two Force Guided Mechanical Relays and incorporate internal checking to ensure both relays are operational after each safety demand. If one relay fails to open or becomes inoperative the switch will lock out safe. Switches can be connected in series to maintain PLe to ISO13849-1.

MAIN USER BENEFITS:

- A standalone mountable device able to provide interlocking control without the need for special additional controllers.
- Feedback circuit check option is included for use when incorporating reset buttons and external contactor feedback checks.
- Maintains PLe by internally checking the internal mechanical relays at each safety demand.
- Connect up to 20 switches in series.
- Ability to connect other switches and E Stops in series.
- Output contacts will switch up to 230Vac 3A.

FUNCTIONAL SPECIFICATION:

High Functional Safety to ISO13849-1 - up to PLe Conformance to EN60947-5-3 PDF-M.

Coded actuation to provide high tamper proof interlock security on Guard Doors.

Two Diagnostic LED's:

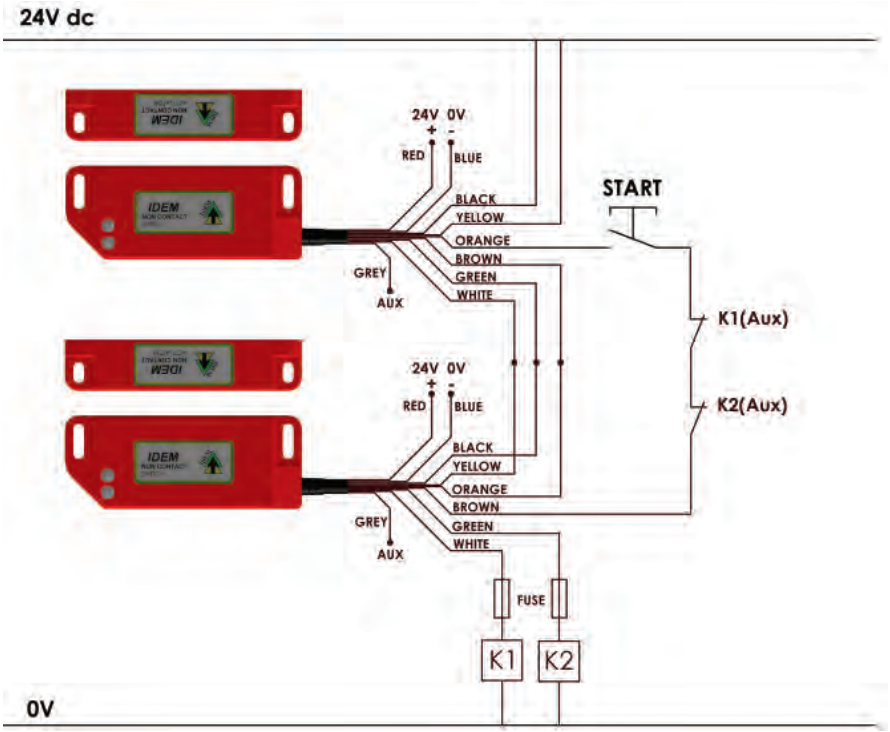
LED1	Green	Indication of Safety Circuits Closed (Guard Closed, Actuator present, Feedback Circuit checked)
LED2	Yellow	Indication of Safety Circuits Open (Actuator removed)

One Auxiliary circuit for indication of door open.

M12 Male 8-way Quick Connector versions available (Flying Lead 250mm (10")) and also optional series pluggable connectors.

Standalone Coded Non Contact Switches **Types: PSA & MSA**

CONNECTION EXAMPLE: Switches in Series - Manual Start PLe



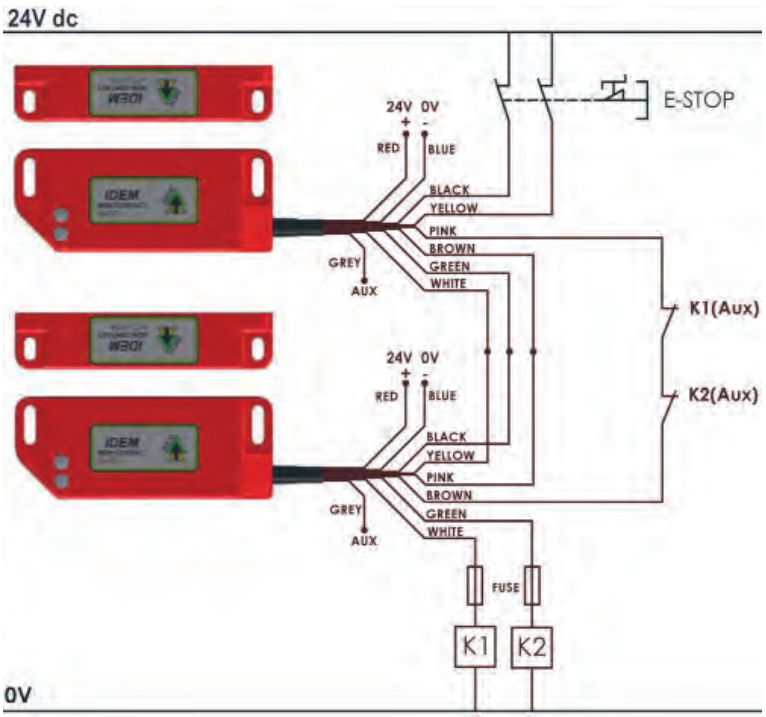
Two switches connected in series to give dual circuit safety outputs to machine contactors.

Safety Circuit 1 (Black/White) utilises internally checked force guided relay contacts and is connected in series with the corresponding Safety Circuit 2 (Yellow/Green) of the next switch.

Allows minimal wiring and higher current switching to K1 and K2 contactors.

A manual start and contactor feedback check is achieved by connecting K1(Aux) and K2(Aux) feedback contacts through the orange and brown feedback check.

CONNECTION EXAMPLE: Switches in Series - Automatic Start PLd/Cat3



Two switches connected in series to give dual circuit safety outputs to machine contactors.

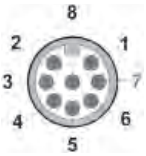
Safety Circuit 1 (Black/White) utilises internally checked force guided relay contacts and is connected in series with the corresponding Safety Circuit 2 (Yellow/Green) of the next switch.

Allows minimal wiring and higher current switching to K1 and K2 contactors.

An automatic start with contactor feedback check is achieved by connecting K1(Aux) and K2(Aux) feedback contacts through Pink and Brown feedback check circuit.

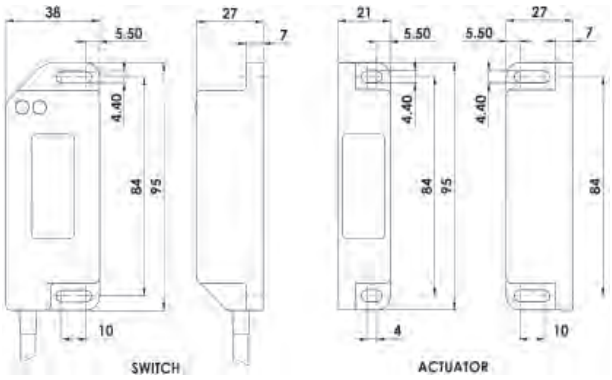
A mechanical E-Stop button is connected in series with the safety outputs (PLd).

Quick Connect QC Flying Lead 250mm (10") M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit	
2	Red	Supply +24Vdc	24Vdc +/-10%
3	Blue	Supply 0Vdc	
1	White	Safety Output 1 (Force Guided Relay)	AC15 250Vac 3A DC13 24Vdc 3A
7	Black	Safety Output 1 (Force Guided Relay)	
4	Yellow	Safety Output 2	AC15 250Vac 3A DC13 24Vdc 3A
6	Green	Safety Output 2	
8	Brown	Reset/Check Circuit - Output	
5	Orange	Reset/Check Circuit - Manual Start version (see Part Number)	
5	Pink	Reset/Check Circuit - Automatic Start version (see Part Number)	
Not Used	Grey	Auxiliary Feed	Electronic +24Vdc 0.2A



Standalone Coded Non Contact Switches **Types: PSA & MSA**

DIMENSIONS:



Characteristic Data according to IEC62061 (used as a sub system):

Safety Integrity Level	SIL3
PFH (1/h)	3.95E-10 Corresponds to 4.0% of SIL3
PFD	3.46E-05 Corresponds to 3.5% of SIL3
Proof Test Interval T1	20a

Characteristic Data according to EN ISO13849-1:

Performance Level	E
Category	Cat4
MTTFd	446a
Diagnostic Coverage DC	99% (high)

The calculation of the above values is based on the following assumptions:

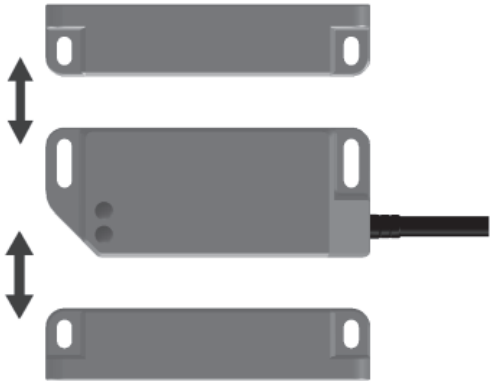
No. of operating days per year:	d_{op} = 365d
No of operating hours per day:	h_{op} = 24h
No of operating cycles per day:	n_{cyc} = 1/d
B10d	= 150,000 AC1 Load 3A
	= 2,000,000 AC1 Load 0.5A

When the product is used deviant from these assumptions (different load, operating frequency, etc) the values have to be adjusted accordingly.

Standards: ISO14119 EN60947-5-3 EN60947-5-1 UL508 EN60204-1 ISO13849-1 EN62061

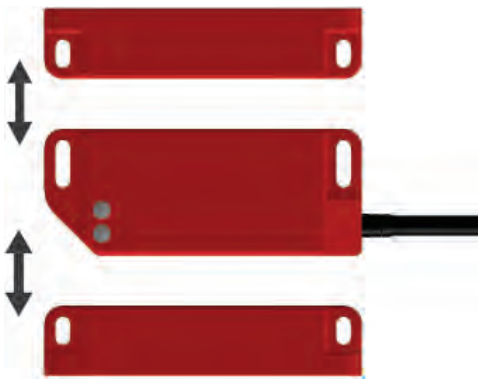
Safety Classification and Reliability Data:

Power Supply	24Vdc +/-10% (Consumption 150mA max.)
Safety Output Maximum Rating	240V 3A ac/dc (2A - QC version)
Auxiliary Output Maximum Rating	24Vdc 0.5A
Dielectric Withstand	4k Vac
Insulator Resistant	100 Mohms
Recommended Setting Gap	5mm
Switching Distance	Sao 10mm Close
(Target to Time)	Sar 15mm Open
Tolerance to Misalignment	5mm in any direction from 5mm setting gap
Approach Speed	600mm/m to 1000mm/s
Body Material	PSA High Specification Polyester
	MSA Stainless Steel 316
Temperature	-25C/45C
Shock Resistance	IEC 68-2-27 11ms 30g
Vibration Resistance	IEC 68-2-6 10-55Hz 1mm
Enclosure Protection	IP69K/IP67
Cable Type	PVC 10 core 7mm OD Conductors 0.25mm^2
Mounting Bolts	2 x M4



SALES NUMBER	SINGLE ACTUATOR SENSING	BODY MATERIAL	CABLE LENGTH
130002	MSA	S/Steel 316	5M
130003	MSA	S/Steel 316	10M
130004	MSA (Automatic Start)	S/Steel 316	QC-M12
130005	MSA (Manual Start)	S/Steel 316	QC-M12

SALES NUMBER	DUAL ACTUATOR SENSING (both actuators are required to be present to close the safety contacts)	BODY MATERIAL	CABLE LENGTH
130102	MSA - D	S/Steel 316	5M
130103	MSA - D	S/Steel 316	10M
130104	MSA - D (Automatic Start)	S/Steel 316	QC-M12
130105	MSA - D (Manual Start)	S/Steel 316	QC-M12



SALES NUMBER	SINGLE ACTUATOR SENSING	BODY MATERIAL	CABLE LENGTH
117002	PSA	Plastic	5M
117003	PSA	Plastic	10M
117004	PSA (Automatic Start)	Plastic	QC-M12
117005	PSA (Manual Start)	Plastic	QC-M12

SALES NUMBER	DUAL ACTUATOR SENSING (both actuators are required to be present to close the safety contacts)	BODY MATERIAL	CABLE LENGTH
117102	PSA - D	Plastic	5M
117103	PSA - D	Plastic	10M
117104	PSA - D (Automatic Start)	Plastic	QC-M12
117105	PSA - D (Manual Start)	Plastic	QC-M12

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

130200	MSA Replacement Actuator
117200	PSA Replacement Actuator

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

RFID Coded Non Contact Safety Interlock Switches

FEATURES & APPLICATION:

IDEM's extensive range of RFID Coded Non Contact safety interlock switches have been developed to provide and maintain a high level of functional safety whilst providing a very high anti-tamper coded activation.

Coding is achieved by using magnetic and radio frequency techniques, both principles need to be satisfied for the switch to operate safely.

They will connect to most popular standard Safety Relays to achieve up to PLe to ISO13849-1.

They are offered in high specification polyester or Stainless Steel 316 mirror polished housings and can be used in almost any environments including areas where high pressure cleaning is a requirement following contamination from foreign particles.

All switches have IP69K ingress protection and are suitable for CIP and SIP processes.

IP69K

The typical sensing distance "on" is 14mm with wide tolerance to guard misalignment after setting.

The RFID sensing provides a tamper resistant operation when the actuator is in the sensing range of the switch.

The full range (both polyester and Stainless Steel 316) are available in two coding types either Master coded or Unique coded.

TYPE 1: **Master Coded** - (any actuator will operate any switch) - used when unique door activation is not required, but the benefit of RFID makes it virtually impossible to be overridden or by-passed by simple means.

TYPE 2: **Unique Code** - 32,000,000 unique codes. These switches are factory set and used when unique activation is required in areas where there are many interlocked doors and security of individual areas is required.

MAIN USER BENEFITS:

- RFID provides a high degree of anti-tamper thereby making it virtually impossible to be overridden.
- Unique RFID or series coding RFID available - this is dependent upon the user's risk assessment.
- Able to connect to most popular Safety Relays to achieve up to PLe ISO13849-1.
- Connect up to 20 switches in series.
- Ability to connect other switches and E-Stops in series.
- Mirror polished Stainless Steel 316 models can be used in virtually any environment that is subject to high levels of cleaning.

FUNCTIONAL SPECIFICATION:

High Functional Safety to ISO13849-1.

Connects to most Safety Relays to maintain PLe.

RFID Coded actuation to provide high tamper proof interlock security on Guard Doors.

Diagnostic LED: LED Green - Indication of Safety Circuits Closed.

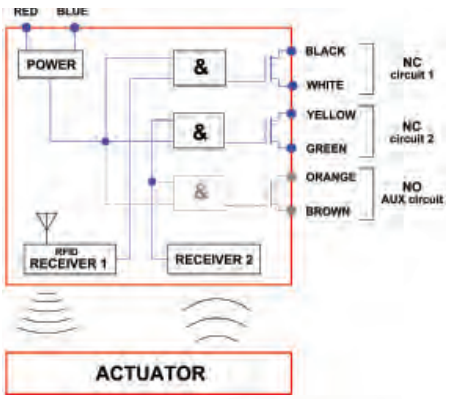
2NC Safety Outputs short circuit protected.

1NO Auxiliary Output for indication of door open.

No moving parts - high switch life and resistance to shock and vibration.

M12 Male 8-way Quick Connector versions available (Flying Lead 250mm (10")).

PRINCIPLE:



SPF

Universal 22mm fixing centres.

LPF

European industry standard fitting

WPF

Industry standard wide fitting.
Front face actuation for large guards.

KPF

Industry standard interlock switch housing.
Can be retrofitted in place of similar mechanical switches.

LMF

European industry standard fitting.
Stainless Steel 316.
Mirror polished finish.

RFID Coded Non Contact **Type: SPF**

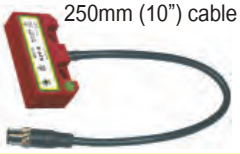
FEATURES:

Universal fitting - established 22mm footprint suitable for most applications
Withstands environments where high humidity or hose down is required
High specification and durable polyester housing
Wide 14mm sensing with high tolerance to misalignment
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

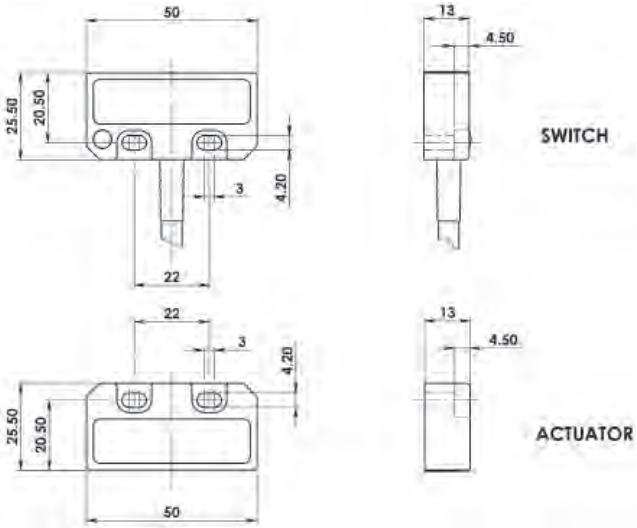
RFID Coded Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

IP69K

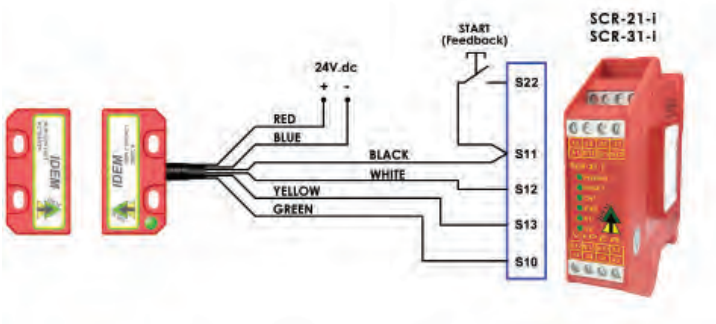
Quick Connect M12 versions fitted with 250mm (10") cable



DIMENSIONS:

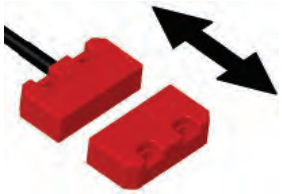


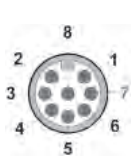
CONNECTION EXAMPLE:

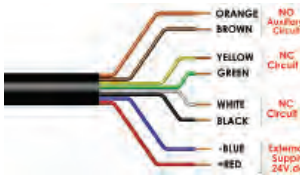


Single switch connected to an SCR-21-i or SCR-31-i to give Dual Channel Monitoring with Manual Start.

OPERATING DIRECTION:







Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO	200mA Max. 24Vdc
5	Brown	Auxiliary NO	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

Standards: ISO14119 EN60947-5-3 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Minimum switched current:	10V.dc 1mA
Dielectric Withstand:	250V.ac
Insulation Resistance:	100 Mohms
Recommended setting gap:	5mm
Switching Distance:	Sao 8mm Close Sar 20mm Open
Tolerance to Misalignment:	5mm in any direction from 5mm setting gap
Switching frequency:	1.0 Hz maximum
Approach speed:	200mm/m to 1000mm/s
Body material:	Polyester
Temperature Range:	-25/80C
Enclosure Protection:	IP67/IP69K
Cable Type:	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts:	2 x M4 Tightening torque 1.0 Nm
Mounting Position:	Any

Characteristic Data according to IEC62061 (used as a sub system):

Safety Integrity Level	SIL3
PFH (1/h)	4.77E-10 Corresponds to 4.8% of SIL3
PFD	4.18E-05 Corresponds to 4.2% of SIL3
Proof Test Interval T_1	20a

Characteristic Data according to EN ISO13849-1:

Performance Level	e If both channels are used in combination with a SIL3/PLe control device
Category	Cat4
MTTFd	1100a
Diagnostic Coverage DC	99% (high)
Number of operating days per year:	d_{op} = 365d
Number of operating hours per day:	h_{op} = 24h
B10d	not mechanical parts implemented

When the product is used deviant from these assumptions (different load, operating frequency, etc.) the values have to be adjusted accordingly.

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
405101	SPF-M-RFID	2M
405102	SPF-M-RFID	5M
405103	SPF-M-RFID	10M
405104	SPF-M-RFID	QC-M12
405201	Replacement Actuator Master Coded	

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

SALES NUMBER	UNIQUELY CODED (every switch unique activation)	CABLE LENGTH
405001	SPF-U-RFID	2M
405002	SPF-U-RFID	5M
405003	SPF-U-RFID	10M
405004	SPF-U-RFID	QC-M12

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

RFID Coded Non Contact **Type: LPF**

FEATURES:

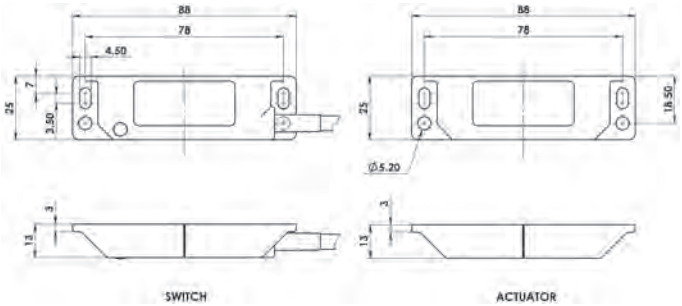
Popular European fitting suitable for all industry applications
LED indication
Can be high pressure hosed at high temperature due to IP69K rating
Wide sensing at 14mm with high tolerance to misalignment
High specification polyester housing with integral back plate
Quick Connect versions available
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Magnet holding option available for use with small guards

RFID Coded Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

IP69K

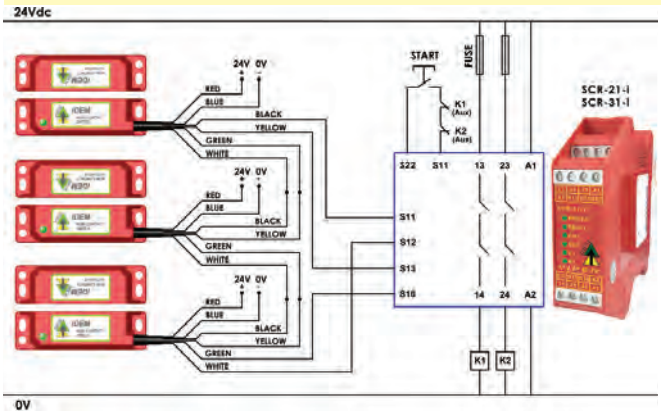
Quick Connect M12 versions fitted with 250mm (10") cable

DIMENSIONS:

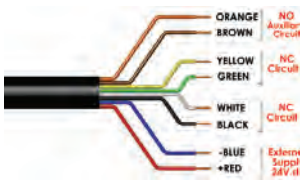


OPERATING DIRECTION:

CONNECTION EXAMPLE



Three switches connected in series to an SCR-21-i or SCR-31-i to give
Dual Channel monitoring with monitored Manual Start and Contactor Feedback Check



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO	200mA Max. 24Vdc
5	Brown	Auxiliary NO	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

Standards: ISO14119 EN60947-5-3 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Minimum switched current:	10V.dc 1mA
Dielectric Withstand:	250V.ac
Insulation Resistance:	100 Mohms
Recommended setting gap:	5mm
Switching Distance:	Sao 8mm Close Sar 20mm Open
Tolerance to Misalignment:	5mm in any direction from 5mm setting gap
Switching frequency:	1.0 Hz maximum
Approach speed:	200mm/m to 1000mm/s
Body material:	Polyester
Temperature Range:	-25/80C
Enclosure Protection:	IP67/IP69K
Cable Type:	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts:	2 x M4 Tightening torque 1.0 Nm
Mounting Position:	Any

Characteristic Data according to IEC62061 (used as a sub system):

Safety Integrity Level	SIL3
PFH (1/h)	4.77E-10 Corresponds to 4.8% of SIL3
PFD	4.18E-05 Corresponds to 4.2% of SIL3
Proof Test Interval T_1	20a

Characteristic Data according to EN ISO13849-1:

Performance Level	e If both channels are used in combination with a SIL3/PLe control device
Category	Cat4
MTTFd	1100a
Diagnostic Coverage DC	99% (high)
Number of operating days per year:	d_{op} = 365d
Number of operating hours per day:	h_{op} = 24h
B10d	not mechanical parts implemented

When the product is used deviant from these assumptions (different load, operating frequency, etc.) the values have to be adjusted accordingly.

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
404101	LPF-M-RFID	2M
404102	LPF-M-RFID	5M
404103	LPF-M-RFID	10M
404104	LPF-M-RFID	QC-M12
404201	Replacement Actuator Master Coded	

SALES NUMBER	UNIQUELY CODED (every switch unique activation)	CABLE LENGTH
404001	LPF-U-RFID	2M
404002	LPF-U-RFID	5M
404003	LPF-U-RFID	10M
404004	LPF-U-RFID	QC-M12

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

RFID Coded Non Contact **Type: WPF**

FEATURES:

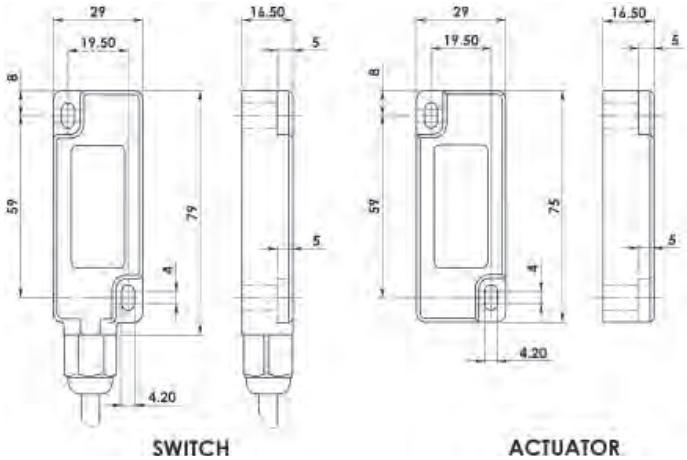
Designed with a slim fitting making it suitable for all industry applications
Wide 14mm sensing with high tolerance to misalignment
High specification and durable polyester housing
Wide 14mm sensing with high tolerance to misalignment
LED indication - no moving parts - survives shock and vibration
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

Coded Magnetic Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

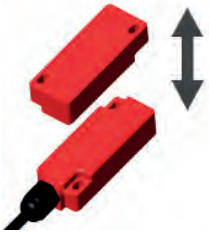
IP69K

Quick Connect M12 versions fitted with 250mm (10") cable

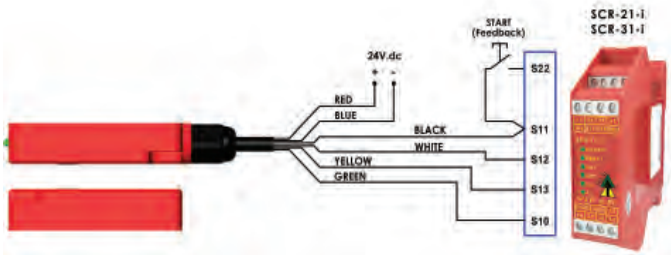
DIMENSIONS:



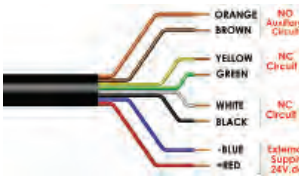
OPERATING DIRECTION:



CONNECTION EXAMPLE



One switch connected to an SCR-21-i or SCR-31-i to give Dual Channel monitoring with manual start and contactor feedback check.



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO	200mA Max. 24Vdc
5	Brown	Auxiliary NO	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
407102	WPF-M-RFID	5M
407103	WPF-M-RFID	10M
407104	WPF-M-RFID	QC-M12
407201	Replacement Actuator Master Coded	

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

Standards: ISO14119 EN60947-5-3 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Minimum switched current:	10V.dc 1mA
Dielectric Withstand:	250V.ac
Insulation Resistance:	100 Mohms
Recommended setting gap:	5mm
Switching Distance:	Sao 8mm Close Sar 20mm Open
Tolerance to Misalignment:	5mm in any direction from 5mm setting gap
Switching frequency:	1.0 Hz maximum
Approach speed:	200mm/m to 1000mm/s
Body material:	Polyester
Temperature Range:	-25/55C
Enclosure Protection:	IP67/IP69K
Cable Type:	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts:	2 x M4 Tightening torque 1.0 Nm
Mounting Position:	Any

Characteristic Data according to IEC62061 (used as a sub system):

Safety Integrity Level	SIL3
PFH (1/h)	4.77E-10 Corresponds to 4.8% of SIL3
PFD	4.18E-05 Corresponds to 4.2% of SIL3
Proof Test Interval T_1	20a

Characteristic Data according to EN ISO13849-1:

Performance Level	e If both channels are used in combination with a SIL3/PLe control device
Category	Cat4
MTTFd	1100a
Diagnostic Coverage DC	99% (high)
Number of operating days per year:	d_{op} = 365d
Number of operating hours per day:	h_{op} = 24h
B10d	not mechanical parts implemented

When the product is used deviant from these assumptions (different load, operating frequency, etc.) the values have to be adjusted accordingly.

SALES NUMBER	UNIQUELY CODED (every switch unique activation)	CABLE LENGTH
407002	WPF-U-RFID	5M
407003	WPF-U-RFID	10M
407004	WPF-U-RFID	QC-M12

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

RFID Coded Non Contact **Type: KPF**

FEATURES:

Industry housing shape 52mm wide 98mm long 40mm fixing
2NC 1NO semi conductor outputs for connection to safety relay
Visual LED indication of switch status
Fully encapsulated sealing and pre-wired 2m, 5m or 10m cable
Wide 14mm sensing with high tolerance to misalignment
M12 8 Way Quick Connect version available (flying lead 150mm)

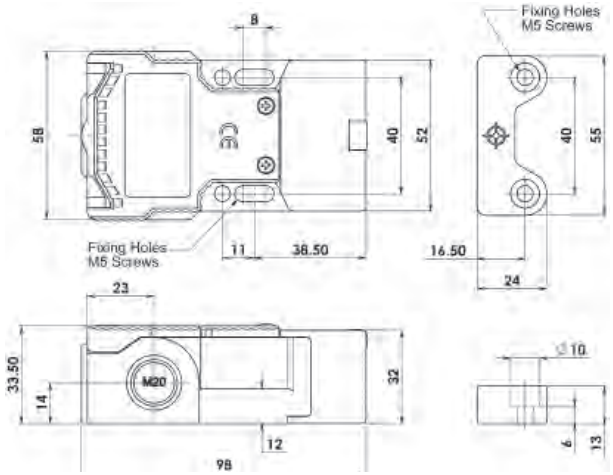
RFID Coded Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

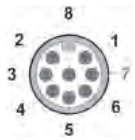
IP69K

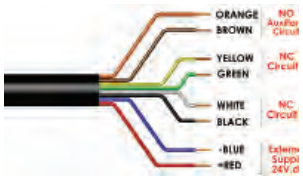
APPLICATION:

IDEM KPF RFID Coded Non Contact switches have been designed to interlock hinged, sliding or removable guard doors. They have an industry standard fixing and are specifically advantageous where:
(a) severe guard alignment exists using traditional tongue type versions
(b) long mechanical life is required (no moving or touching parts)
When used in combination with Dual Channel Safety Relays they can be used to provide up to PLe ISO13849-1 SIL3 EN62061.

DIMENSIONS:







Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO	200mA Max. 24Vdc
5	Brown	Auxiliary NO	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

Standards: ISO14119 EN60947-5-3 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Minimum switched current:	10V.dc 1mA
Dielectric Withstand:	250V.ac
Insulation Resistance:	100 Mohms
Recommended setting gap:	5mm
Switching Distance:	Sao 8mm Close Sar 20mm Open
Tolerance to Misalignment:	5mm in any direction from 5mm setting gap
Switching frequency:	1.0 Hz maximum
Approach speed:	200mm/m to 1000mm/s
Body material:	Polyester
Temperature Range:	-25/55C
Enclosure Protection:	IP67/IP69K
Cable Type:	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts:	2 x M4 Tightening torque 1.0 Nm
Mounting Position:	Any

Characteristic Data according to IEC62061 (used as a sub system):

Safety Integrity Level	SIL3
PFH (1/h)	4.77E-10 Corresponds to 4.8% of SIL3
PFD	4.18E-05 Corresponds to 4.2% of SIL3
Proof Test Interval T_1	20a

Characteristic Data according to EN ISO13849-1:

Performance Level	e If both channels are used in combination with a SIL3/PLe control device
Category	Cat4
MTTFd	1100a
Diagnostic Coverage DC	99% (high)
Number of operating days per year:	d_{op} = 365d
Number of operating hours per day:	h_{op} = 24h
B10d	not mechanical parts implemented

When the product is used deviant from these assumptions (different load, operating frequency, etc.) the values have to be adjusted accordingly.

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
408101	KPF-M-RFID END Cable (pre-wired)	5M
408102	KPF-M-RFID END Cable (pre-wired)	10M
408103	KPF-M-RFID END Cable (pre-wired)	QC-M12
408104	KPF-M-RFID LEFT Cable (pre-wired)	5M
408105	KPF-M-RFID LEFT Cable (pre-wired)	10M
408106	KPF-M-RFID LEFT Cable (pre-wired)	QC-M12
408107	KPF-M-RFID RIGHT Cable (pre-wired)	5M
408108	KPF-M-RFID RIGHT Cable (pre-wired)	10M
408109	KPF-M-RFID RIGHT Cable (pre-wired)	QC-M12
408201	Replacement Actuator Master Coded	

SALES NUMBER	UNIQUELY CODED (every switch unique activation)	CABLE LENGTH
408001	KPF-U-RFID END Cable (pre-wired)	5M
408002	KPF-U-RFID END Cable (pre-wired)	10M
408003	KPF-U-RFID END Cable (pre-wired)	QC-M12
408004	KPF-U-RFID LEFT Cable (pre-wired)	5M
408005	KPF-U-RFID LEFT Cable (pre-wired)	10M
408006	KPF-U-RFID LEFT Cable (pre-wired)	QC-M12
408007	KPF-U-RFID RIGHT Cable (pre-wired)	5M
408008	KPF-U-RFID RIGHT Cable (pre-wired)	10M
408009	KPF-U-RFID RIGHT Cable (pre-wired)	QC-M12

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

RFID Coded Non Contact **Type: LMF Stainless Steel 316**

FEATURES:

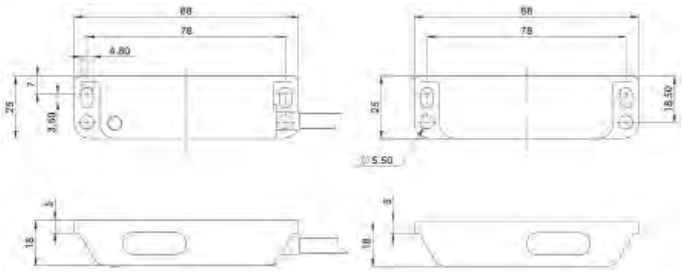
Specifically designed for Food Processing applications
Suitable for CIP cleaning - Food Splash Zones EHEDG Guidelines
Wide 14mm sensing with high tolerance to misalignment
LED indication
Can be high pressure hosed with detergent at high temperature
Up to: PLe ISO13849-1
2NC 1NO circuits - high switching life - no moving parts
Quick Connect versions available

RFID Coded Actuation
Switching Tolerance up to 14mm
Will operate with most Safety Relays

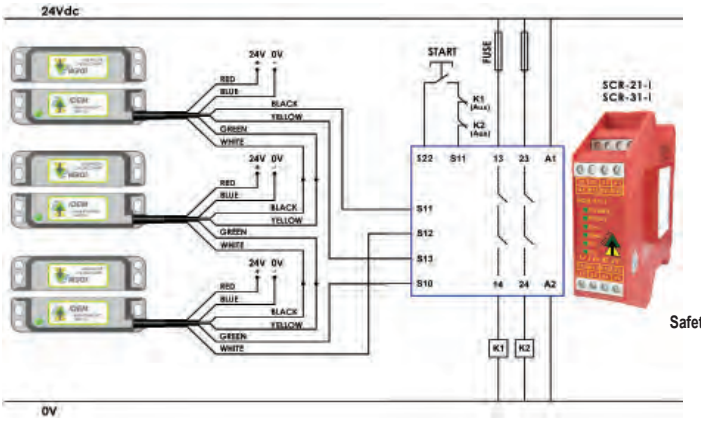
IP69K

Quick Connect M12 versions fitted with 250mm (10") cable

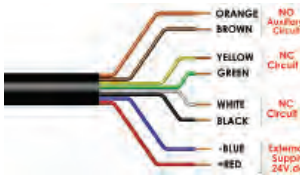
DIMENSIONS:



CONNECTION EXAMPLE



Three 2NC version switches connected in series to an SCR-21-i or SCR-31-i to give Dual Channel monitoring with Manual Start and Contactor Feedback Check



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO	200mA Max. 24Vdc
5	Brown	Auxiliary NO	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
406102	LMF-M-RFID	5M
406103	LMF-M-RFID	10M
406104	LMF-M-RFID	QC-M12
406201	Replacement Actuator Master Coded	

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

OPERATING DIRECTION:

Standards: ISO14119 EN60947-5-3 EN60204-1 ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Minimum switched current:	10V.dc 1mA
Dielectric Withstand:	250V.ac
Insulation Resistance:	100 Mohms
Recommended setting gap:	5mm
Switching Distance:	Sao 8mm Close Sar 20mm Open
Tolerance to Misalignment:	5mm in any direction from 5mm setting gap
Switching frequency:	1.0 Hz maximum
Approach speed:	200mm/m to 1000mm/s
Body material:	Stainless Steel 316 (mirror polished finish)
Temperature Range:	-25/80C (105C for CIP/SIP)
Enclosure Protection:	IP67/IP69K
Cable Type:	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts:	2 x M4 Tightening torque 1.0 Nm
Mounting Position:	Any

Characteristic Data according to IEC62061 (used as a sub system):

Safety Integrity Level	SIL3
PFH (1/h)	4.77E-10 Corresponds to 4.8% of SIL3
PFD	4.18E-05 Corresponds to 4.2% of SIL3
Proof Test Interval T_1	20a

Characteristic Data according to EN ISO13849-1:

Performance Level	e If both channels are used in combination with a SIL3/PLe control device
Category	Cat4
MTTFd	1100a
Diagnostic Coverage DC	99% (high)
Number of operating days per year:	d_{op} = 365d
Number of operating hours per day:	h_{op} = 24h
B10d	not mechanical parts implemented

When the product is used deviant from these assumptions (different load, operating frequency, etc.) the values have to be adjusted accordingly.

SALES NUMBER	UNIQUELY CODED (every switch unique activation)	CABLE LENGTH
406002	LMF-U-RFID	5M
406003	LMF-U-RFID	10M
406004	LMF-U-RFID	QC-M12

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

RFID Coded Non Contact with Auto Test **Type: RAMZSense LPZ**

FEATURES & APPLICATION:

(Pending)

IDEM's RAMZSense LPZ Intelligent Series Non Contact Coded switch has been developed to provide and maintain a high level of functional safety whilst providing tamper proof RFID coded activation.

They will connect to most popular standard Safety Relays to maintain a PLe Safety Level even with switches connected in series.

They are offered in high specification plastic housings and can be used in almost any environment including areas where high pressure cleaning following contamination from foreign particles is a requirement.

They have IP69K ingress protection and are suitable for CIP and SIP processes.

They have easy to understand LED diagnostic functions and provide auxiliary outputs for extra diagnostic signals to PLCs or computers.

The typical sensing distance "ON" is 12mm with wide tolerance to guard misalignment after setting.

Coding is achieved by using magnetic and radio frequency techniques, both principles need to be satisfied for the switch to operate safely.

The RFID sensing provides a tamper resistant operation when the actuator is in the sensing range of the switch.

The RAMZSense LPZ switches are available in 2 Versions:

VERSION 1: Type M Master code - by series (any actuator will operate any switch) used when unique door activation is not required, but the benefit of RFID makes it virtually impossible to be overridden or by-passed by simple means.

VERSION 2: Type U 32,000,000 Unique codes - these switches are factory set and used when **unique** activation is required in areas where there are many interlocked doors and security of individual areas is required.

SAFETY RELIABILITY:

The RAMZSense LPZ switches employ two microprocessors and they use IDEM's intelligent system to check all switches at each safety demand. Safety Reliability up to ISO13849-1 PLe.

MAIN USER BENEFITS:

- RFID provides a high degree of anti-tamper - virtually impossible to override.
- Unique RFID or series coding RFID available.
- Maintains PLe by employing IDEM's technique at each safety demand.
- Connect up to 20 switches in series.
- Able to connect to most popular Safety Relays without the need for special controllers.
- Ability to connect to other switches and Emergency Stops in series.

FUNCTIONAL SPECIFICATION:

High Functional Safety to ISO13849-1 - connects to most Safety Relays to maintain PLe.

RFID Coded actuation to provide high tamper proof interlock security on Guard Doors.

Safety Outputs short circuit protected.

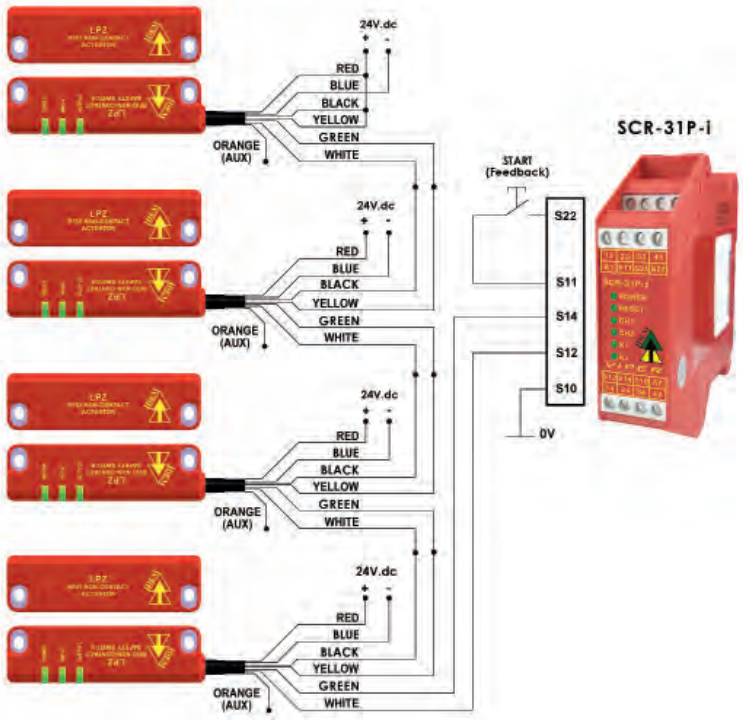
One Auxiliary circuit for indication of door open.

No moving parts - high switch life and resistance to shock and vibration.

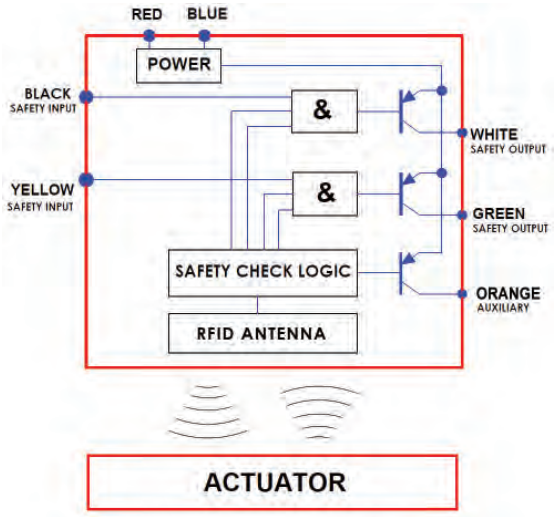
M12 Male 8-way Quick Connector versions available (Flying Lead 250mm (10")).

RFID Coded Non Contact with Auto Test **Type: RAMZSense LPZ**

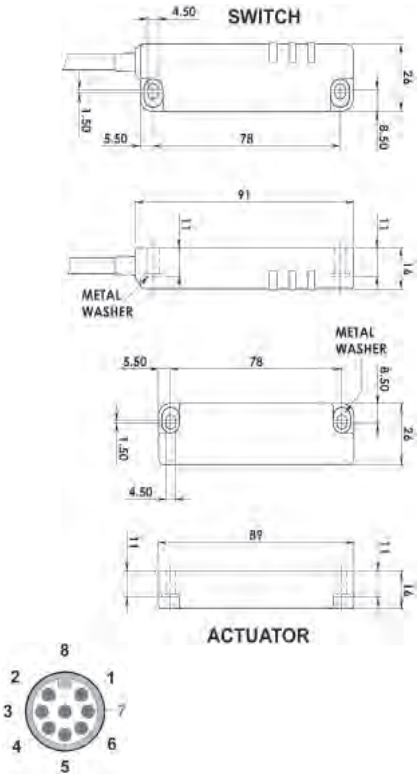
CONNECTION EXAMPLE:



PRINCIPLE:



DIMENSIONS:



Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Flying Lead Colour	Circuit (Actuator Present)
2	Red	Supply +24Vdc
3	Blue	Supply 0Vdc
7	Black	Safety Input 1
1	White	Safety Output 1
4	Yellow	Safety Input 2
6	Green	Safety Output 2
5		Not used
8	Orange	Auxiliary

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed and the actuator is present.

Standards:	ISO14119 EN60947-5-3 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Minimum switched current:	10V.dc 1mA
Dielectric Withstand:	250V.ac
Insulation Resistance:	100 Mohms
Recommended setting gap:	5mm
Switching Distance:	Sao 10mm Close Sar 20mm Open
Tolerance to Misalignment:	5mm in any direction from 5mm setting gap
Switching frequency:	1.0 Hz maximum
Approach speed:	200mm/m to 1000mm/s
Body material:	Polyester
Temperature Range:	-25/80C
Enclosure Protection:	IP67, IP69K
Cable Type:	PVC 6 or 8 core 6mm OD Conductors 0.25mm^2
Mounting Bolts:	2 x M4 Tightening torque 1.0 Nm
Mounting Position:	Any

Characteristic Data according to IEC62061 (used as a sub system):

Safety Integrity Level	SIL3
PFH (1/h)	4.77E-10 Corresponds to 4.8% of SIL3
Proof Test Interval T_1	20a

Characteristic Data according to EN ISO13849-1:

Performance Level	e If both channels are used in combination with a SIL3/PLe control device
Category	Cat4
MTTFd	1100a
Diagnostic Coverage DC	99% (high)
Number of operating days per year:	d_{op} = 365d
Number of operating hours per day:	h_{op} = 24h
B10d	not mechanical parts implemented

When the product is used deviant from these assumptions (different load, operating frequency, etc.) the values have to be adjusted accordingly.

SALES NUMBER	UNIQUELY CODED (every switch unique activation)	CABLE LENGTH
402102	RAMZSense LPZ-U	5M
402103	RAMZSense LPZ-U	10M
402104	RAMZSense LPZ-U	QC-M12

SALES NUMBER	MASTER CODED (same code every switch)	CABLE LENGTH
402002	RAMZSense LPZ-M	5M
402003	RAMZSense LPZ-M	10M
402004	RAMZSense LPZ-M	QC-M12
402200	Replacement Actuator Master Coded	

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way

‘T’ Port Connectivity Non Contact Switches

PLUGGABLE SYSTEM M12 8-WAY CONNECTORS:

EXAMPLE:
Three Non Contact Switches connected in series to give dual circuit safety outputs to machine contactors.
System Parts:

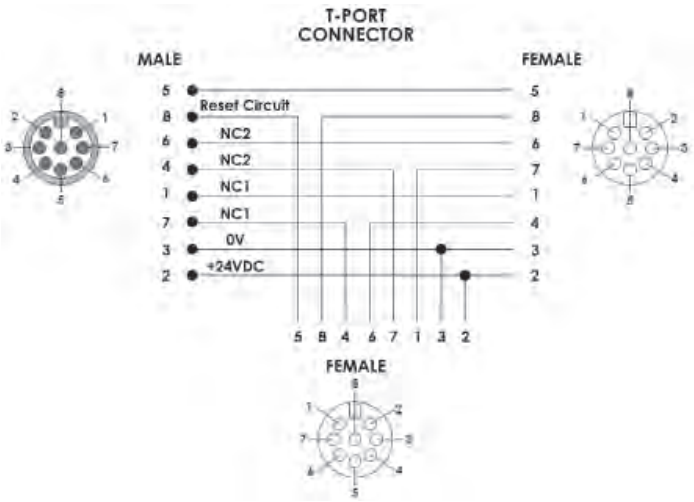
- 3 x Non Contact Switches (Standalone or Coded or Magnetic) with M12 Flying Lead Connectors
- 2 x Patch Cord (either 2m, 5m or 10m)
- 3 x T Port
- 1 x End Short Plug
- 12 Female Lead

PLUGGABLE SYSTEM M12 8-WAY CONNECTORS FOR **MSA & PSA SWITCHES:**

SUITABLE FOR THE FOLLOWING SWITCHES:

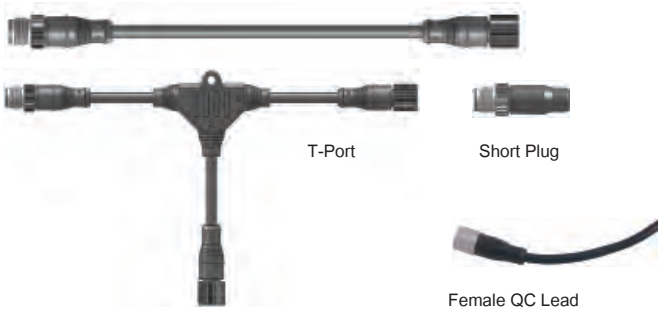
Plastic Housings:
PSA

Stainless Steel 316 Housings:
MSA



Quick Connect QC Flying Lead 250mm M12 8 Way Male Plug	Circuit	
2	Supply +24Vdc	24Vdc +/- 10%
3	Supply 0Vdc	
1	Safety Output 1 (Force Guided Relay)	AC15 250Vac 3A
7	Safety Output 1 (Force Guided Relay	DC13 24Vdc 3A
4	Safety Output 2	AC15 250Vac 3A
6	Safety Output 2	DC13 24Vdc 3A
8	Reset/Check Circuit - Output	
5	Reset/Check Circuit - Automatic Start Version (see Part Number)	
5	Reset/Check Circuit - Manual Start Version (see Part Number)	

Patch Cord: Available in 2m, 5m or 10m lengths



Sales Number	Description
140101	M12 8 Way Female QC Lead 5m
140102	M12 8 Way Female QC Lead 10m
140201	Patch Cord M12 Male to Female 2m
140202	Patch Cord M12 Male to Female 5m
140203	Patch Cord M12 Male to Female 10m
140204	**T Port for MSA/PSA**
140205	**Short Plug for MSA/PSA**

‘T’ Port Connectivity Non Contact Switches

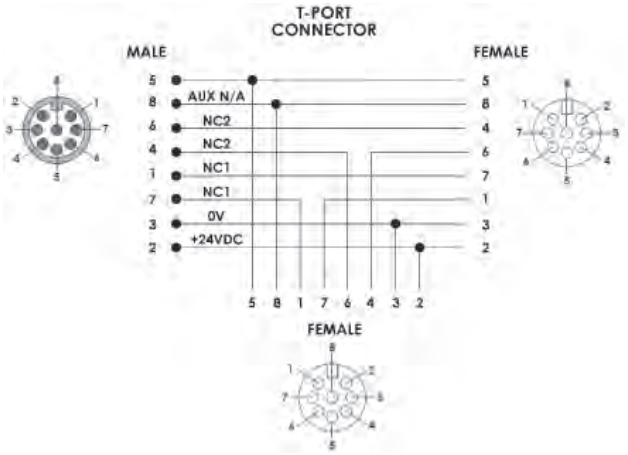
PLUGGABLE SYSTEM M12 8-WAY CONNECTORS FOR **CODED NON CONTACT SWITCHES:**

SUITABLE FOR THE FOLLOWING SWITCHES:

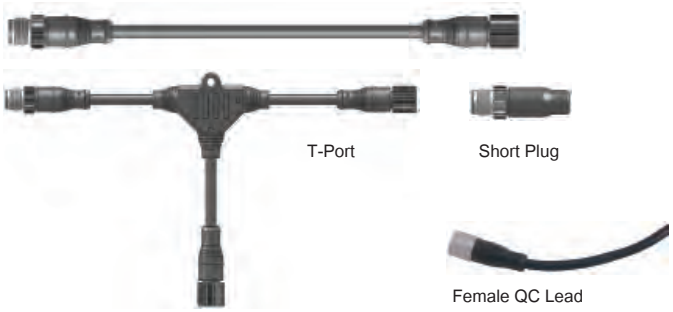
Plastic Housings:
MPC, SPC, LPC, CPC, WPC, RPC, SPF, LPF, KPF

Stainless Steel 316 Housings:
SMC, CMC, LMC, WMC, SMC-F, CMC-F,
RMC, SMC-H, MMC-H, LMF

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Circuit (Actuator Present)	Output Types Solid State
8	Auxiliary NO or NC	200mA Max. 24Vdc
5	Auxiliary NO or NC	
4	Safety NC2 +ve	200mA Max. 24Vdc
6	Safety NC2 -ve	
7	Safety NC1 +ve	200mA Max. 24Vdc
1	Safety NC1 -ve	
2	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Supply 0Vdc	



Patch Cord: Available in 2m, 5m or 10m lengths



Sales Number	Description
140101	M12 8 Way Female QC Lead 5m
140102	M12 8 Way Female QC Lead 10m
140201	Patch Cord M12 Male to Female 2m
140202	Patch Cord M12 Male to Female 5m
140203	Patch Cord M12 Male to Female 10m
140206	**T Port for Coded Non Contact Switches**
140207	**Short Plug for Coded Non Contact Switches**

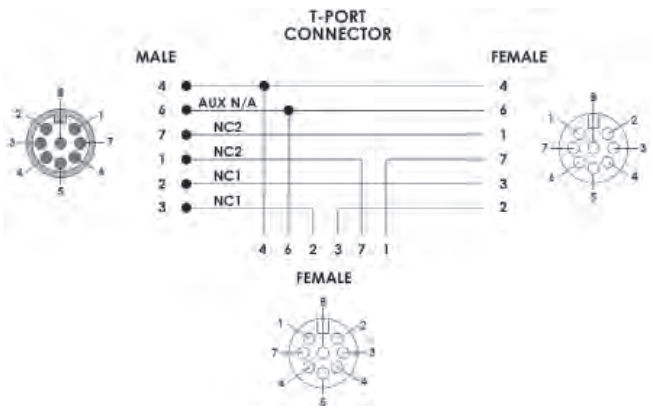
PLUGGABLE SYSTEM M12 8-WAY CONNECTORS FOR **MAGNETIC NON CONTACT SWITCHES:**

SUITABLE FOR THE FOLLOWING SWITCHES:

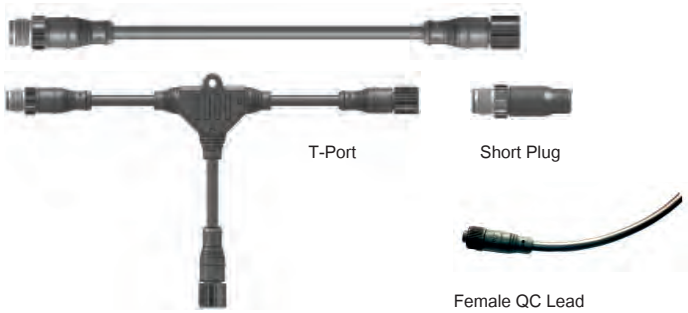
Plastic Housings:
MPR, SPR, LPR, CPR, WPR, RPR

Stainless Steel 316 Housings:
SMR, CMR, LMR, WMR, SMR-F, CMR-F,
RMR, SMR-H, MMR-H

Quick Connect QC M12 8 Way Male Plug Pin view from Switch	Circuit (Actuator Present)
4	NO
6	NO
7	NC2
1	NC2
2	NC1
3	NC1



Patch Cord: Available in 2m, 5m or 10m lengths



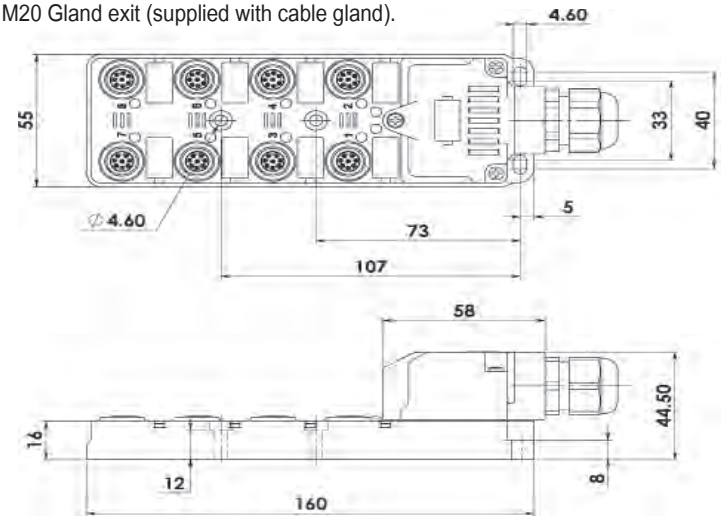
Sales Number	Description
140101	M12 8 Way Female QC Lead 5m
140102	M12 8 Way Female QC Lead 10m
140201	Patch Cord M12 Male to Female 2m
140202	Patch Cord M12 Male to Female 5m
140203	Patch Cord M12 Male to Female 10m
140208	**T Port for Magnetic Non Contact Switches**
140209	**Short Plug for Magnetic Non Contact Switches**

8-Pin M12 Connection Box for **RFID and Coded Non Contact**

FEATURES:

FOR USE WITH 8 PIN M12 RFID & CODED NON CONTACT SWITCHES

Connect up to 8 switches in series to one safety controller.
Configured for dual circuit to a safety controller.
LED status of circuits
Unused ports can be plugged.
Screw clamp terminals.
M20 Gland exit (supplied with cable gland).



SPECIFICATIONS:

General Specifications:

Switch connection type:	8 x 8 Pin M12 Female sockets
Ambient temperature:	-20C. to 40C
Supply Voltage:	24V.dc (+/- 10%)
Maximum current:	500mA
Body Material:	Polyester
Terminals:	Screw type – clamp 16-28AWG conductors
Cable exit:	M20 cable gland (connector options available)
Mounting:	4 x M4 bolts

LEDs:

LED 1-8 (Red):	Auxiliary indication of switch open

For use with switches with the following pin out:

Quick Connect QC M12 8 Way Male Plug	Flying Lead Colour	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO or NC	200mA Max. 24Vdc
5	Brown	Auxiliary NO or NC	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	

SCREW TERMINAL VERSION (M20 Gland Exit)

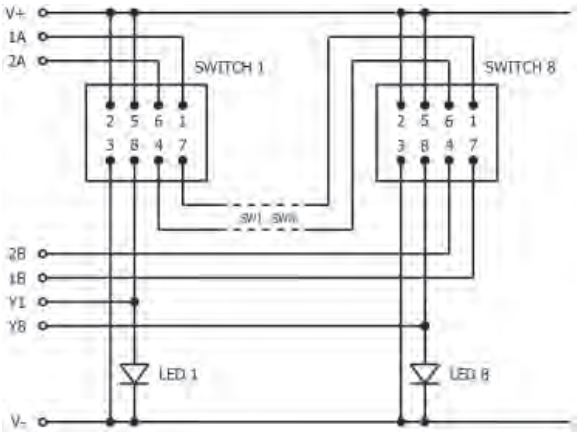
Terminal	Connection
Y1	Auxiliary out +24V.dc Switch 1 open RED LED 1 on
Y2	Auxiliary out +24V.dc Switch 2 open RED LED 2 on
Y3	Auxiliary out +24V.dc Switch 3 open RED LED 3 on
Y4	Auxiliary out +24V.dc Switch 4 open RED LED 4 on
Y5	Auxiliary out +24V.dc Switch 5 open RED LED 5 on
Y6	Auxiliary out +24V.dc Switch 6 open RED LED 6 on
Y7	Auxiliary out +24V.dc Switch 7 open RED LED 7 on
Y8	Auxiliary out +24V.dc Switch 8 open RED LED 8 on
2A	NC 2 Closed when all switches are closed
2B	
1A	NC 1 Closed when all switches are closed
1B	
V +	Supply +24Vdc
V -	Supply 0Vdc

M12 CONNECTOR VERSION

Quick Connect M12 8 Way Male Plug on 250mm (10") Flying Lead	 Pin view from Block
5	Auxiliary +24Vdc Out when any switch is open
4	NC 2 Closed when all switches are closed
6	
7	NC 1 Closed when all switches are closed
1	
2	Supply +24Vdc
3	Supply 0Vdc
8	Not in use

PRE-WIRED VERSION (5m cable length)

Terminal	PVC Cable 9mm diameter	Conductor
Y1	Auxiliary Out +24Vdc Switch 1 Open	Pink
Y2	Auxiliary Out +24Vdc Switch 2 Open	Brown/Green
Y3	Auxiliary Out +24Vdc Switch 3 Open	White/Green
Y4	Auxiliary Out +24Vdc Switch 4 Open	Grey
Y5	Auxiliary Out +24Vdc Switch 5 Open	Red/Blue
Y6	Auxiliary Out +24Vdc Switch 6 Open	Brown
Y7	Auxiliary Out +24Vdc Switch 7 Open	Violet
Y8	Auxiliary Out +24Vdc Switch 8 Open	Grey/Pink
2A	NC2 Closed when all switches closed	Black
2B		White
1A	NC1 Closed when all switches closed	Yellow
1B		Green
V +	Supply +24Vdc	Red
V -	Supply 0Vdc	Blue



ORDERING:

Sales Number	Accessories and Description
140201	Patch Cord M12 Male to Female 2m
140202	Patch Cord M12 Male to Female 5m
140203	Patch Cord M12 Male to Female 10m
140205	**Short Plug for Coded Non Contact Switches**

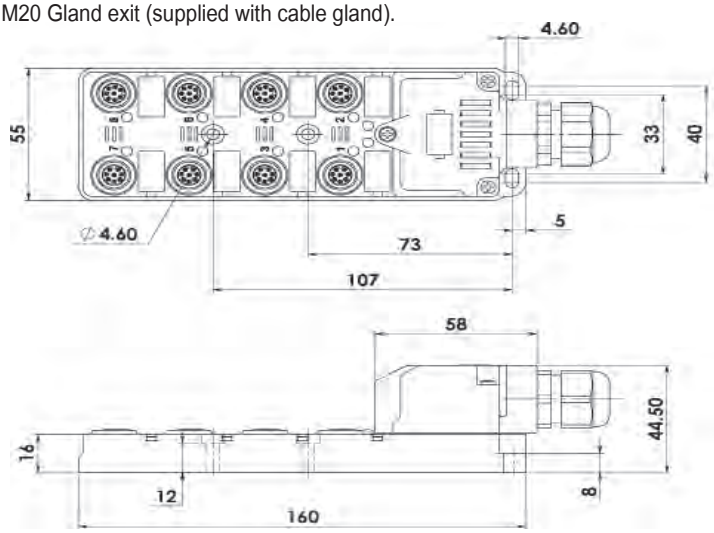
Sales Number	NON CONTACT RFID & CODED SWITCHES CONNECTION BOX
140210	Connection Box (Non-Contact RFID and Coded Switches) – Screw terminal
140211	Connection Box (Non-Contact RFID and Coded Switches) – M12 8 way Male
140212	Connection Box (Non-Contact RFID and Coded Switches) – pre-wired 14 core (5m)

8-Pin M12 Connection Box for **Magnetic Non Contact**

FEATURES:

FOR USE WITH 8 PIN M12 MAGNETIC NON CONTACT SWITCHES

Connect up to 8 switches in series to one safety controller.
Configured for dual circuit to a safety controller.
LED status of circuits
Unused ports can be plugged.
Screw clamp terminals.
M20 Gland exit (supplied with cable gland).



SPECIFICATIONS:

General Specifications:

Switch connection type:	8 x 8 Pin M12 Female sockets
Ambient temperature:	-20C. to 40C
Supply Voltage:	24V.dc (+/- 10%)
Maximum current:	500mA
Body Material:	Polyester
Terminals:	Screw type – clamp 16-28AWG conductors
Cable exit:	M20 cable gland (connector options available)
Mounting:	4 x M4 bolts

LEDs:

LED 1-8 (Red):	Auxiliary indication of switch open

For use with switches with the following pin out:

Quick Connect QC M12 8 Way Male Plug	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

SCREW TERMINAL VERSION (M20 Gland Exit)

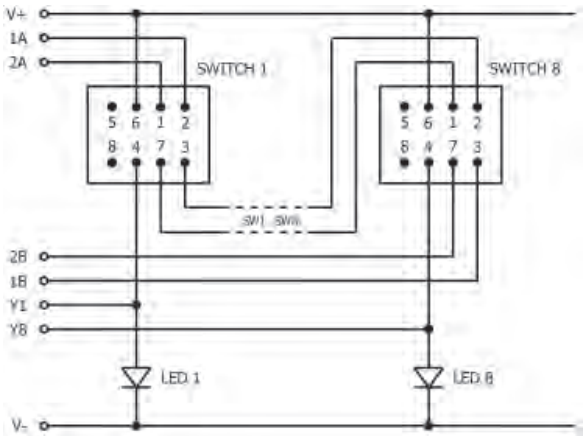
Terminal	Connection
Y1	Auxiliary out +24V.dc Switch 1 open RED LED 1 on
Y2	Auxiliary out +24V.dc Switch 2 open RED LED 2 on
Y3	Auxiliary out +24V.dc Switch 3 open RED LED 3 on
Y4	Auxiliary out +24V.dc Switch 4 open RED LED 4 on
Y5	Auxiliary out +24V.dc Switch 5 open RED LED 5 on
Y6	Auxiliary out +24V.dc Switch 6 open RED LED 6 on
Y7	Auxiliary out +24V.dc Switch 7 open RED LED 7 on
Y8	Auxiliary out +24V.dc Switch 8 open RED LED 8 on
2A	NC 2 Closed when all switches are closed
2B	
1A	NC 1 Closed when all switches are closed
1B	
V +	Supply +24Vdc
V -	Supply 0Vdc

M12 CONNECTOR VERSION

Quick Connect M12 8 Way Male Plug on 250mm (10") Flying Lead	 Pin view from Block
5	Auxiliary +24Vdc Out when any switch is open
4	NC 2 Closed when all switches are closed
6	
7	NC 1 Closed when all switches are closed
1	
2	Supply +24Vdc
3	Supply 0Vdc
8	Not in use

PRE-WIRED VERSION (5m cable length)

Terminal	PVC Cable 9mm diameter	Conductor
Y1	Auxiliary Out +24Vdc Switch 1 Open	Pink
Y2	Auxiliary Out +24Vdc Switch 2 Open	Brown/Green
Y3	Auxiliary Out +24Vdc Switch 3 Open	White/Green
Y4	Auxiliary Out +24Vdc Switch 4 Open	Grey
Y5	Auxiliary Out +24Vdc Switch 5 Open	Red/Blue
Y6	Auxiliary Out +24Vdc Switch 6 Open	Brown
Y7	Auxiliary Out +24Vdc Switch 7 Open	Violet
Y8	Auxiliary Out +24Vdc Switch 8 Open	Grey/Pink
2A	NC2 Closed when all switches closed	Black
2B		White
1A	NC1 Closed when all switches closed	Yellow
1B		Green
V +	Supply +24Vdc	Red
V -	Supply 0Vdc	Blue



ORDERING:

Sales Number	Accessories and Description
140201	Patch Cord M12 Male to Female 2m
140202	Patch Cord M12 Male to Female 5m
140203	Patch Cord M12 Male to Female 10m
140209	**Short Plug for Magnetic Non Contact Switches**

Sales Number	MAGNETIC NON CONTACT SWITCHES CONNECTION BOX
140213	Connection Box (Magnetic Non-Contact Switches) – Screw terminal
140214	Connection Box (Magnetic Non-Contact Switches) – M12 8 way Male
140215	Connection Box (Magnetic Non-Contact Switches) – pre-wired 14 core (5m)

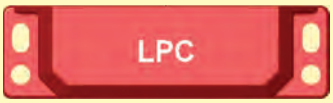
Accessories: **Non Contact Switches**

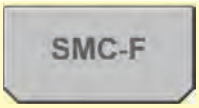
MPC CODED ACTUATOR	
	SALES NUMBER 114200

MMC CODED ACTUATOR	
	SALES NUMBER 131200

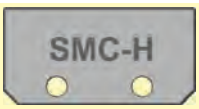
SPC CODED ACTUATOR	
	SALES NUMBER 111200

SMC CODED ACTUATOR	
	SALES NUMBER 139200

LPC CODED ACTUATOR	
	SALES NUMBER 110200

SMC-F CODED ACTUATOR	
	SALES NUMBER 137200

RPC CODED ACTUATOR	
	SALES NUMBER 116200

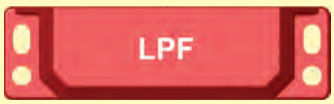
SMC-H CODED ACTUATOR	
	SALES NUMBER 132200

WPC CODED ACTUATOR	
	SALES NUMBER 112200

LMC CODED ACTUATOR	
	SALES NUMBER 133200

CPC CODED ACTUATOR	
	SALES NUMBER 115200

RMC CODED ACTUATOR	
	SALES NUMBER 134200

LPF RFID ACTUATOR (MASTER CODED)	
	SALES NUMBER 404201

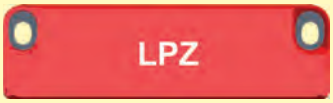
WMC CODED ACTUATOR	
	SALES NUMBER 136200

SPF RFID ACTUATOR (MASTER CODED)	
	SALES NUMBER 405201

CMC CODED ACTUATOR	
	SALES NUMBER 138200

WPF RFID ACTUATOR (MASTER CODED)	
	SALES NUMBER 407201

CMC-F CODED ACTUATOR	
	SALES NUMBER 135200

LPZ RAMZSENSE RFID ACTUATOR (MASTER CODED)	
	SALES NUMBER 402200

LMF RFID ACTUATOR (MASTER CODED)	
	SALES NUMBER 133200

Accessories: **Non Contact Switches**

MPR MAGNETIC ACTUATOR

SALES NUMBER
114201

MMR MAGNETIC ACTUATOR

SALES NUMBER
131201

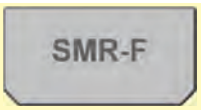
SPR MAGNETIC ACTUATOR

SALES NUMBER
111201

SMR MAGNETIC ACTUATOR

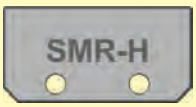
SALES NUMBER
139201

SMR-F MAGNETIC ACTUATOR



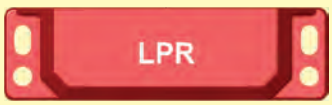
SALES NUMBER
137201

SMR-H MAGNETIC ACTUATOR



SALES NUMBER
132201

LPR MAGNETIC ACTUATOR



SALES NUMBER
110201

LMR MAGNETIC ACTUATOR

SALES NUMBER
133201

RPR MAGNETIC ACTUATOR

SALES NUMBER
116201

RMR MAGNETIC ACTUATOR

SALES NUMBER
134201

WPR MAGNETIC ACTUATOR

SALES NUMBER
112201

WMR MAGNETIC ACTUATOR

SALES NUMBER
136201

CPR MAGNETIC ACTUATOR

SALES NUMBER
113200

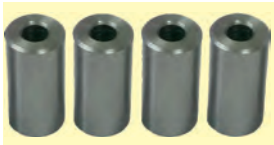
CMR MAGNETIC ACTUATOR

SALES NUMBER
138201

CMR-F MAGNETIC ACTUATOR

SALES NUMBER
135201

NON CONTACT SWITCHES SCREW PACK (Pack of 12)
SALES NUMBER 140124
12 x M4 Screws: 4x10mm, 4x20mm, 4x30mm
4 x Washer: T20 Torx



STAINLESS STEEL MOUNTING SPACERS Packs of 4	Length: 20mm
M4 Clearance Hole	Sales Number: 140171
M5 Clearance Hole	Sales Number: 140172

VIPER Safety Relays Type: SCR-i (with added diagnostics)

SAFETY RELAY FUNCTION:

IDEM's VIPER SCR-i range of Safety Relays have been designed in accordance with EN60204-1 for safety circuits and they can be used in conjunction with Mechanical Interlock Guard Switches, Emergency Stop Switches, Non Contact Guard Switches or Safety Light Curtains to achieve redundant monitoring and fault checking up to PLe/Cat4 ISO13849-1.

When dual circuit monitoring is being used they can check the switch contacts for correct opening and re-closing, monitor for wiring short circuits and can be configured to check for correct opening of external machine contactors. For applications requiring time controlled delay after opening of the guard switch, versions with time delayed output contacts are available (this is variable 0 to 30 seconds). Additional LED diagnostics have been incorporated into the design to show the status of input and output circuits and the reset (feedback) circuit.

FEATURES:

- Dual force guided relay output contacts with high current outputs up to 6A.
- Up to PLe/Cat.4 to ISO13849-1 and SIL3 to EN62061.
- Single or dual channel input.
- Feedback loop for monitoring contactors.
- Short circuit and earth fault monitoring.
- DIN rail mounting - either 22.5mm or 45mm wide housings.
- Automatic or manual start. Monitored manual.
- Instant or delayed contacts.

LED DIAGNOSTIC FEATURES:

See individual product listings.
All relays include a combination of the below diagnostics.

Power	Power applied to device
Reset	Reset Circuit is closed
CH1	External switch input 1 closed
CH2	External switch input 2 closed
K1	Internal relay safety output contacts closed
K2	Internal relay safety output contacts closed
K3	Internal relay safety output contacts closed
K4	Internal relay safety output contacts closed

THE VIPER SCR-i RANGE BASE UNITS:

SCR-21-i

SCR-31-i

SCR-31P-i

EXPANSION UNITS:

SCR-73-i

SCR-31-42TD-i

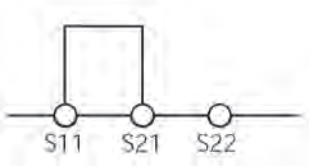
SEU-31-i

SEU-31TD-i

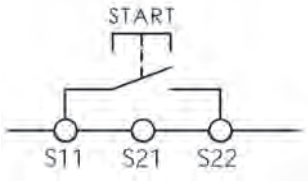
VIPER Safety Relays

FUNCTIONAL DESCRIPTION:

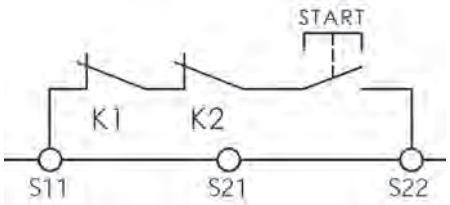
When the inputs are activated and the start/reset condition has been met the safety relay outputs close.
The safety relay outputs open when the inputs are de-activated or if there is a power failure.
Due to the cross monitoring logic of the internal relays the safety relay requires both internal relays to move to open position before the safety relay can be activated again.
When dual channel inputs are used it is not necessary to synchronise switching of the input channels.
When the start/reset circuit is configured to monitored manual reset the start button must perform a make-then-break action before the safety relay is allowed to energise.
External device feedback contacts can be monitored via the start/reset loop.



Auto Reset



Monitored Manual Reset



Contactor Feedback Check (Manual Reset)

INSTALLATION AND MAINTENANCE:

Installation as per EN 60204-1, the device is intended for installation in control cabinets with a minimum degree of protection of IP54.
The safety relay should be mounted on a 35mm DIN rail according to DIN EN 60715 TH35.

The device must be checked once per month for proper function and for signs of tampering and bypassing of the safety function.

SAFETY PRECAUTIONS:

Installation and commissioning of the device must be performed only by authorized personnel.

Observe the country-specific regulations when installing the device.

The electrical connection of the device is only allowed to be made with the device isolated.

The wiring of the device must comply with the instructions in this user information, otherwise there is a risk that the safety function will be lost.

It is not allowed to open the device, tamper with the device or bypass the safety function.

All relevant safety regulations and standards are to be observed.

The overall concept of the control system in which the device is incorporated must be validated by the user.

Failure to observe the safety regulations can result in death, serious injury and serious damage.

VIPER SCR-i PRODUCT SELECTION CHART:

	Supply Voltage	Manual/Automatic Reset	Single/Dual Channel	Instant Output Contacts	Time Delay Output Contacts	Time Delay Range	Diagnostic LEDs	Housing Width (mm)	ISO13849-1 PL (up to)	EN62061 SIL (up to)
Base Units										
SCR-21-i	24V dc/ac	M or A	S or D	2NC 1NO	-	-	6	22.5	PLe	SIL3
SCR-31-i	24V dc/ac	M or A	S or D	3NC 1NO	-	-	6	22.5	PLe	SIL3
SCR-31P-i	24V dc/ac	M or A	S or D	3NC 1NO	-	-	6	22.5	PLe	SIL3
SCR-73-i	24V dc/ac	M or A	S or D	7NC 3NO	-	-	6	45.0	PLe	SIL3
SCR-31-42TD-i	24V dc/ac	M or A	D	3NC 1NO	4NC 2NO	0 to 30 secs	8	45.0	PLe/PLd	SIL3/SIL2
Expansion Units (these can be slave wired to any base unit to increase the output contacts)										
SEU-31-i	24V dc/ac	M or A	N/A	3NC 1NO	-	-	3	22.5	PLe	SIL3
SEU-31TD-i	24V dc/ac	M or A	N/A	-	3NC 1NO	0 to 30 secs	3	22.5	SIL3/SIL2	SIL3/SIL2

Notes:
NC contacts are closed when safety relay is energised - machine is able to start.
NO contacts are closed when safety relay is de-energised - machine stopped or stopping

VIPER Safety Relays **Type: SCR-21-i** (with added diagnostics)

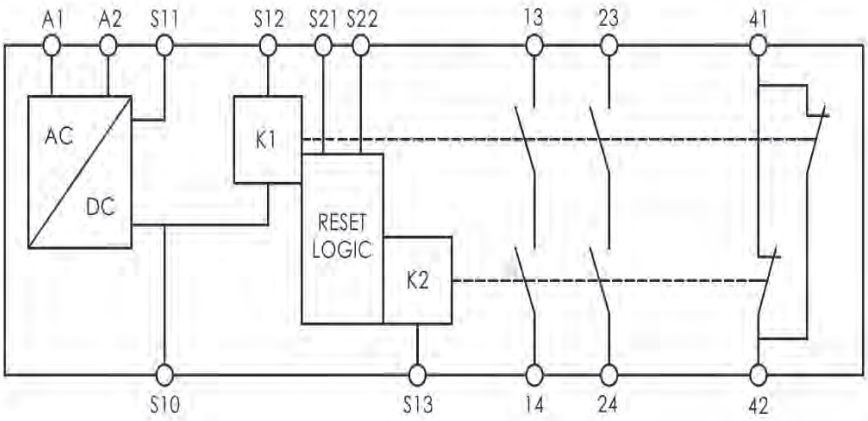
DESCRIPTION:

The Viper Safety Relays range from IDEM are designed to meet the latest safety standards and offer enhanced LED diagnostics and simplified wiring. Applications include the monitoring of safety interlock switches (guard door monitoring), emergency stop devices and sensors.
The SCR-21-i internal logic uses force guided relays to achieve cross monitoring, this ensures that a single fault does not lead to the loss of the safety function and that all faults are detected at or before the next safety demand.

FEATURES:

- Outputs 2NC contacts and 1NO contact.
- Feedback circuit to monitor external contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 4.
- Monitored manual or automatic start.
- Single and dual channel operation.
- Output expansion units available to increase number of outputs.

BLOCK DIAGRAM AND ELECTRICAL CONNECTION:



Electrical Connection

A1 A2	Power 24Vac/dc
S11	Control Output
S10 S13 S12	Control Inputs
S21	Auto Reset Input
S22	Manual Reset Input
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2
41-42	Auxiliary Output Contact

SPECIFICATIONS:

STANDARDS	
EN ISO13849-1 EN ISO13849-2 EN62061 EN60204-1 EN ISO12100	
POWER SUPPLY CIRCUIT	
Operating Voltage	24V AC/DC
Operating Voltage Tolerance	85-110%
Rated Supply Frequency	50Hz-60Hz
Power Consumption	2.5W (24V AC/DC)
CONTROL CIRCUITS	
Rated Output Voltage	24V DC (S11)
Output Current	100mA (S11)
Response Time	100ms
Release Time	25ms
Recovery Time	90ms
OUTPUT CIRCUITS	
Rated Output Voltage	250V AC
Maximum Current per Output	6A
Maximum Total Current all Outputs	8A
Safety Contact Breaking Capacity AC	250V, 1500V, 6A, Ohmic 230V, 4A for AC-15
DC	24V, 30W, 1.25A, Ohmic
Minimum Contact Load	10V 10mA
Minimum Contact Fuses	4A slow blow, 6A fast blow
Contact Material	$AgSnO_2$
Contact Service Life	10×10^6
GENERAL DATE	
Rated Impulse Withstand Voltage	4kV
Rated Insulation Voltage	250V
Degree of Protection	IP20
Temperature Range	-20C to +55C
Degree of Contamination	2
Overvoltage Category	III
Weight	160gr (5.5 oz.)
Mounting	Any position

SAFETY CHARACTERISTICS		
EN62061	SIL3	
ISO13849-1	Ple Category 4	
PFH	4.1E-10 1/h	(0.4% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	3.6E-05	(3.6% of SIL3 (1 E-03)
MTTFd	142a (High)	
DC Av.	99% (High)	

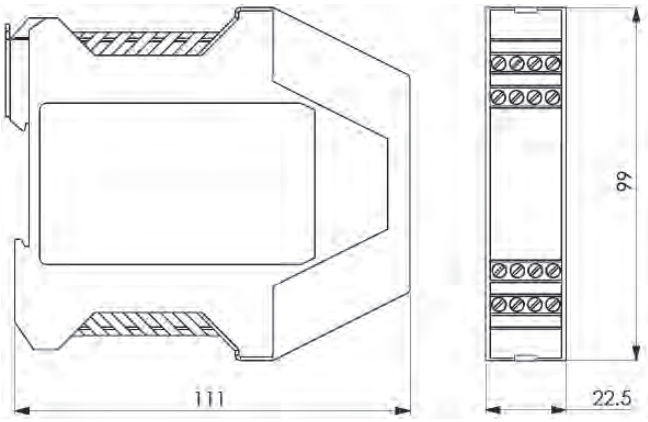
LED DIAGNOSTICS:

WHEN SAFETY RELAY IN OPERATION

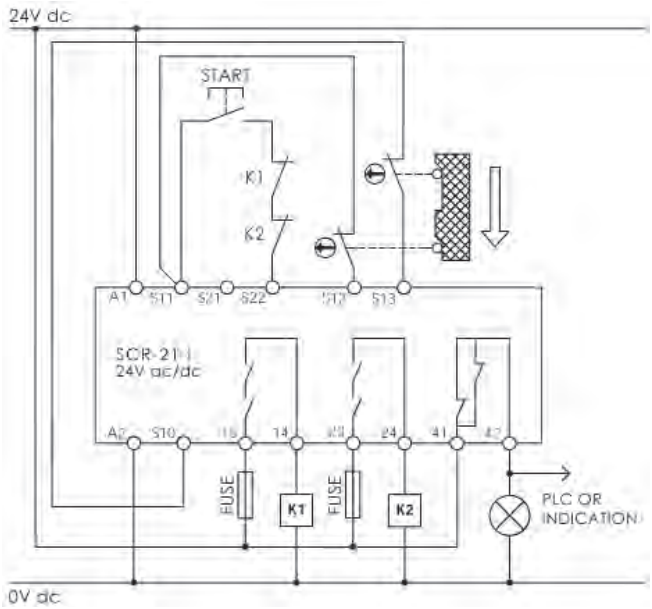
Power	Power applied to device
Reset	Reset Circuit is closed.
CH1	External switch input 1 closed.
CH2	External switch input 2 closed.
K1	Internal relay safety output contacts closed.
K2	Internal relay safety output contacts closed.

VIPER Safety Relays **Type: SCR-21-i** (with added diagnostics)

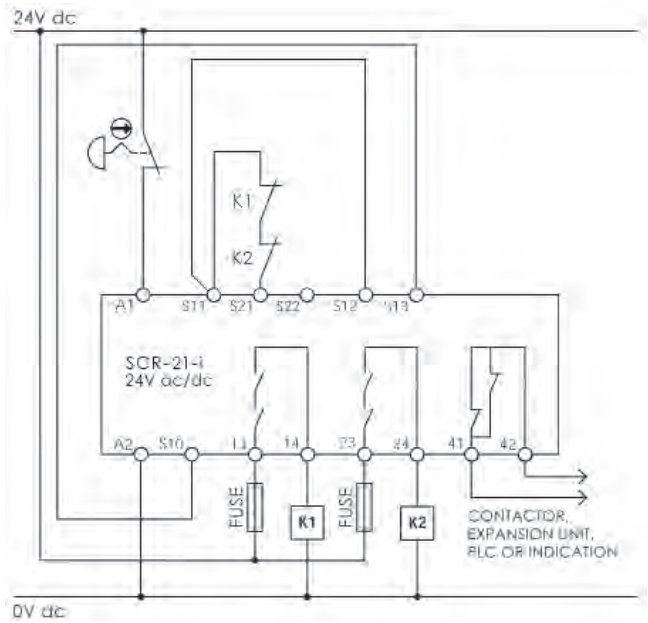
DIMENSIONS:



MANUAL RESTART MODE (Dual Channel) GUARD:



AUTOMATIC RESTART MODE (Single Channel) E-STOP:



SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
280001	SCR-21-i	Standard Screw Terminals	24Vac/dc	2NC	2NC 1NO
280001-P	SCR-21-i	Pluggable Screw Terminals	24Vac/dc	2NC	2NC 1NO

VIPER Safety Relays **Type: SCR-31-i** (with added diagnostics)

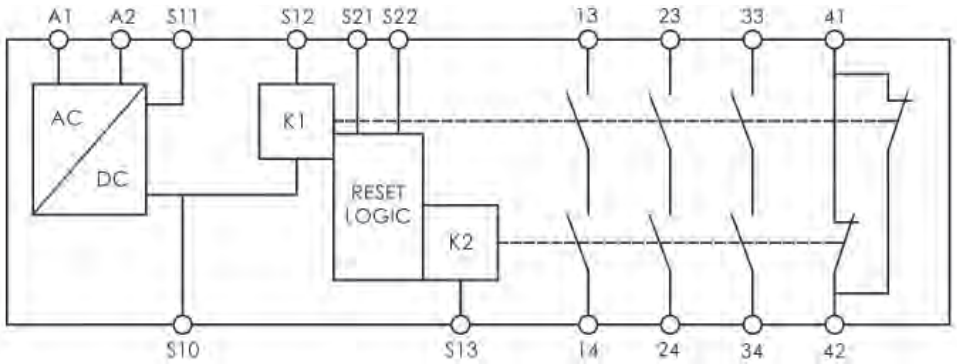
DESCRIPTION:

The Viper Safety Relays range from IDEM are designed to meet the latest safety standards and offer enhanced LED diagnostics and simplified wiring. Applications include the monitoring of safety interlock switches (guard door monitoring), emergency stop devices and sensors.
The SCR-31-i internal logic uses force guided relays to achieve cross monitoring, this ensures that a single fault does not lead to the loss of the safety function and that all faults are detected at or before the next safety demand.

FEATURES:

- Outputs 3NC contacts and 1NO contact.
- Feedback circuit to monitor external contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 4.
- Monitored manual or automatic start.
- Single and dual channel operation.
- Output expansion units available to increase number of outputs.

BLOCK DIAGRAM AND ELECTRICAL CONNECTION:



Electrical Connection

A1 A2	Power 24Vac/dc
S11	Control Output
S10 S13 S12	Control Inputs
S21	Auto Reset Input
S22	Manual Reset Input
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2
33-34	Safety Output Contact 3

SPECIFICATIONS:

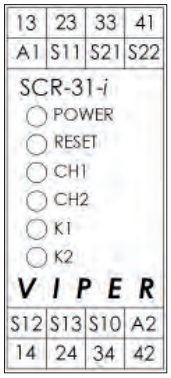
STANDARDS	
EN ISO13849-1 EN62061 EN60204-1 EN ISO12100	
POWER SUPPLY CIRCUIT	
Operating Voltage	24V AC/DC
Operating Voltage Tolerance	85-110%
Rated Supply Frequency	50Hz-60Hz
Power Consumption	2.5W (24V AC/DC)
CONTROL CIRCUITS	
Rated Output Voltage	24V DC (S11)
Output Current	100mA (S11)
Response Time	100ms
Release Time	25ms
Recovery Time	90ms
OUTPUT CIRCUITS	
Rated Output Voltage	250V AC
Maximum Current per Output	6A
Maximum Total Current all Outputs	8A
Safety Contact Breaking Capacity AC	250V, 1500V, 6A, Ohmic 230V, 4A for AC-15
DC	24V, 30W, 1.25A, Ohmic
Minimum Contact Load	10V 10mA
Minimum Contact Fuses	4A slow blow, 6A fast blow
Contact Material	$AgSnO_2$
Contact Service Life	10×10^6
GENERAL DATE	
Rated Impulse Withstand Voltage	4kV
Rated Insulation Voltage	250V
Degree of Protection	IP20
Temperature Range	-20C to +55C
Degree of Contamination	2
Overvoltage Category	III
Weight	160gr (5.5 oz.)
Mounting	Any position

SAFETY CHARACTERISTICS		
EN62061	SIL3	
ISO13849-1	Ple Category 4	
PFH	4.1E-10 1/h	(0.4% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	3.6E-05	(3.6% of SIL3 (1 E-03)
MTTFd	142a (High)	
DC Av.	99% (High)	

LED DIAGNOSTICS:

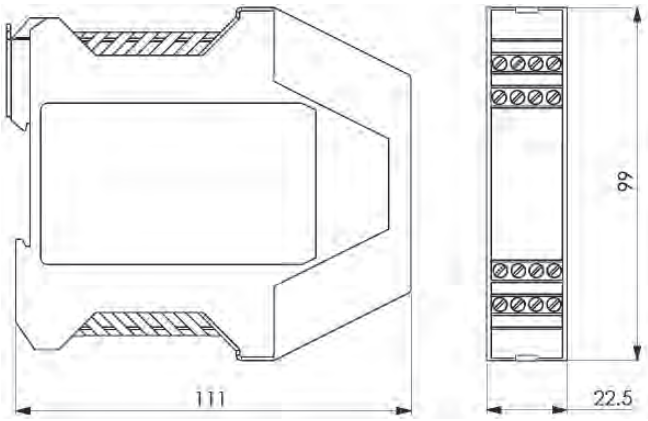
WHEN SAFETY RELAY IN OPERATION

Power	Power applied to device
Reset	Reset Circuit is closed.
CH1	External switch input 1 closed.
CH2	External switch input 2 closed.
K1	Internal relay safety output contacts closed.
K2	Internal relay safety output contacts closed.

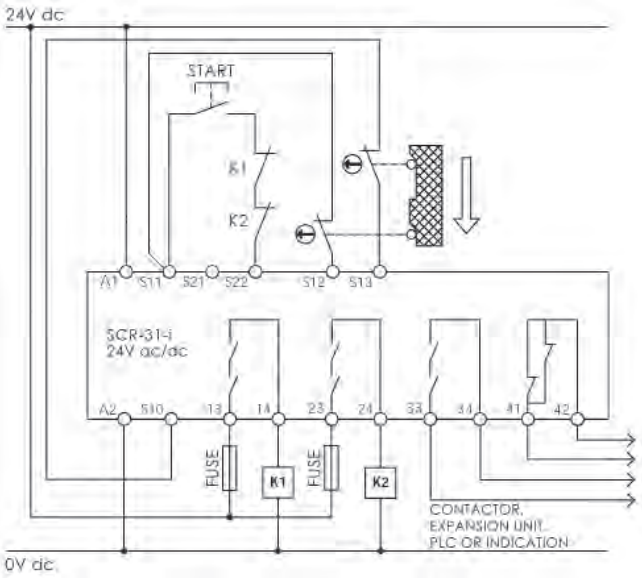


VIPER Safety Relays **Type: SCR-31-i** (with added diagnostics)

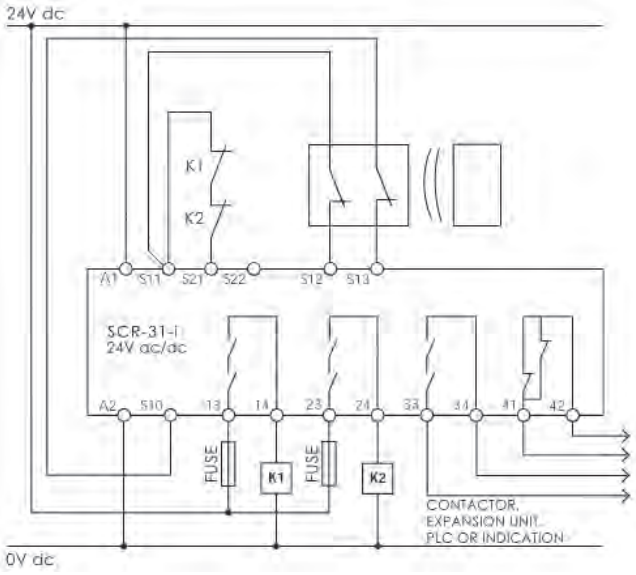
DIMENSIONS:



MANUAL RESTART MODE (Dual Channel) MECHANICAL SWITCHES:



AUTOMATIC RESTART MODE (Dual Channel) NON CONTACT:



SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
280002	SCR-31-i	Standard Screw Terminals	24Vac/dc	2NC	3NC 1NO
280002-P	SCR-31-i	Pluggable Screw Terminals	24Vac/dc	2NC	3NC 1NO

VIPER Safety Relays **Type: SCR-31P-i** (with added diagnostics)

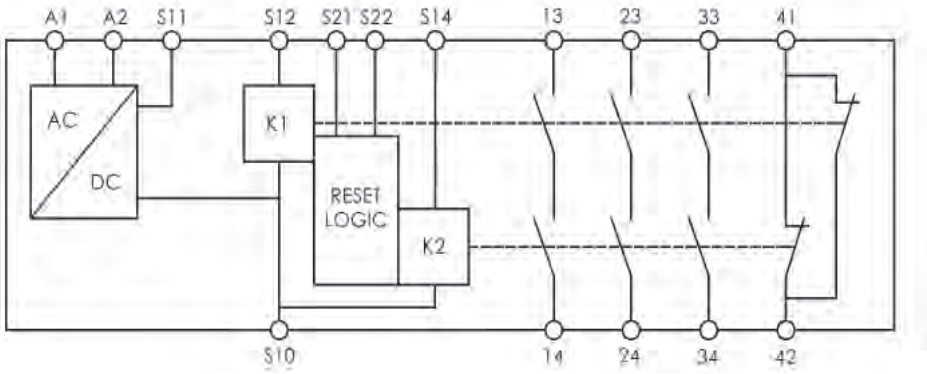
DESCRIPTION:

The Viper Safety Relays range from IDEM are designed to meet the latest safety standards and offer enhanced LED diagnostics and simplified wiring. Applications include the monitoring of safety interlock switches (guard door monitoring), emergency stop devices and sensors.
The SCR-31P-i is designed to be compatible with devices offering OSSD outputs (e.g. safety light curtains), LPZ, KLP-Z, KLM-Z, KLM-Z-4ST, KL3-SS-Z.

FEATURES:

- Outputs 3NC contacts and 1NO contact.
- Feedback circuit to monitor external contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 4.
- Monitored manual or automatic start.
- Single and dual channel operation.
- Output expansion units available to increase number of outputs.

BLOCK DIAGRAM AND ELECTRICAL CONNECTION:



Electrical Connection

A1 A2	Power 24Vac/dc
S11	Control Output
S10 S14 S12	Control Inputs
S21	Auto Reset Input
S22	Manual Reset Input
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2
33-34	Safety Output Contact 3
41-42	Auxiliary Output Contact

SPECIFICATIONS:

STANDARDS	
EN ISO13849-1 EN62061 EN60204-1 EN ISO12100	
POWER SUPPLY CIRCUIT	
Operating Voltage	24V AC/DC
Operating Voltage Tolerance	85-110%
Rated Supply Frequency	50Hz-60Hz
Power Consumption	2.5W (24V AC/DC)
CONTROL CIRCUITS	
Rated Output Voltage	24V DC (S11)
Output Current	100mA (S11)
Response Time	100ms
Release Time	25ms
Recovery Time	90ms
OUTPUT CIRCUITS	
Rated Output Voltage	250V AC
Maximum Current per Output	6A
Maximum Total Current all Outputs	8A
Safety Contact Breaking Capacity AC	250V, 1500V, 6A, Ohmic 230V, 4A for AC-15
DC	24V, 30W, 1.25A, Ohmic
Minimum Contact Load	10V 10mA
Minimum Contact Fuses	4A slow blow, 6A fast blow
Contact Material	$AgSnO_2$
Contact Service Life	10×10^6
GENERAL DATA	
Rated Impulse Withstand Voltage	4kV
Rated Insulation Voltage	250V
Degree of Protection	IP20
Temperature Range	-20C to +55C
Degree of Contamination	2
Overvoltage Category	III
Weight	160gr (5.5 oz.)
Mounting	Any position

SAFETY CHARACTERISTICS		
EN62061	SIL3	
ISO13849-1	Ple Category 4	
PFH	4.1E-10 1/h	(0.4% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	3.6E-05	(3.6% of SIL3 (1 E-03)
MTTFd	142a (High)	
DC Av.	99% (High)	

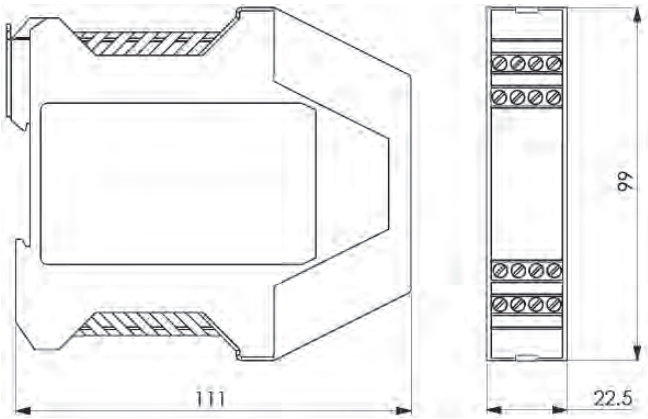
LED DIAGNOSTICS:

WHEN SAFETY RELAY IN OPERATION

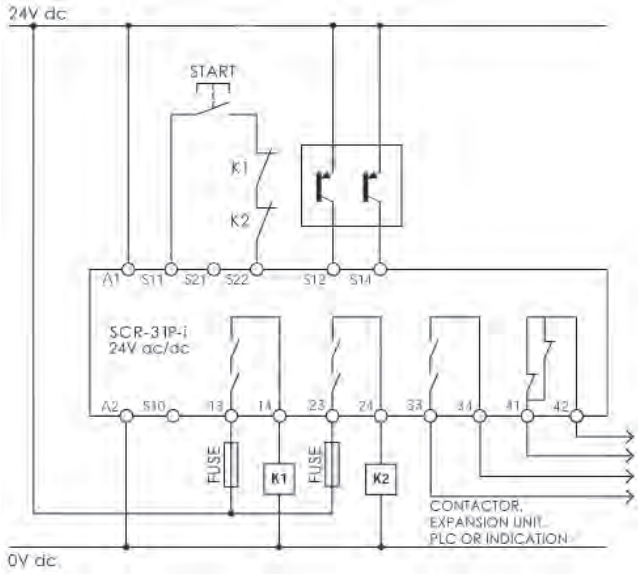
Power	Power applied to device
Reset	Reset Circuit is closed.
CH1	External switch input 1 closed.
CH2	External switch input 2 closed.
K1	Internal relay safety output contacts closed.
K2	Internal relay safety output contacts closed.

VIPER Safety Relays **Type: SCR-31P-i** (with added diagnostics)

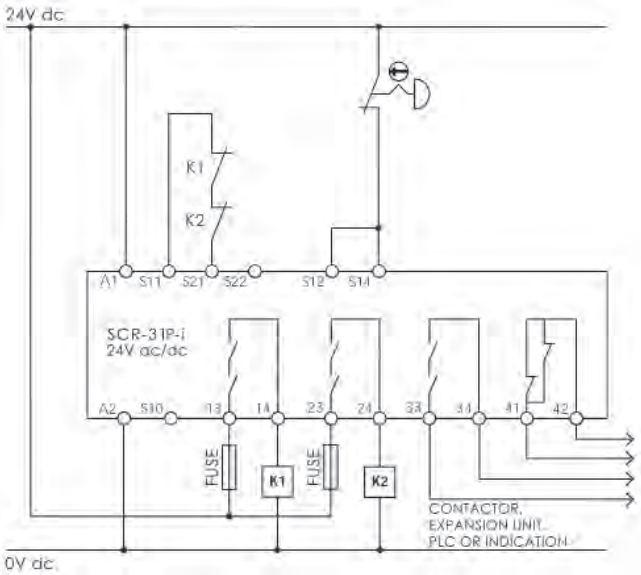
DIMENSIONS:



MANUAL RESTART MODE (Dual Channel) PNP INPUTS:



AUTOMATIC RESTART MODE (Single Channel) E-STOP INPUT:



SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
280003	SCR-31P-i	Standard Screw Terminals	24Vac/dc	2NC	3NC 1NO
280003-P	SCR-31P-i	Pluggable Screw Terminals	24Vac/dc	2NC	3NC 1NO

VIPER Safety Relays **Type: SCR-73-i** (with added diagnostics)

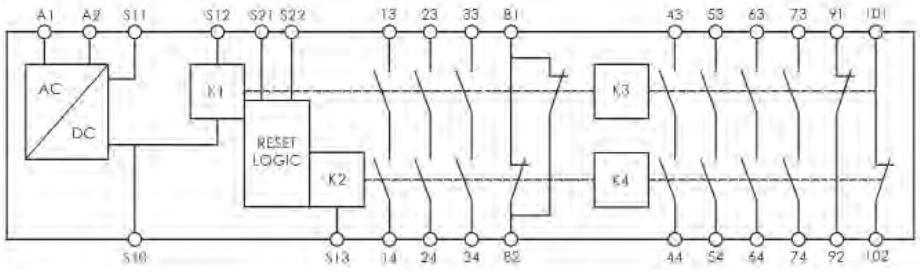
DESCRIPTION:

The Viper Safety Relays range from IDEM are designed to meet the latest safety standards and offer enhanced LED diagnostics and simplified wiring. Applications include the monitoring of safety interlock switches (guard door monitoring), emergency stop devices and sensors.
The SCR-73-i internal logic uses force guided relays to achieve cross monitoring, this ensures that a single fault does not lead to the loss of the safety function and that all faults are detected at or before the next safety demand.

FEATURES:

- Outputs 7NC contacts and 3NO contact.
- Feedback circuit to monitor external contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 4.
- Monitored manual or automatic start.
- Single and dual channel operation.
- Output expansion units available to increase number of outputs.

BLOCK DIAGRAM:



Electrical Connection

A1 A2	Power 24Vac/dc	13-14	Safety Output Contact 1	63-64	Safety Output Contact 6
S11	Control Output	23-24	Safety Output Contact 2	73-74	Safety Output Contact 7
S10 S13 S12	Control Inputs	33-34	Safety Output Contact 3	81-82	Auxiliary Output Contact K1/K2
S21	Auto Reset Input	43-44	Safety Output Contact 4	91-92	Auxiliary Output Contact K3
S22	Manual Reset Input	53-54	Safety Output Contact 5	101-102	Auxiliary Output Contact K4

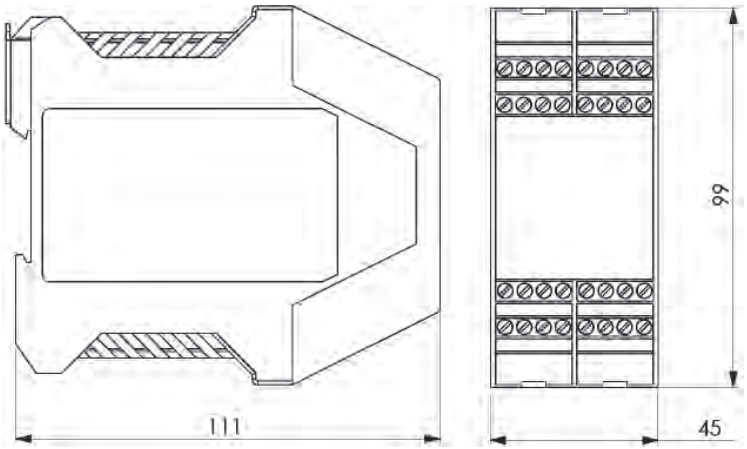
SPECIFICATIONS:

STANDARDS	
EN ISO13849-1 EN62061 EN60204-1 EN ISO12100	
POWER SUPPLY CIRCUIT	
Operating Voltage	24V AC/DC
Operating Voltage Tolerance	85-110%
Rated Supply Frequency	50Hz-60Hz
Power Consumption	5W (24V)
CONTROL CIRCUITS	
Rated Output Voltage	24V DC (S11)
Output Current	100mA (S11)
Response Time	100ms
Release Time	25ms
Recovery Time	90ms
OUTPUT CIRCUITS	
Rated Output Voltage	250V AC
Maximum Current per Output	6A
Maximum Total Current all Outputs	8A
Safety Contact Breaking Capacity AC	250V, 1500V, 6A, Ohmic 230V, 4A for AC-15
DC	24V, 30W, 1.25A, Ohmic
Minimum Contact Load	10V 10mA
Minimum Contact Fuses	4A slow blow, 6A fast blow
Contact Material	$AgSnO_2$
Contact Service Life	10×10^6
GENERAL DATE	
Rated Impulse Withstand Voltage	4kV
Rated Insulation Voltage	250V
Degree of Protection	IP20
Temperature Range	-20C to +55C
Degree of Contamination	2
Overvoltage Category	III
Weight	300gr (10.5 oz.)
Mounting	Any position

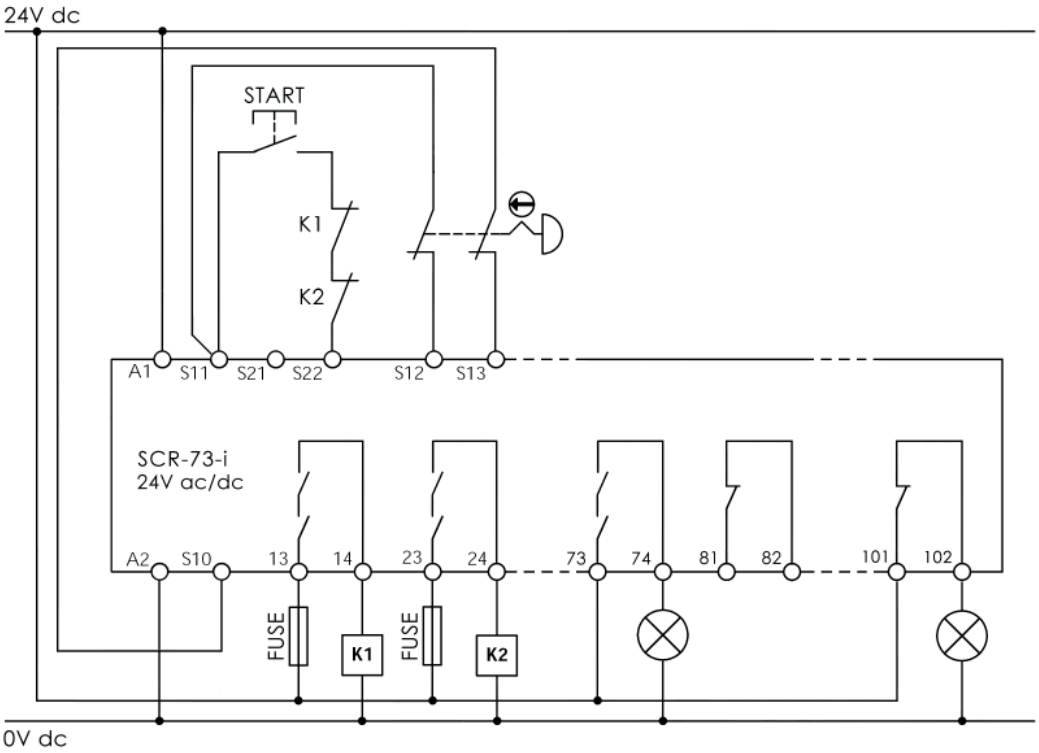
SAFETY CHARACTERISTICS	
EN62061	SIL3
ISO13849-1	Ple Category 4
PFH	8.4E-10 1/h (0.8% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	7.2E-05 (7.2% of SIL3 (1 E-03)
MTTFd	71a (High)
DC Av.	99% (High)

VIPER Safety Relays **Type: SCR-73-i** (with added diagnostics)

DIMENSIONS:



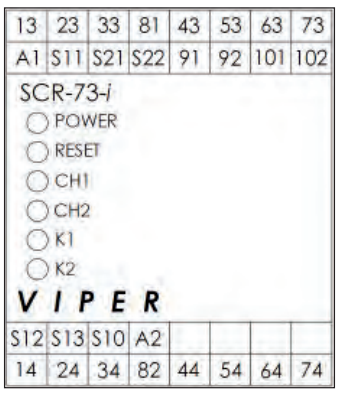
MANUAL RESTART MODE (Dual Channel) E-STOP:



LED DIAGNOSTICS:

WHEN SAFETY RELAY IN OPERATION

Power	Power applied to device
Reset	Reset Circuit is closed.
CH1	External switch input 1 closed.
CH2	External switch input 2 closed.
K1	Internal relay safety output contacts closed.
K2	Internal relay safety output contacts closed.



SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
280005	SCR-73-i	Standard Screw Terminals	24Vac/dc	2NC	7NC 3NO
280005-P	SCR-73-i	Pluggable Screw Terminals	24Vac/dc	2NC	7NC 3NO

VIPER Safety Relays **Type: SCR-31-42TD-i** (added diagnostics)

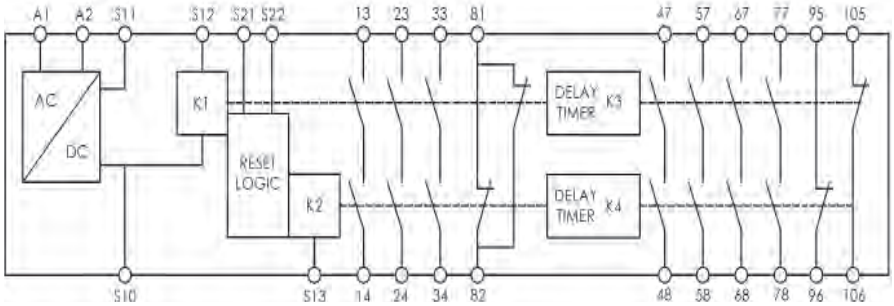
DESCRIPTION:

The Viper Safety Relays range from IDEM are designed to meet the latest safety standards and offer enhanced LED diagnostics and simplified wiring. Applications include the monitoring of safety interlock switches (guard door monitoring), emergency stop devices and sensors.
The SCR-31-42TD-i internal logic uses force guided relays to achieve cross monitoring, this ensures that a single fault does not lead to the loss of the safety function and that all faults are detected at or before the next safety demand.

FEATURES:

- Output contacts: 3NC 1NO Delayed contacts: 4NC and 2NO (0-30 seconds).
- Feedback circuit to monitor external contacts - used for reinforcement of contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 4.
- Monitored manual or automatic start.
- Single and dual channel operation.
- Output expansion units available to increase number of outputs.

BLOCK DIAGRAM:



Electrical Connection

A1 A2	Power 24Vac/dc	13-14	Safety Output Contact 1	57-58	Delayed Safety Output Contact 2
S11	Control Output	23-24	Safety Output Contact 2	67-68	Delayed Safety Output Contact 3
S10 S13 S12	Control Inputs	33-34	Safety Output Contact 3	77-78	Delayed Safety Output Contact 4
S21	Auto Reset Input	81-82	Auxiliary Output Contact K1/K2	95-96	Delayed Auxiliary Output Contact K3
S22	Manual Reset Input	47-48	Delayed Safety Output Contact 1	105-106	Delayed Auxiliary Output Contact K4

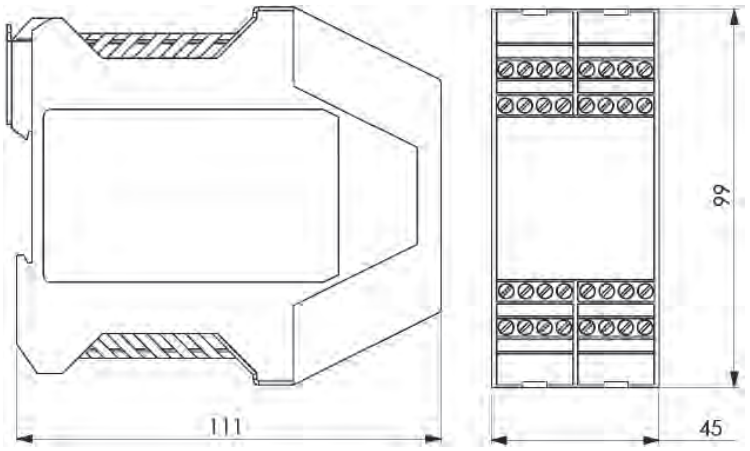
SPECIFICATIONS:

STANDARDS	
EN ISO13849-1 EN62061 EN60204-1 EN ISO12100	
POWER SUPPLY CIRCUIT	
Operating Voltage	24V AC/DC
Operating Voltage Tolerance	85-110%
Rated Supply Frequency	50Hz-60Hz
Power Consumption	5W (24V AC/DC)
CONTROL CIRCUITS	
Rated Output Voltage	24V DC (S11)
Output Current	100mA (S11)
Response Time	100ms
Release Time	25ms
Recovery Time	1s approx.
OUTPUT CIRCUITS	
Rated Output Voltage	250V AC
Maximum Current per Output	6A
Maximum Total Current all Outputs	8A
Safety Contact Breaking Capacity AC	250V, 1500V, 6A, Ohmic 230V, 4A for AC-15
DC	24V, 30W, 1.25A, Ohmic
Minimum Contact Load	10V 10mA
Minimum Contact Fuses	4A slow blow, 6A fast blow
Contact Material	$AgSnO_2$
Contact Service Life	10×10^6
GENERAL DATE	
Rated Impulse Withstand Voltage	4kV
Rated Insulation Voltage	250V
Degree of Protection	IP20
Temperature Range	-20C to +55C
Degree of Contamination	2
Overvoltage Category	III
Weight	300gr (10.5 oz.)
Mounting	Any position

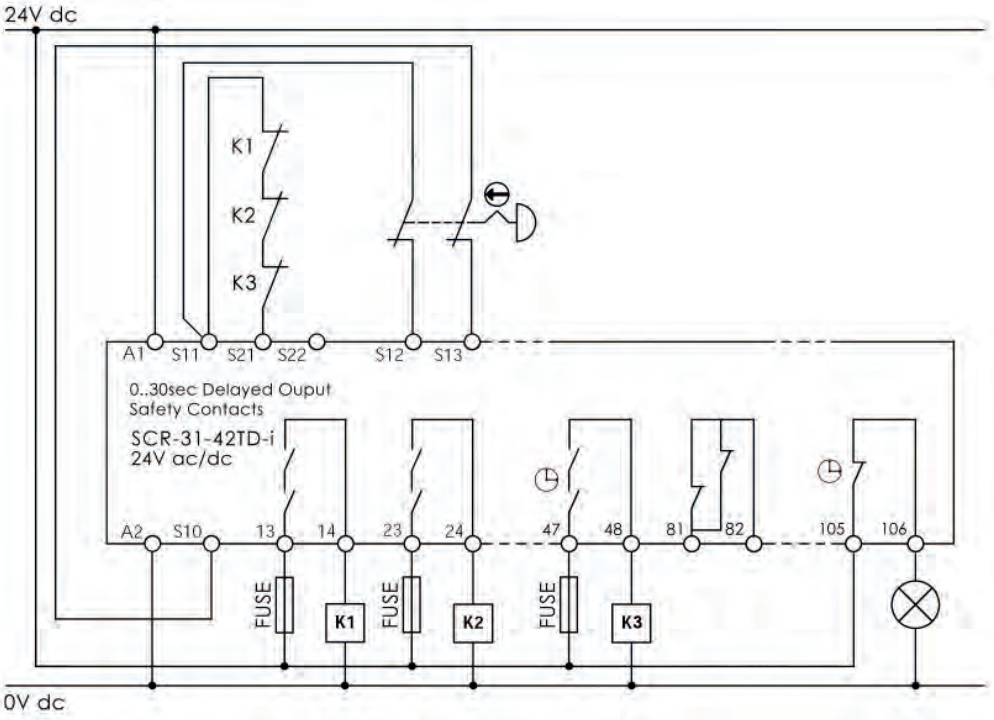
SAFETY CHARACTERISTICS	
EN62061	SIL3
ISO13849-1	Ple Category 4 (instant contacts)
	Ple Category 3 (delayed contacts)
PFH	2.3E-9 1/h (2.3% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	2.0E-04 (20% of SIL3 (1 E-03)
MTTFd	134a (High)
DC Av.	95% (Medium)

VIPER Safety Relays **Type: SCR-31-42TD-i** (added diagnostics)

DIMENSIONS:



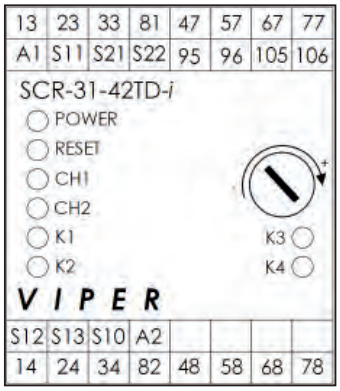
MANUAL RESTART MODE (Dual Channel) E-STOP:



LED DIAGNOSTICS:

WHEN SAFETY RELAY IN OPERATION

Power	Power applied to device
Reset	Reset Circuit is closed.
CH1	External switch input 1 closed.
CH2	External switch input 2 closed.
K1	Internal relay safety output contacts closed.
K2	Internal relay safety output contacts closed.
K3	Internal relay safety output contacts closed.
K4	Internal relay safety output contacts closed.



SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS	DELAYED CONTACTS
280006	SCR-31-42TD-i	Standard Screw Terminals	24Vac/dc	2NC	3NC 1NO	4NC 2NO
280006-P	SCR-31-42TD-i	Pluggable Screw Terminals	24Vac/dc	2NC	3NC 1NO	4NC 2NO

VIPER Safety Relays **Type: SEU-31-i** (with added diagnostics)

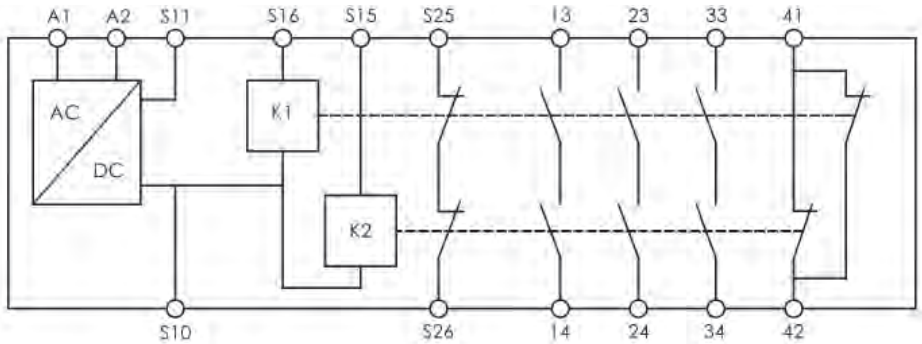
DESCRIPTION:

The Viper Safety Relays range from IDEM are designed to meet the latest safety standards and offer enhanced LED diagnostics and simplified wiring. Applications include the monitoring of safety interlock switches (guard door monitoring), emergency stop devices and sensors.
The SEU-31-i is an expansion unit designed to connect to a standard SCR-i relay to offer extra output contacts to the end user.

FEATURES:

- Output contacts: 3NC 1NO.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 4.
- Monitored manual or automatic start.
- Single and dual channel operation.
- Output expansion units available to increase number of outputs.

BLOCK DIAGRAM AND ELECTRICAL CONNECTION:



Electrical Connection

A1 A2	Power 24Vac/dc
S11	Control Output
S15 S16 S10	Control Inputs
S25 S26	Feedback Check Contacts
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2
33-34	Safety Output Contact 3
41-42	Auxiliary Output Contact

SPECIFICATIONS:

STANDARDS	
EN ISO13849-1 EN62061 EN60204-1 EN ISO12100	
POWER SUPPLY CIRCUIT	
Operating Voltage	24V AC/DC
Operating Voltage Tolerance	85-110%
Rated Supply Frequency	50Hz-60Hz
Power Consumption	2.5W (24V AC/DC)
CONTROL CIRCUITS	
Rated Output Voltage	24V DC (S11)
Output Current	100mA (S11)
Response Time	30ms
Release Time	25ms
Recovery Time	90ms
OUTPUT CIRCUITS	
Rated Output Voltage	250V AC
Maximum Current per Output	6A
Maximum Total Current all Outputs	8A
Safety Contact Breaking Capacity AC	250V, 1500V, 6A, Ohmic 230V, 4A for AC-15
DC	24V, 30W, 1.25A, Ohmic
Minimum Contact Load	10V 10mA
Minimum Contact Fuses	4A slow blow, 6A fast blow
Contact Material	$AgSnO_2$
Contact Service Life	10×10^6
GENERAL DATE	
Rated Impulse Withstand Voltage	4kV
Rated Insulation Voltage	250V
Degree of Protection	IP20
Temperature Range	-20C to +55C
Degree of Contamination	2
Overvoltage Category	III
Weight	160gr (5.5 oz.)
Mounting	Any position

SAFETY CHARACTERISTICS		
EN62061	SIL3	
ISO13849-1	Ple Category 4	
PFH	8.4E-10 1/h	(0.8% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	7.2E-05	(7.2% of SIL3 (1 E-03)
MTTFd	71a (High)	
DC Av.	99% (High)	

LED DIAGNOSTICS:

WHEN SAFETY RELAY IN OPERATION

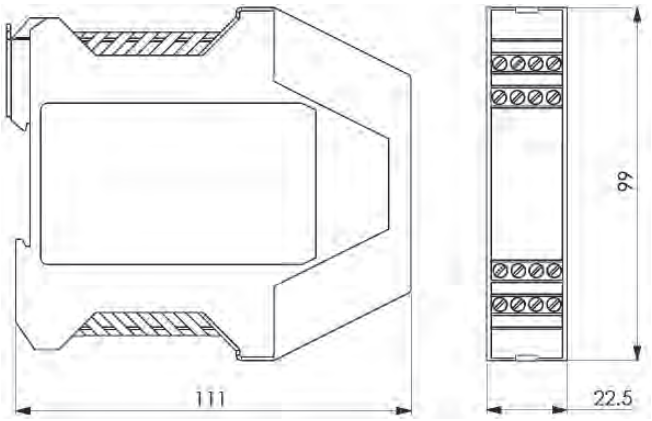
Power Power applied to device

K1 Internal relay safety output contacts closed.

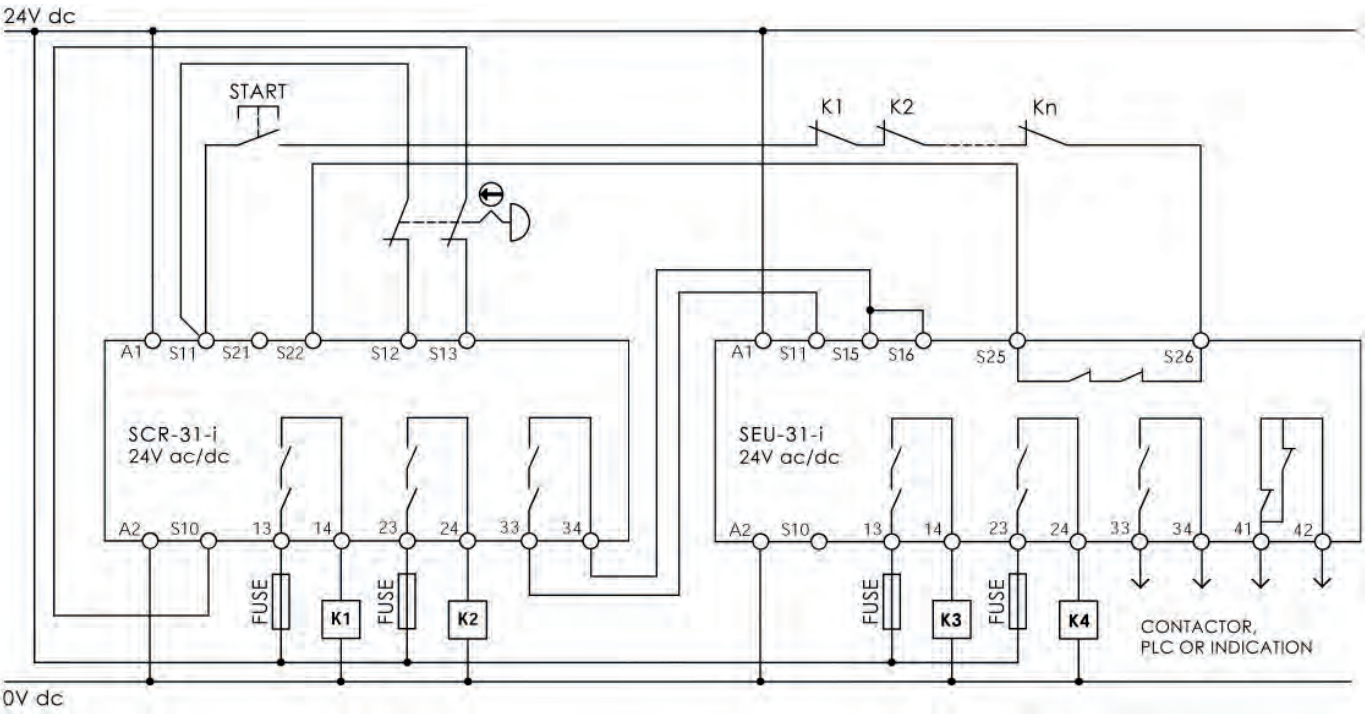
K2 Internal relay safety output contacts closed.

VIPER Safety Relays **Type: SEU-31-i** (with added diagnostics)

DIMENSIONS:



MANUAL RESTART MODE (Dual Channel) E-STOP (shown with SCR-31-i):



SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
280007	SEU-31-i	Standard Screw Terminals	24Vac/dc	2NC	3NC 1NO
280007-P	SEU-31-i	Pluggable Screw Terminals	24Vac/dc	2NC	3NC 1NO

VIPER Safety Relays **Type: SEU-31TD-i** (added diagnostics)

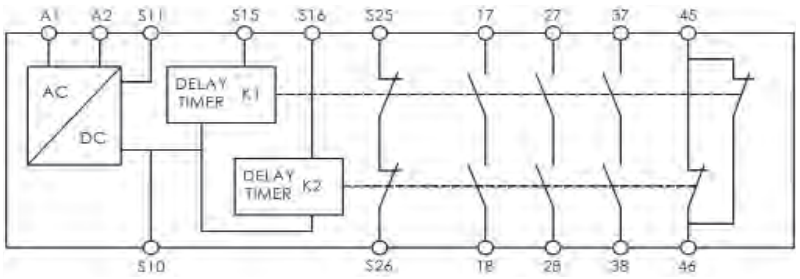
DESCRIPTION:

The Viper Safety Relays range from IDEM are designed to meet the latest safety standards and offer enhanced LED diagnostics and simplified wiring. Applications include the monitoring of safety interlock switches (guard door monitoring), emergency stop devices and sensors.
The SEU-31TD-i is an expansion unit with the added benefit of Time Delayed contacts.
It has been designed to connect to a standard SCR-i relay to offer extra time delayed output contacts to the end user.

FEATURES:

- Delayed contacts: 3NC 1NO (0-30 seconds).
- Feedback circuit to monitor external contacts - used for reinforcement of contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLd, SILCL 2, Category 3.
- Monitored manual or automatic start.
- Single and dual channel operation.
- Output expansion units available to increase number of outputs.

BLOCK DIAGRAM AND ELECTRICAL CONNECTION:



Electrical Connection

A1 A2	Power 24Vac/dc
S11	Control Output
S15 S16 S10	Control Inputs
S25 S26	Feedback Check Contacts
17-18	Delayed Safety Output Contact 1
27-28	Delayed Safety Output Contact 2
37-38	Delayed Safety Output Contact 3
45-46	Delayed Auxiliary Output Contact

SPECIFICATIONS:

STANDARDS	
EN ISO13849-1 EN62061 EN60204-1 EN ISO12100	
POWER SUPPLY CIRCUIT	
Operating Voltage	24V AC/DC
Operating Voltage Tolerance	85-110%
Rated Supply Frequency	50Hz-60Hz
Power Consumption	2.5W (24V)
CONTROL CIRCUITS	
Rated Output Voltage	24V DC (S11)
Output Current	100mA (S11)
Response Time	10 0ms
Release Time	25ms
Recovery Time	90ms
OUTPUT CIRCUITS	
Rated Output Voltage	250V AC
Maximum Current per Output	6A
Maximum Total Current all Outputs	8A
Safety Contact Breaking Capacity AC	250V, 1500V, 6A, Ohmic 230V, 4A for AC-15
DC	24V, 30W, 1.25A, Ohmic
Minimum Contact Load	10V 10mA
Minimum Contact Fuses	4A slow blow, 6A fast blow
Contact Material	$AgSnO_2$
Contact Service Life	10×10^6
GENERAL DATE	
Rated Impulse Withstand Voltage	4kV
Rated Insulation Voltage	250V
Degree of Protection	IP20
Temperature Range	-20C to +55C
Degree of Contamination	2
Overvoltage Category	III
Weight	160gr (5.5 oz.)
Mounting	Any position

SAFETY CHARACTERISTICS	
EN62061	SIL3
ISO13849-1	Ple Category 4 (instant contacts)
	Ple Category 3 (delayed contacts)
PFH	2.3E-9 1/h (2.3% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	2.0E-04 (20% of SIL3 (1 E-03)
MTTFd	134a (High)
DC Av.	95% (Medium)

LED DIAGNOSTICS:

WHEN SAFETY RELAY IN OPERATION

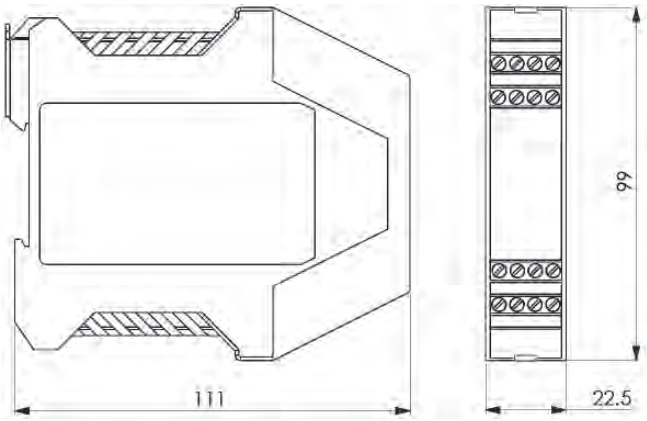
Power Power applied to device

K1 Internal relay safety output contacts closed.

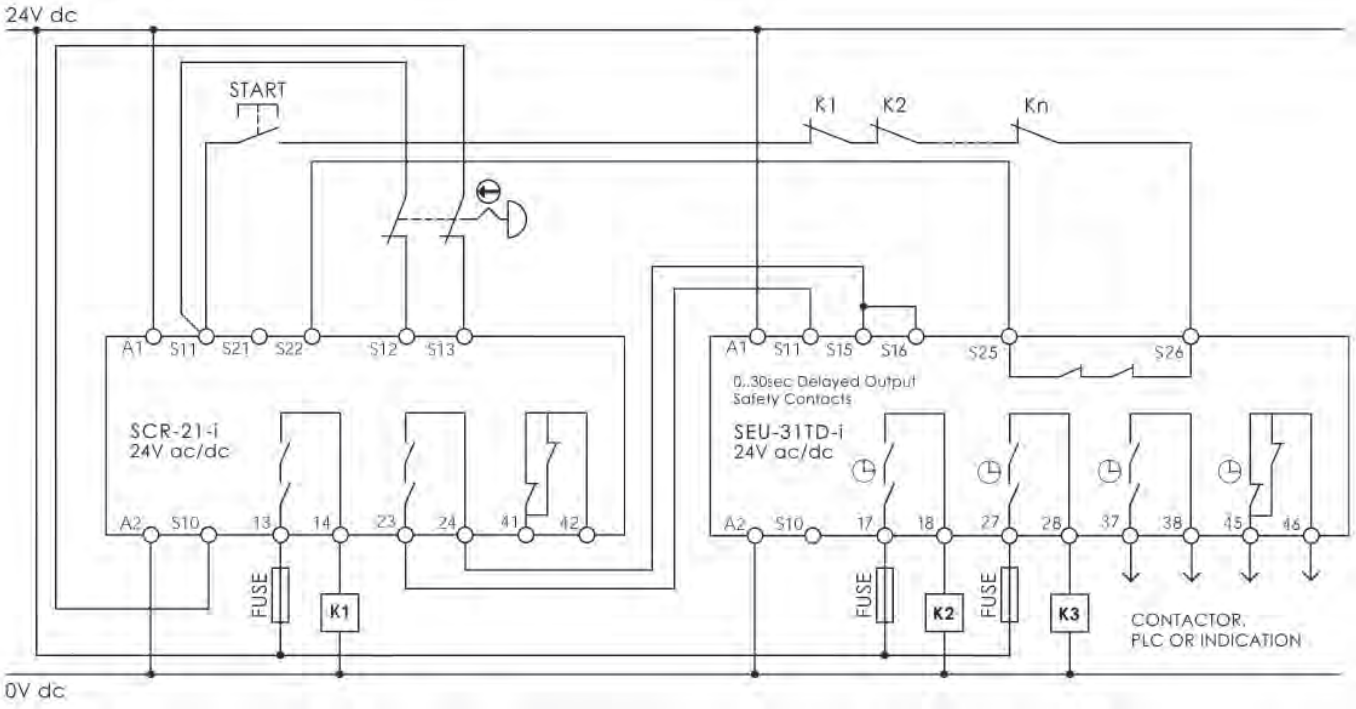
K2 Internal relay safety output contacts closed.

VIPER Safety Relays **Type: SEU-31TD-i** (added diagnostics)

DIMENSIONS:



MANUAL RESTART MODE (Dual Channel) E-STOP:



SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	DELAYED CONTACTS
280008	SEU-31TD-i	Standard Screw Terminals	24Vac/dc	2NC	3NC 1NO
280008-P	SEU-31TD-i	Pluggable Screw Terminals	24Vac/dc	2NC	3NC 1NO

Safety Relays

SAFETY RELAY FUNCTION:

The SCR range of Safety Relays have been designed in accordance with EN60204-1 for safety circuits and they may be used in conjunction with Mechanical Interlock Guard Switches, Emergency Stop Switches, Non Contact Guard Switches or Light Curtains to achieve redundant monitoring and fault checking up to PLe/Cat4 ISO13849-1.

When dual circuit monitoring is used they can check the switch contacts for correct opening and re-closing, monitor for wiring short circuits and can be configured to check for correct opening of external machine contactors. For applications requiring time controlled delay after opening of the guard switch, versions with time delayed output contacts are available (variable 0 to 30 seconds).

FEATURES:

- Dual force guided relay output contacts - internally monitored - high current outputs up to 8A.
- Up to PLe Category 4 to ISO13849-1 and SILCL 3 EN62061
- Single or Dual Channel input - LED indication of input status
- Feedback loop for monitoring contactors
- DIN Rail Mounting - either 22.5mm or 45mm wide housings
- Short circuit and earth fault monitoring
- Automatic or Manual Start

STANDARD SAFETY RELAYS:

SCR-1

2 Safety Output Contacts
24Vac/dc Supply

SCR-2

2 Safety Output Contacts
24Vac/dc Supply

SCR-3

3 Safety Output Contacts
1 Auxiliary Output Contact
Choice of 24Vac/dc, 110Vac or
230Vac Supply (by Sales Number)

SCR-7

7 Safety Output Contacts
4 Auxiliary Output Contacts
2 Auxiliary Transistor Outputs
24Vac/dc Supply

SAFETY RELAYS WITH TIME DELAYED CONTACTS:

SCR-4-TD-1

1 Delayed Safety Output Contact (variable 0-30s)
3 Instant Safety Output Contacts
24Vac/dc Supply

SCR-4-TD-2

2 Delayed Safety Output Contacts (variable 0-30s)
2 Instant Safety Output Contacts
24Vac/dc Supply

SCR-4-TD-3

3 Delayed Safety Output Contacts (variable 0-30s)
1 Instant Safety Output Contact
24Vac/dc Supply

EXPANSION MODULES FOR USE WITH STANDARD RELAYS:

SEU-1

3 Safety Output Contacts
1 Auxiliary Output Contact
Choice of 24Vac/dc, 110Vac or 230Vac Supply
(by Sales Number)

SEU-TD-1

3 Delayed Safety Output Contacts
1 Delayed Auxiliary Output Contact
Choice of 24Vac/dc, 110Vac or 230Vac Supply
(by Sales Number)

2 HAND CONTROL RELAYS:

SCR-2H

2 Safety Output Contacts
Choice of 24Vac/dc, 110Vac or 230Vac Supply
(by Sales Number)
Complies with EN574, Type IIIC and is intended
for use with 2 hand palm buttons

Safety Relays **Type: SCR-1**

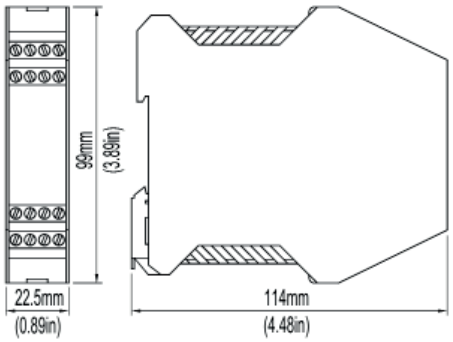
OVERVIEW:

The SCR-1 is a low cost all purpose Safety Relay that ensures the quick and safe deactivation of the moving parts of a machine in case of danger. Internal fault monitoring takes place during restart via the start button.

Applications include single and dual channel emergency stop circuits or dual channel safety guard monitoring using Tongue Switches.

Emergency Stop Relay
2NC Outputs

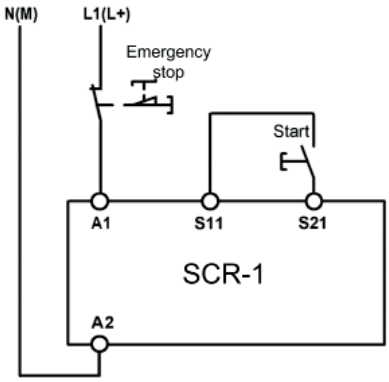
DIMENSIONS:



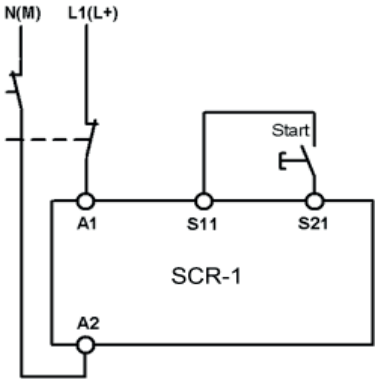
FEATURES:

- 2 Safe, redundant safety output contacts
- Standards: EN60204-1, ISO13849-1, EN62061
- Up to Category 3 to ISO13849-1
- Up to PLd to ISO13849-1 SILCL2 EN62061
- Single or Dual Channel input - LED indication of input status
- Redundancy and cycle monitoring
- Feedback loop for monitoring contactors or expansion modules
- 22.5mm Din Rail Mounting

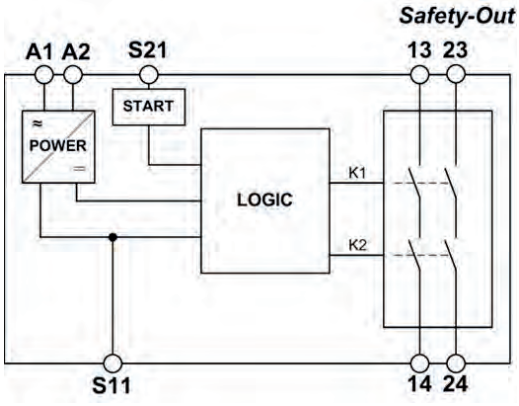
APPLICATIONS:



Single Channel Interlocking to PLc ISO13849-1 and Cat1

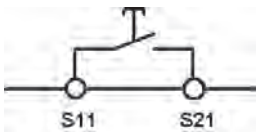


Dual Channel Interlocking to PLd ISO13849-1 and Cat3

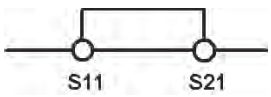


Block Diagram and Electrical Connection

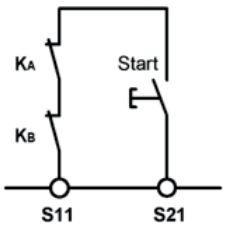
A1 A2	Power
S11	24Vdc Control Voltage
S21	Control Line
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2



Manual Start



Automatic Start



Feedback Circuit
The feedback circuit monitors machine contactors or expansion modules

Standards:	EN60204-1 EN292 ISO13849-1 EN954-1 EN1088 ISO14119 EN62061
Monitored Safety Inputs Circuits	2NC or 1NC
Safety Switching Outputs	2NC positively guided
Operating Voltage	24Vac/dc 3VA approx.
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	40mA approx.
Monitored Reset Circuit Loop	Auto or Monitored Manual Reset
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	1000m with 0.75 sq mm
Contact Material	AgNi
Indication - Green	LED1 internal relay K1 energised LED2 internal relay K2 energised LED1 and 2 OSSD closed
Contact Service Life	Mechanical $1x10^7$ Electrical $1x10^5$
Safety Contact Breaking Capacity	AC 250V, 1500VA, 6A, ohmic 230V, 4A for AC15 DC 24V, 30W, 1.25A, ohmic 24V, 30W, 2.0A for DC-13
External Fuse Protection - Safety Outputs	4A slow blow or 6A quick blow
Minimum Voltage and Current	24V, 20mA dc
Response Time on Output Opening	90ms
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	160g approx.

Safety Classification and Reliability Data: Specified PL or SILCL were determined under worst case conditions

ISO13849-1	
Performance Level	d
Category (ISO13849-1)	3
MTTFd	848 years
DC (average)	96.6%
Proof Test Interval (Life)	20 years
Safety Data Annual Usage	365 days per year 24 hours per day Test cycle 3600 seconds/cycle Full load AC15

EN62061	
SILCL	2
Proof Test Interval (life)	20 years
Hardware Fault Tolerance	1
DC (average)	96.6%
PFHd	1.03×10^{-7}

SALES NUMBER	TYPE	SUPPLY VOLTAGE	ISO13849-1 CATEGORY	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
180009	SCR-1	24Vac/dc	Up to Cat3	2NC	2NC

Safety Relays **Type: SCR-2**

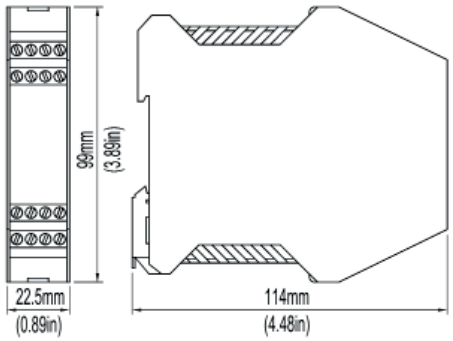
OVERVIEW:

The SCR-2 is an all purpose Safety Monitoring Relay that ensures the quick and safe deactivation of the moving parts of a machine in case of danger.

Applications include single and dual channel emergency stop circuits or dual channel safety guard monitoring using Tongue Switches or Non Contact Switches.

Safety Monitoring Relay
2NC Outputs

DIMENSIONS:



FEATURES:

- 2 Force guided safety output contacts
- Standards: EN60204-1, ISO13849-1, EN62061
- Stop Category: 0
- Up to PLe to ISO13849-1
- SILCL3 EN62061
- Single or Dual Channel input - LED indication of input status
- Redundancy and cycle monitoring
- Feedback loop for monitoring contactors or expansion modules
- Short circuit and earth fault monitoring
- 22.5mm Din Rail Mounting

FUNCTION:

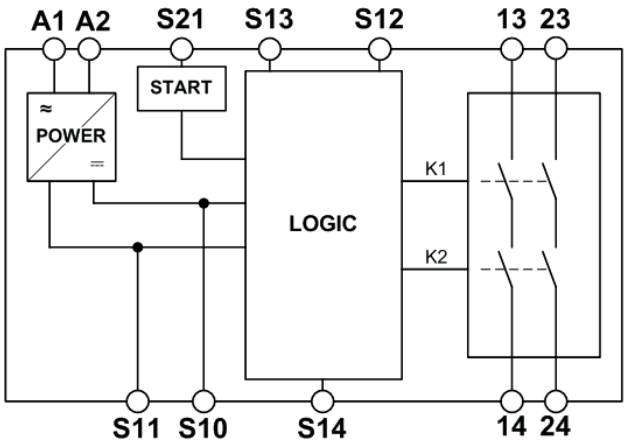
The SCR-2 is designed in accordance with EN60204-1 for safety circuits and they may be applied for up to PLe ISO13849-1 or SILCL3 to EN62061.

The internal logic system closes the relay safety outputs when the start button is pressed.

If the control lines are opened by operation of a Safety Switch or Emergency Stop button then the safety output contacts are opened and safely switch off the supply to the machine.

It is ensured that a single fault does not lead to the loss of the safety function and that cyclic monitoring means that any fault is detected no later than the next start up.

Safety-Out



Block Diagram and Electrical Connection

A1 A2	Power
S11	24Vdc Control Voltage
S10 S13 S14 S12	Control Lines
S21	Start Control Line
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2

Standards:	EN60204-1 ISO13849-1 EN62061
Monitored Safety Inputs Circuits	2NC or 1NC
Safety Switching Outputs	2NC positively guided
Operating Voltage	24Vac/dc
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	40mA approx.
Monitored Reset Circuit Loop	Auto or Monitored Manual Reset
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	1000m with 0.75 sq mm
Contact Material	AgNi
Indication - Green	LED1 internal relay K1 energised LED2 internal relay K2 energised LED1 and 2 OSSD closed
Contact Service Life	Mechanical $1x10^7$ Electrical $1x10^5$
Safety Contact Breaking Capacity	AC 250V, 1500VA, 6A, ohmic 230V, 4A for AC15 DC 24V, 30W, 1.25A, ohmic 24V, 30W, 2.0A for DC-13
External Fuse Protection - Safety Outputs	4A slow blow or 6A quick blow
Minimum Voltage and Current	24V, 20mA dc
Response Time on Output Opening	90ms
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	170g approx.

Safety Classification and Reliability Data: Specified PL or SILCL were determined under worst case conditions

ISO13849-1	
Performance Level	e
Category (ISO13849-1)	4
MTTFd	848 years
DC (average)	99%
Proof Test Interval (Life)	20 years
Safety Data Annual Usage	365 days per year 24 hours per day Test cycle 3600 seconds/cycle Full load AC15

EN62061	
SILCL	3
Proof Test Interval (life)	20 years
Hardware Fault Tolerance	1
DC (average)	99%
PFHd	1.2×10^{-8}

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
180001	SCR-2	Standard Screw Terminals	24Vac/dc	2NC	2NC
180001-P	SCR-2	Pluggable Screw Terminals	24Vac/dc	2NC	2NC

Safety Relays **Type: SCR-3**

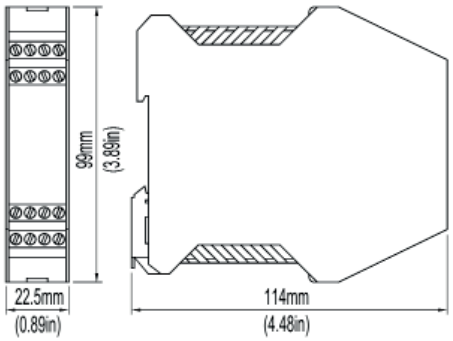
OVERVIEW:

The SCR-3 is an all purpose Safety Monitoring Relay that ensures the quick and safe deactivation of the moving parts of a machine in case of danger.

Applications include single and dual channel emergency stop circuits or dual channel safety guard monitoring using Tongue Switches or Non Contact Switches.

Safety Monitoring Relay
3NC 1NO Outputs

DIMENSIONS:



FEATURES:

- 3 Force guided safety output contacts
- 1 Auxiliary output contact
- Standards: EN60204-1, ISO13849-1, EN62061
- Stop Category: 0
- Up to PLe to ISO13849-1
- SILCL3 EN62061
- Single or Dual Channel input - LED indication of input status
- Redundancy and cycle monitoring
- Feedback loop for monitoring contactors or expansion modules
- Short circuit and earth fault monitoring
- 22.5mm Din Rail Mounting
- Choice of 24Vac/dc, 110Vac or 230Vac supply (by Sales No.)

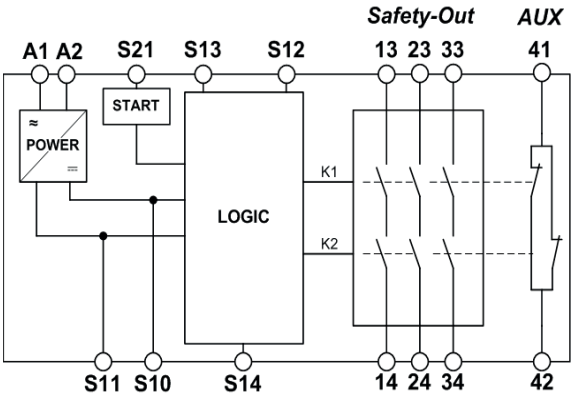
FUNCTION:

The SCR-3 is designed in accordance with EN60204-1 for safety circuits and they may be applied for up to PLe ISO13849-1 or SILCL3 to EN62061.

The internal logic system closes the relay safety outputs when the start button is pressed.

If the control lines are opened by operation of a Safety Switch or Emergency Stop button then the safety output contacts are opened and safely switch off the supply to the machine.

It is ensured that a single fault does not lead to the loss of the safety function and that cyclic monitoring means that any fault is detected no later than the next start up.



Block Diagram and Electrical Connection

A1 A2	Power
S11	24Vdc Control Voltage
S10	Control Line
S21	Start Control Line
S13 S14 S12	Control Lines
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2
33-34	Safety Output Contact 3
41-42	Auxiliary Output Contact

Safety Classification and Reliability Data: Specified PL or SILCL were determined under worst case conditions

Standards:	EN60204-1 ISO13849-1 EN62061
Monitored Safety Inputs Circuits	2NC or 1NC from safety switches
Safety Switching Outputs	3NC positively guided
Auxiliary Outputs	1NO
Operating Voltage	24Vac/dc 110Vac or 230Vac
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	40mA approx.
Monitored Reset Circuit Loop	Auto or Monitored Manual Reset
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	1000m with 0.75 sq mm
Contact Material	AgNi
Indication - Green	LED1 internal relay K1 energised LED2 internal relay K2 energised LED1 and 2 OSSD closed
Contact Service Life	Mechanical $1x10^7$ Electrical $1x10^5$
Safety Contact Breaking Capacity	AC 250V, 2000VA, 8A, ohmic 230V, 3A for AC15 DC 24V, 48W, 2.0A DC-13 (Max. total current 15A)
Auxiliary Contact Breaking Capacity	AC 250V, 500VA, 2A DC 50V, 30W, 1.25A ohmic
External Fuse Protection - Safety Outputs	4A slow blow or 6A quick blow
Minimum Voltage and Current	24V, 20mA dc
Response Time on Output Opening	90ms
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	160g approx.

ISO13849-1

Performance Level	e
Category (ISO13849-1)	4
MTTFd	567 years
DC (average)	99%
Proof Test Interval (Life)	20 years
Safety Data Annual Usage	365 days per year 24 hours per day Test cycle 3600 seconds/cycle Full load AC15

EN62061

SILCL	3
Proof Test Interval (life)	20 years
Hardware Fault Tolerance	1
DC (average)	99%
PFHd	1.2×10^{-8}

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
180002	SCR-3	Standard Screw Terminals	24Vac/dc	2NC	3NC 1NO
180003	SCR-3		230Vac	2NC	3NC 1NO
180004	SCR-3		110Vac	2NC	3NC 1NO
180002-P	SCR-3	Pluggable Screw Terminals	24Vac/dc	2NC	3NC 1NO
180003-P	SCR-3		230Vac	2NC	3NC 1NO
180004-P	SCR-3		110Vac	2NC	3NC 1NO

Safety Relay with combined Time Delay **Type: SCR-4-TD**

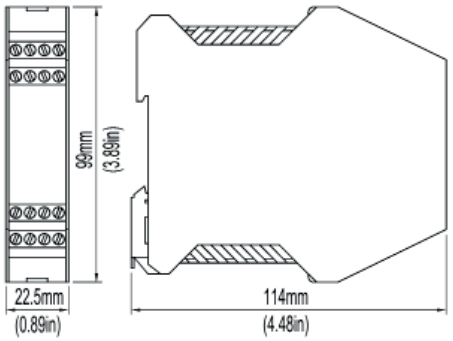
OVERVIEW:

The SCR-4-TD Range of all purpose Safety Monitoring Relays combine time delayed and non time delayed contacts in a compact 22.5mm housing.

This permits dangerous components of a system to be switched off quickly and safely, whilst at the same time other circuits are still supplied with voltage for up to 30 seconds (adjustable on the SCR-4-TD by a potentiometer).

Safety Monitoring Relay

DIMENSIONS:



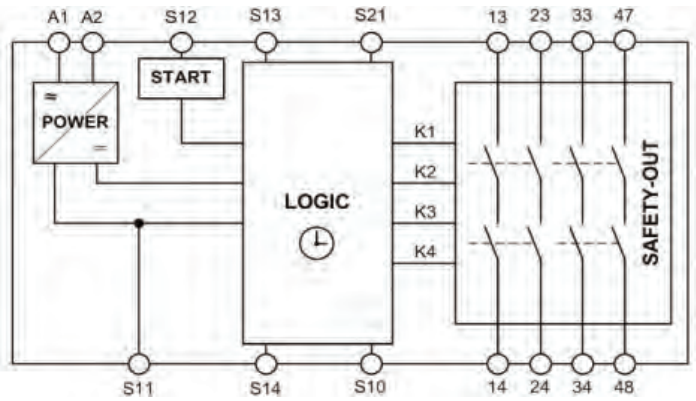
FEATURES:

- Force guided safety output contacts - available in 3 variants
- Standards: EN60204-1, ISO13849-1, EN62061
- Stop Category: 0 (non time delayed) 1 (time delayed)
- Up to PLe to ISO13849-1
- SILCL3 EN62061
- Single or Dual Channel input - LED indication of input status
- Redundancy and cycle monitoring
- Feedback loop for monitoring contactors or expansion modules
- Short circuit and earth fault monitoring
- 22.5mm Din Rail Mounting

FUNCTION:

If the application requires time delayed opening of a safety circuit following activation of the stop signal then the SCR-4-TD range will provide a combination of instant and variable delayed contacts.

This may be useful for applications that rely on PLC control to provide an initial controlled shutdown but ultimately requires a delayed opening of a safety circuit.

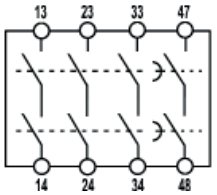


Block Diagram and Electrical Connection SCR-4-TD-1

A1 A2	Power
S11	24Vdc Control Voltage
S10 S13 S14 S21	Control Lines
S12	Start Control Line

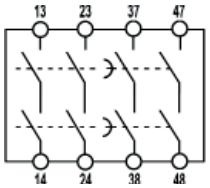
VARIANTS:

SCR-4-TD-1



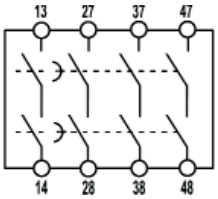
Instant 3NC
Delayed 1NC

SCR-4-TD-2



Instant 2NC
Delayed 2NC

SCR-4-TD-3



Instant 1NC
Delayed 3NC

Standards:	EN60204-1 ISO13849-1 EN62061
Monitored Safety Inputs Circuits	2NC or 1NC
Safety Switching Outputs	4NC
Delayed Time	1-30 seconds continuously adjustable
Operating Voltage	24Vac/dc
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	190mA approx.
Monitored Reset Circuit Loop	Auto or Monitored Manual Reset
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	1000m with 0.75 sq mm
Contact Material	AgNi
Indication - Green	LED1 internal relay K1 energised LED2 internal relay K2 energised LED1 and 2 OSSD closed
Contact Service Life	Mechanical $1x10^7$ Electrical $1x10^5$
Safety Contact Breaking Capacity	AC 250V, 1500VA, 6A, ohmic 230V, 4A for AC15 DC 24V, 30W, 1.25A, ohmic 24V, 30W, 2.0A for DC-13
External Fuse Protection - Safety Outputs	4A slow blow or 6A quick blow
Minimum Voltage and Current	24V, 20mA dc
Response Time on Output Opening	90ms
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	250g approx.

Safety Classification and Reliability Data:	Specified PL or SILCL were determined under worst case conditions
ISO13849-1	
Performance Level	e
Category (ISO13849-1)	Non Delayed: 4 Delayed: 3
MTTFd	73.36 years
DC (average)	Non Delayed: 99% Delayed: 90%
Proof Test Interval (Life)	10 years
Safety Data Annual Usage	261 days per year 16 hours per day Test cycle 180 seconds/cycle Low load AC1
EN62061	
SILCL	Non Delayed: 3
Proof Test Interval (life)	20 years
Hardware Fault Tolerance	1
DC (average)	Non Delayed: 99% Delayed: 90%
PFHd	Non Delayed: 4.22×10^{-8}
PFHd	Delayed: 8.84×10^{-8}

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	INSTANT OUTPUT CONTACTS	DELAYED OUTPUT CONTACTS
180005	SCR-4-TD-1	Standard Screw Terminals	24Vac/dc	2NC	3NC	1NC
180006	SCR-4-TD-2		24Vac/dc	2NC	2NC	2NC
180007	SCR-4-TD-3		24Vac/dc	2NC	1NC	3NC
180005-P	SCR-4-TD-1	Pluggable Screw Terminals	24Vac/dc	2NC	3NC	1NC
180006-P	SCR-4-TD-2		24Vac/dc	2NC	2NC	2NC
180007-P	SCR-4-TD-3		24Vac/dc	2NC	1NC	3NC

Expansion Module for use with SCR-2 or SCR-3 **Type: SEU-1**

OVERVIEW:

The SEU-1 is an expansion unit which offers 3 additional NC Safety Output Contacts.

An existing system using SCR-2 or SCR-3 can be expanded modularly.

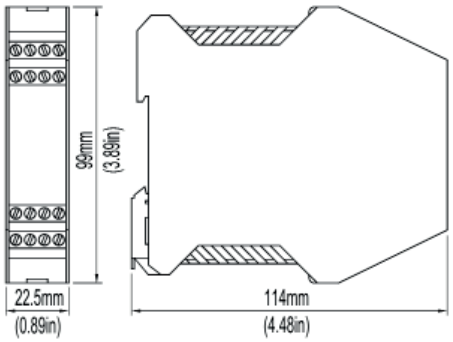
The safety actuation is achieved from the basic SCR-2 or SCR-3 Safety Relay.

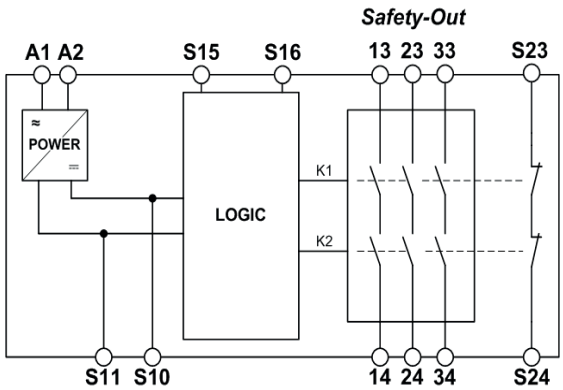
FEATURES:

- 3NC Relay outputs
- 1NO Auxiliary contact (fault monitoring)
- Standards: EN60204-1, ISO13849-1, EN62061
- Stop Category: 1
- Up to PLe to ISO13849-1
- SILCL3 EN62061
- 3 Force guided contacts
- Fault monitoring by basic SCR device

Safety Expansion Relay
3NC Outputs

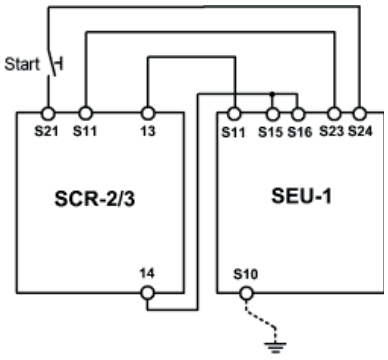
DIMENSIONS:



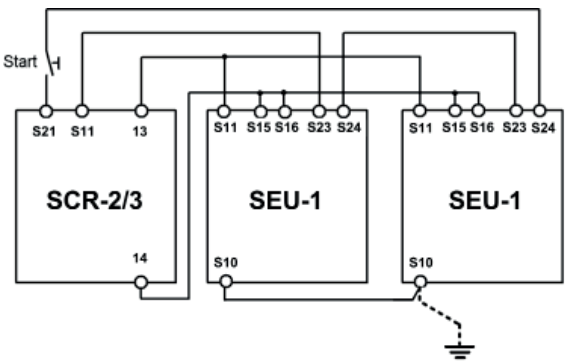


Block Diagram and Electrical Connection SEU-1

A1 A2	Power
S11	24Vdc Control Voltage
S10 S15 S16	Control Lines
S23 S24	Fault Monitoring
13-14	Safety Contact 1
23-24	Safety Contact 2
33-34	Safety Contact 3



Connection of an SEU-1 to a basic device SCR-2 or SCR-3



Connection of several SEU-1 to a basic device SCR-2 or SCR-3

Standards:	EN60204-1 ISO13849-1 EN62061
Safety Switching Outputs	3NC
Auxiliary Contact	1NO
Operating Voltage	24Vac/dc 110Vac or 230Vac
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	40mA approx.
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	1000m with 0.75 sq mm
Contact Material	AgNi
Indication - Green	LED1 and LED2 OSSD closed
Contact Service Life	Mechanical $1x10^7$ Electrical $1x10^5$
Safety Contact Breaking Capacity	AC 250V, 1500VA, 6A, ohmic 230V, 4A for AC15 DC 24V, 30W, 1.25A ohmic 24V, 30W, 2.0A for DC-13
External Fuse Protection - Safety Outputs	4A slow blow or 6A quick blow
Minimum Voltage and Current	24V, 20mA dc
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	170g approx.

Safety Classification and Reliability Data:	Specified PL or SILCL were determined under worst case conditions
ISO13849-1	
Performance Level	e
Category (ISO13849-1)	4
MTTFd	567 years
DC (average)	99%
Proof Test Interval (Life)	20 years
Safety Data Annual Usage	365 days per year 24 hours per day Test cycle 3600 seconds/cycle Full load AC15
EN62061	
SILCL	3
Proof Test Interval (life)	20 years
Hardware Fault Tolerance	1
DC (average)	99%
PFHd	1.2×10^{-8}

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	OUTPUT CONTACTS	AUXILIARY OUTPUT CONTACTS
180010	SEU-1	Standard Screw Terminals	24Vac/dc	3NC	1NO
180011	SEU-1		110Vac	3NC	1NO
180012	SEU-1		230Vac	3NC	1NO
180010-P	SEU-1	Pluggable Screw Terminals	24Vac/dc	3NC	1NO
180011-P	SEU-1		110Vac	3NC	1NO
180012-P	SEU-1		230Vac	3NC	1NO

Expansion Module with Time Delay for use with SCR-2/3 **SEU-TD-1**

OVERVIEW:

The SEU-TD-1 is an expansion unit which can be used with an existing system using SCR-2 or SCR-3 Safety Relays to allow delayed shutdown or timing to a safety application. Time delay is variable from 1 to 30 seconds.

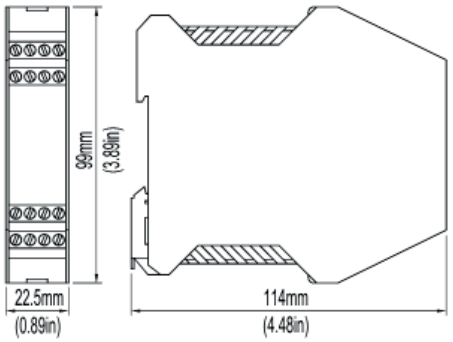
The safety actuation is achieved from the basic SCR-2 or SCR-3 Safety Relay.

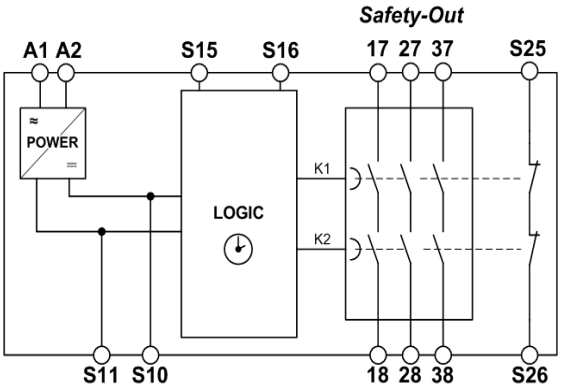
FEATURES:

- 3NC Relay outputs
- 1NO Auxiliary contact
- Standards: EN60204-1, ISO13849-1, EN62061
- Stop Category: 1
- SILCL2 EN62061
- Up to PLd to ISO13849-1
- 3 Force guided contacts
- Fault monitoring by basic SCR device

Safety Expansion Relay offering Delayed Outputs

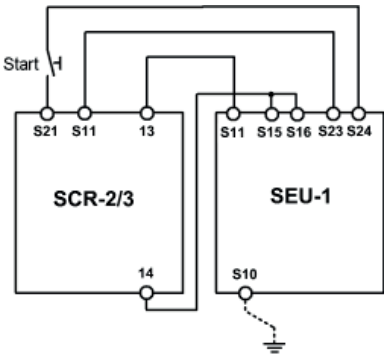
DIMENSIONS:



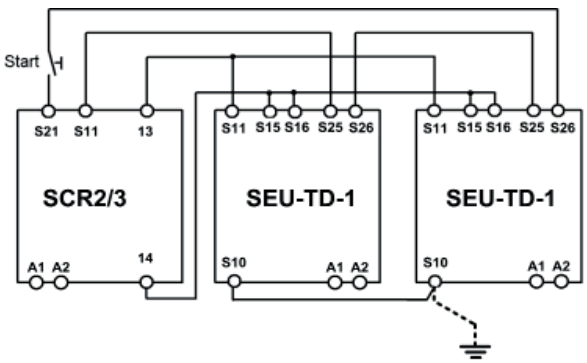


Block Diagram and Electrical Connection SEU-TD-1

A1 A2	Power
S11	24Vdc Control Voltage
S10 S15 S16	Control Lines
S25 S26	Fault Monitoring
17-18	Safety Contact 1
27-28	Safety Contact 2
37-38	Safety Contact 3



Connection of an SEU-TD-1 to a basic device SCR-2 or SCR-3



Connection of several SEU-TD-1 to a basic device SCR-2 or SCR-3

Standards:	EN60204-1 ISO13849-1 EN62061
Safety Switching Outputs	3NC 1-30 secs continuously adjustable
Auxiliary Contact	1NO monitoring contact for basic device
Operating Voltage	24Vac/dc 110Vac or 230Vac
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	40mA approx.
Monitored Reset Circuit Loop	Auto or monitored, manual reset
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	1000m with 0.75 sq mm
Contact Material	AgNi
Indication - Green	LED1 and LED2 OSSD closed
Contact Service Life	Mechanical $1x10^7$ Electrical $1x10^5$
Safety Contact Breaking Capacity	AC 250V, 1500VA, 6A, ohmic 230V, 4A for AC15 DC 24V, 30W, 1.25A ohmic 24V, 30W, 2.0A for DC-13
External Fuse Protection - Safety Outputs	4A slow blow or 6A quick blow
Minimum Voltage and Current	24V, 20mA dc
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	0.25kg approx.

Safety Classification and Reliability Data:	Specified PL or SILCL were determined under worst case conditions
ISO13849-1	
Performance Level	d
Category (ISO13849-1)	3
MTTFd	487 years
DC (average)	92.1%
Proof Test Interval (Life)	20 years
Safety Data Annual Usage	365 days per year 24 hours per day Test cycle 3600 seconds/cycle Full load AC1
EN62061	
SILCL	2
Proof Test Interval (life)	20 years
Hardware Fault Tolerance	1
DC (average)	92.1%
PFHd	1.03×10^{-7}

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	DELAYED OUTPUT CONTACTS
180015	SEU-TD-1	Standard Screw Terminals	24Vac/dc	3NC 1NO
180016	SEU-TD-1		110Vac	3NC 1NO
180017	SEU-TD-1		230Vac	3NC 1NO
180015-P	SEU-TD-1	Pluggable Screw Terminals	24Vac/dc	3NC 1NO
180016-P	SEU-TD-1		110Vac	3NC 1NO
180017-P	SEU-TD-1		230Vac	3NC 1NO

Safety Relay 2 Hand **Type: SCR-2H**

OVERVIEW:

The SCR-2H is a compact, universal 2 hand control safety relay.

It complies with EN574, Type IIIC and is intended for use in safety circuits designed in accordance with EN60204-1.

FEATURES:

2 Force guided safety output contacts

Standards: EN574, EN60204-1, ISO13849-1, EN62061

Stop Category: 0

Up to IIIC EN574

Up to PLe to ISO13849-1

SILCL3 EN62061

Redundancy and cycle monitoring

Short circuit monitoring

22mm Din Rail Mounting

Choice of 24Vac/dc, 110Vac or 230Vac supply (by Sales No.)

PRINCIPLE OF OPERATION:

The SCR-2H is suitable for connection of two hand buttons with one normally closed contact and one normally open contact.

When the operating voltage is applied to A1 and A2 and the feedback loop X1 and X2 is closed the SCR-2H is ready for use.

The output contacts only close when the 2 hand buttons T1 and T2 are operated simultaneously (within 0.5s). The output contacts do not close if only one button is operated or the feedback loop is open. Short or open circuits are detected. In order to trigger a new operation both buttons must have been released and the feedback loop closed.

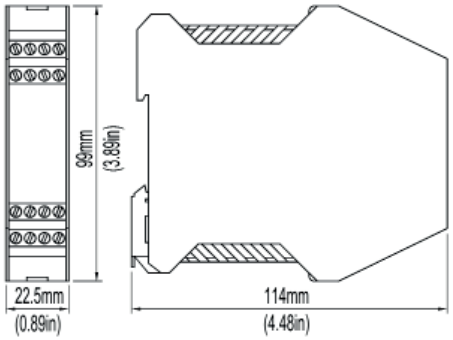
It is important to arrange the buttons such that accidental operation or easy bypass cannot be achieved, and in accordance with EN574 and EN999.

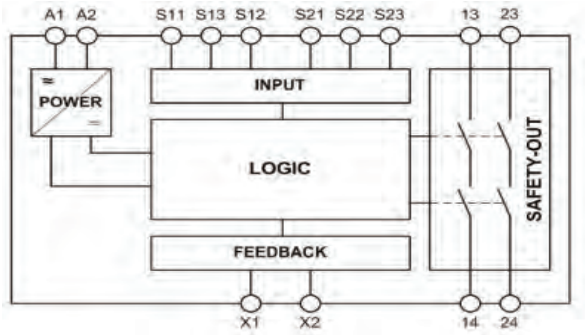
EN574 - the buttons must be arranged such that operation of both buttons using one hand is prevented i.e. a minimum distance apart of 260mm but also so as to prevent actuation by other parts of the body (forearm, elbow, hip, etc.).

EN999 - it is necessary to maintain a minimum distance between the 2 hand buttons and the hazard on the machine.

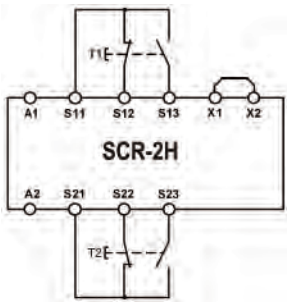
Safety Monitoring Relay
2 Hand Control

DIMENSIONS:





Block Diagram and Electrical Connection SCR-2H



Standards:	EN60204-1 ISO13849-1 EN574 EN62061
Safety Switching Outputs	2NC positively guided
Operating Voltage	24Vac/dc 110Vac or 230Vac
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	20mA approx.
Release Time for the NC Contacts after Release of Buttons	<20ms
Synchronisation Time	<0.5s
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	1000m with 0.75 sq mm
Contact Material	AgNi
Indication - Green	LED1 internal relay K1 energised LED2 internal relay K2 energised LED1 and 2 OSSD closed
Contact Service Life	Mechanical $1x10^7$ Electrical $1x10^5$
Safety Contact Breaking Capacity	AC 250V, 1500VA, 6A, ohmic 230V, 4A for AC15 DC 24V, 30W, 1.25A, ohmic 24V, 30W, 2.0A for DC-13
Auxiliary Contact Breaking Capacity	AC 250V, 500VA, 2A DC 50V, 30W, 1.25A ohmic
External Fuse Protection - Safety Outputs	4A slow blow or 6A quick blow
Minimum Voltage and Current	24V, 20mA dc
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	200g approx.

Safety Classification and Reliability Data:	Specified PL or SILCL were determined under worst case conditions
ISO13849-1	
Performance Level	e
Category (ISO13849-1)	4
MTTFd	96.6 years
DC (average)	99%
Proof Test Interval (Life)	10 years
Safety Data Annual Usage	261 days per year 16 hours per day Test cycle 7.6 seconds/cycle Low load AC1
EN62061	
SILCL	3
Proof Test Interval (life)	10 years
Hardware Fault Tolerance	1
DC (average)	99%
PFHd	1.2×10^{-8}

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	OUTPUT CONTACTS
180030	SCR-2H	Standard Screw Terminals	24Vac/dc	2NC
180031	SCR-2H		230Vac	2NC
180032	SCR-2H		110Vac	2NC
180030-P	SCR-2H	Pluggable Screw Terminals	24Vac/dc	2NC
180031-P	SCR-2H		230Vac	2NC
180032-P	SCR-2H		110Vac	2NC

Safety Relays **Type: SCR-7**

OVERVIEW:

The SCR-7 is an all purpose Safety Monitoring Relay with 7 relay outputs that ensure the quick and safe deactivation of the moving parts of a machine in case of danger.

Applications include single or dual channel emergency stop circuits or dual channel safety guard monitoring using Tongue Switches or Non Contact Switches.

FEATURES:

- 7 Force guided safety output contacts
- 4 Auxiliary output contacts
- 2 Auxiliary transistor outputs
- Standards: EN60204-1, ISO13849-1, EN62061
- Stop Category: 0
- Up to PLe to ISO13849-1
- SILCL3 EN62061
- Single or Dual Channel input - LED indication of input status
- Redundancy and cycle monitoring
- Feedback loop for monitoring contactors
- Short circuit and earth fault monitoring
- 45mm Din Rail Mounting

FUNCTION:

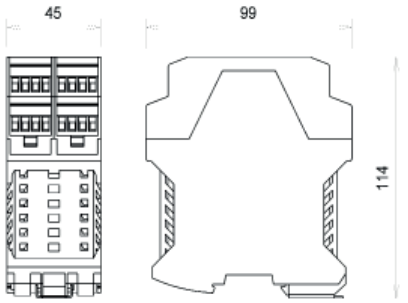
The SCR-7 is designed in accordance with EN60204-1 for safety circuits and they may be applied for up to PLe ISO13849-1.

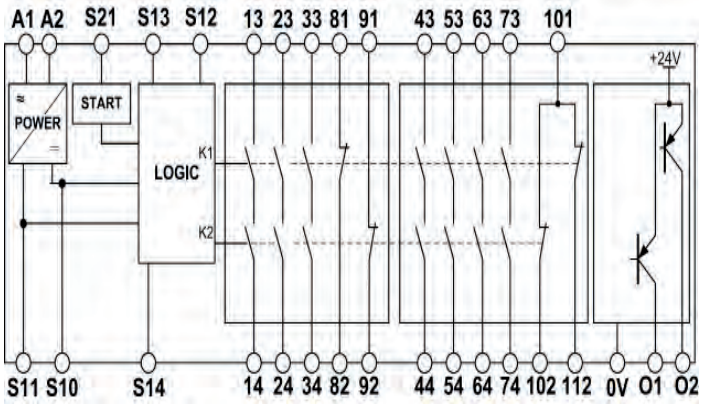
The internal logic system closes the relay safety outputs when the start button is pressed.

If the control lines are opened by operation of a Safety Switch or Emergency Stop button then the safety output contacts are opened and safely switch off the supply to the machine.

It is ensured that a single fault does not lead to the loss of the safety function and that cyclic monitoring means that any fault is detected no later than the next start up.

DIMENSIONS:





Block Diagram and Electrical Connection

A1 A2	Power
S11	24Vdc Control Voltage
S21	Start Control Line
S10 S13 S14 S21	Control Lines
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2
33-34	Safety Output Contact 3
43-44	Safety Output Contact 4
53-54	Safety Output Contact 5
63-64	Safety Output Contact 6
73-74	Safety Output Contact 7
81-82	Auxiliary Output Contact
91-92	Auxiliary Output Contact
101-102	Auxiliary Output Contact
101-112	Auxiliary Output Contact
O1 O2	Auxiliary Outputs (Transistor)
0V	Reference Common O1 O2

Standards:	EN60204-1 ISO13849-1 EN62061
Monitored Safety Inputs Circuits	2NC or 1NC from Safety Switches
Safety Switching Outputs	7NC positively guided
Auxiliary Outputs	4NO
Auxiliary Transistor Outputs	2Vdc 30mA (over-current protection)
Operating Voltage	24Vac/dc
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	250mA approx.
Monitored Reset Circuit Loop	Auto or Monitored Manual Reset
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	2 x 500m with 0.75 sq mm
Contact Material	$AgSnO_2$
Indication - Green	PWR Power ON LED1 internal relay K1 energised LED2 internal relay K2 energised
Contact Service Life	Mechanical $1x10^7$ Electrical $1x10^5$
Safety Contact Breaking Capacity	AC 250V, 2000VA, 8A, ohmic 230V, 3A for AC15 DC 24V, 3.0A DC-13 (Max. total current 20A)
Auxiliary Contact Breaking Capacity	AC 250V, 500VA, 8A, ohmic
External Fuse Protection - Safety Outputs	6A slow blow or 8A quick blow
Minimum Voltage and Current	24V, 20mA dc
Response Time on Output Opening	90ms
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	300g approx.

Safety Classification and Reliability Data: Specified PL or SILCL were determined under worst case conditions

ISO13849-1	
Performance Level	e
Category (ISO13849-1)	4
MTTFd	96 years
DC (average)	99%
Proof Test Interval (Life)	20 years
Safety Data Annual Usage	365 days per year 24 hours per day Test cycle 3600 seconds/cycle Full load AC15

EN62061	
SILCL	3
Proof Test Interval (life)	20 years
Hardware Fault Tolerance	1
DC (average)	99%
PFHd	2.27×10^{-8}

SALES NUMBER	TYPE	TERMINAL TYPE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
180040	SCR-7	Standard Screw Terminals	2NC	7NC 4NO
180040-P	SCR-7	Pluggable Screw Terminals	2NC	7NC 4NO

APPLICATION:

Depending upon the risk assessment for the application the VIPER Safety Relay range can be configured to achieve up to Performance Level PLe and Category 4 according to ISO13849-1. The devices must be wired in accordance with the examples shown in the following Figs. 1-6.

Fig. 1: SCR-21-i
Automatic Restart Mode (Single Channel) E-Stop Switch

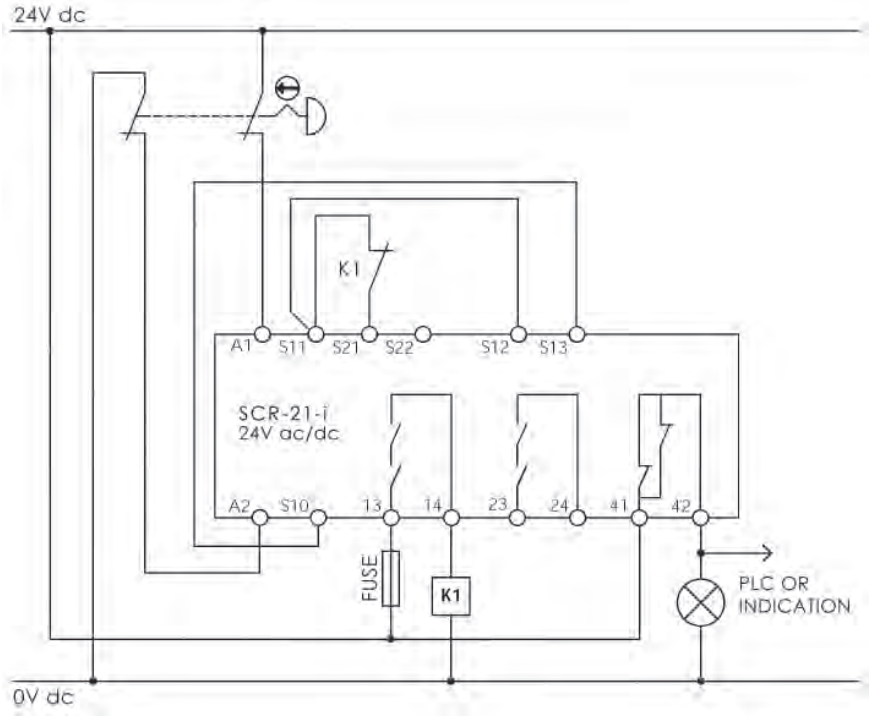
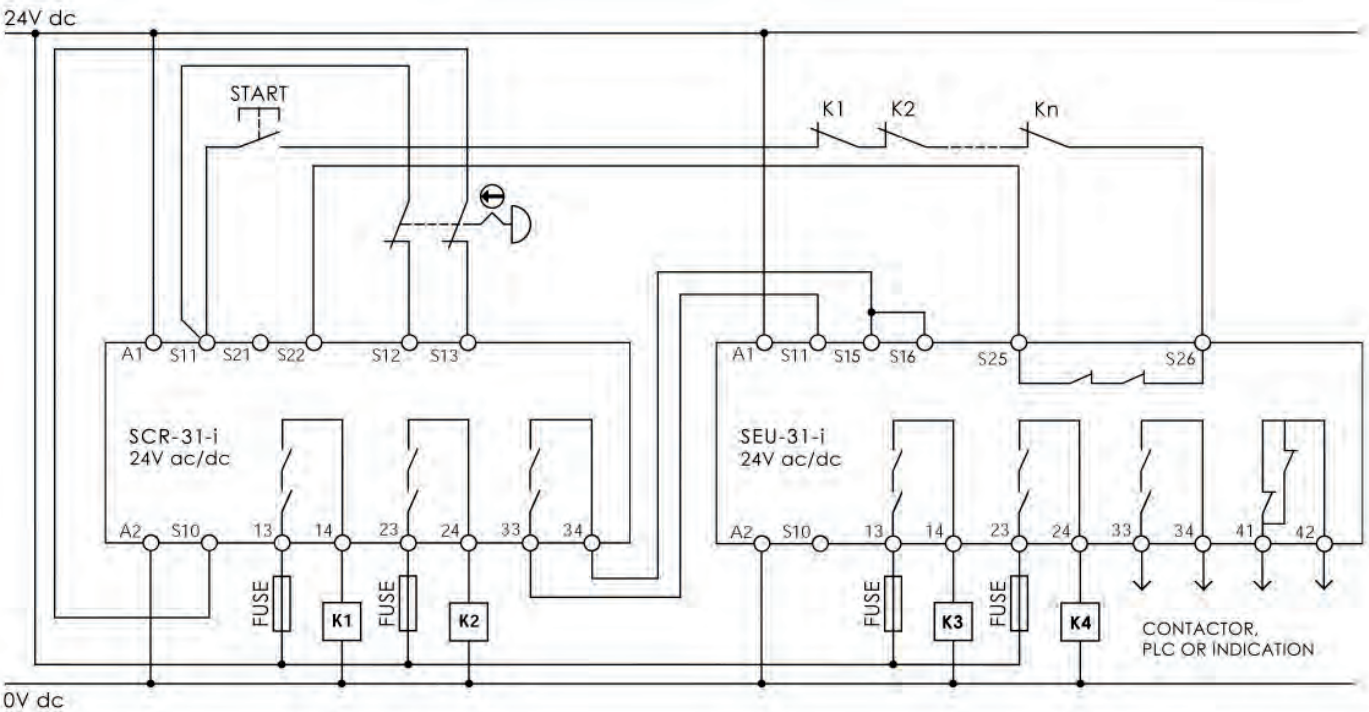


Fig. 2: SCR-31-i & SEU-31-i
Manual Restart Mode (Dual Channel) E-Stop Switch



Connection Examples **IDEM VIPER Safety Relays**

Fig. 3: SCR-31-i
Manual Restart Mode (Dual Channel) Tongue Switch

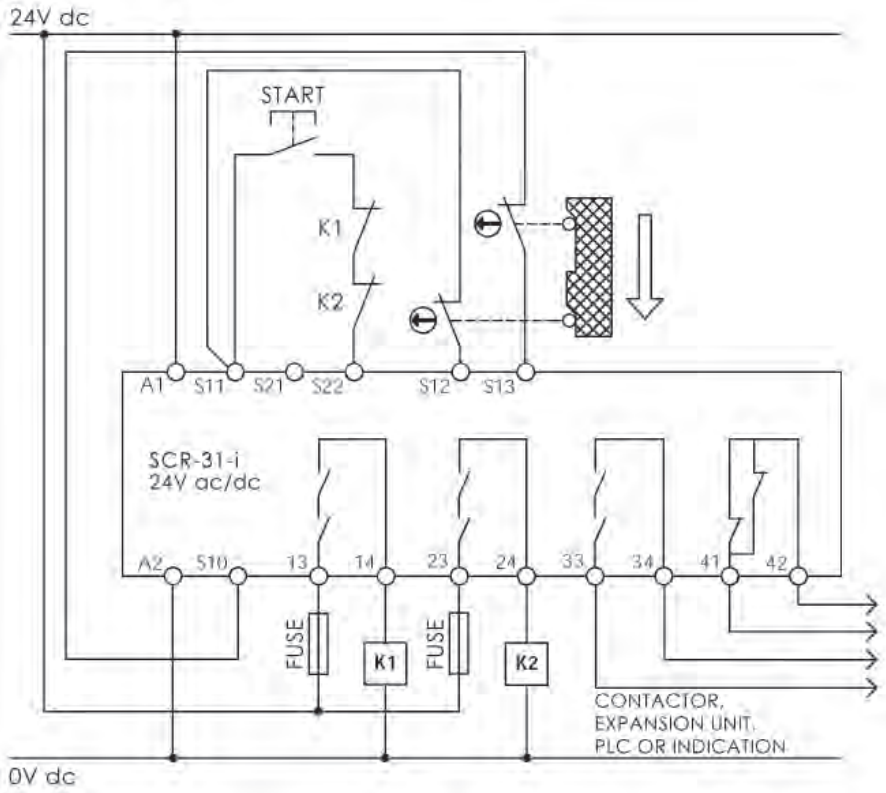


Fig. 4: SCR-31-i
Automatic Restart Mode (Dual Channel) Non Contact Switch

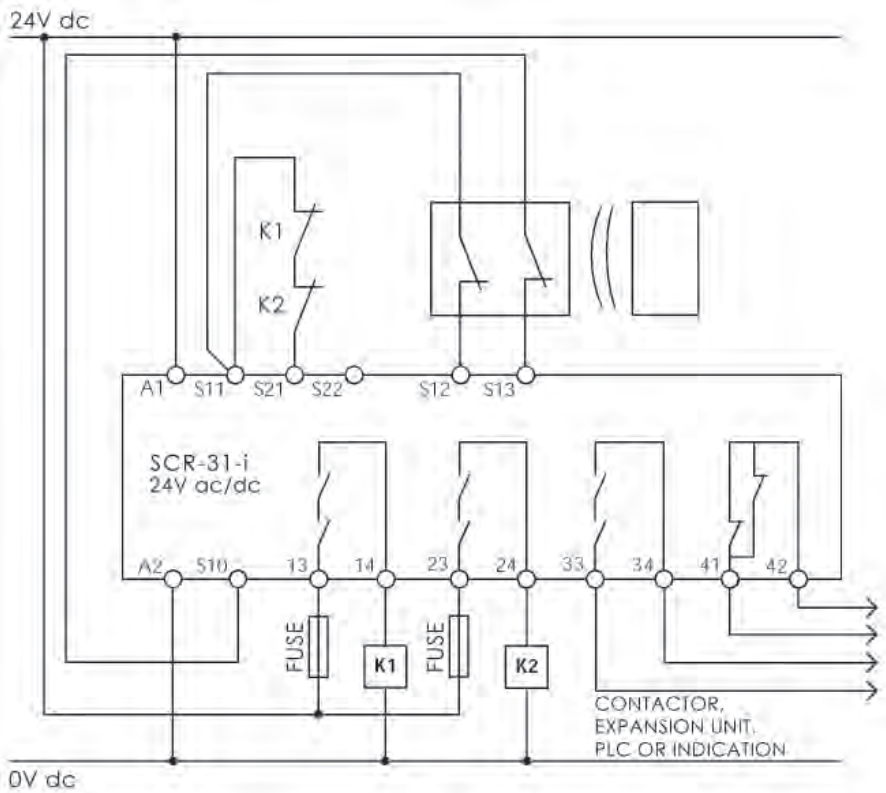


Fig. 5: SCR-31-i & SEU-31-TD-i
Manual Restart Mode (Dual Channel) Solenoid Locking Switch (Delayed Unlocking)

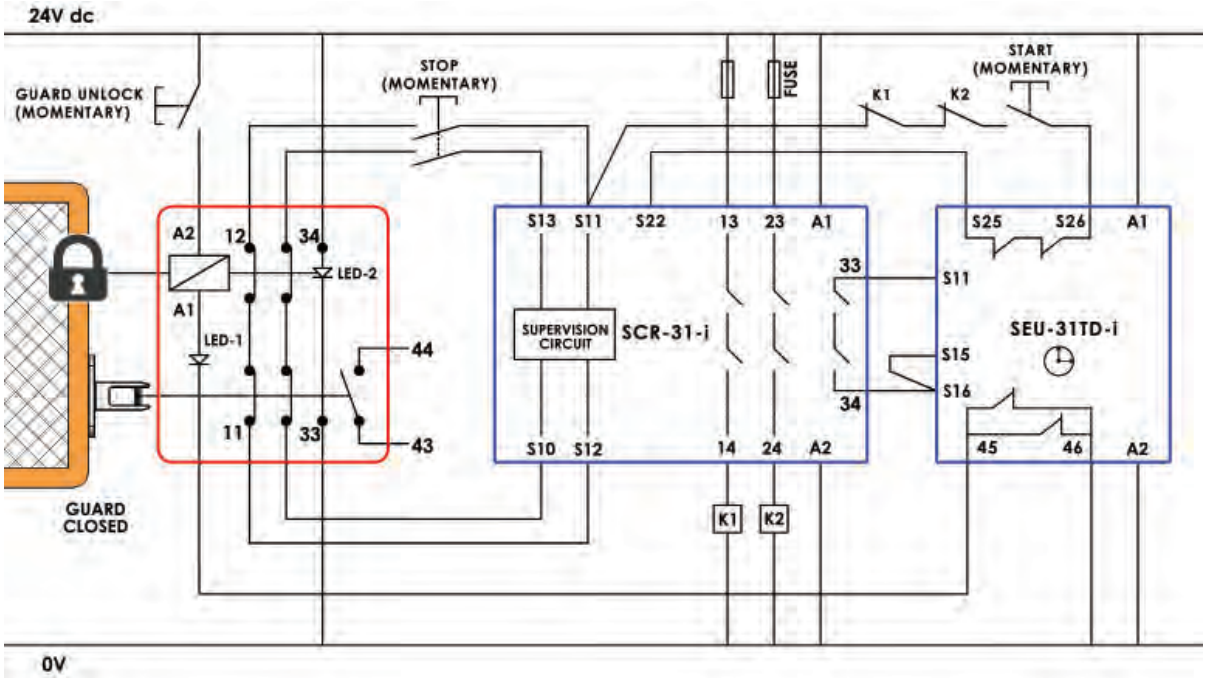
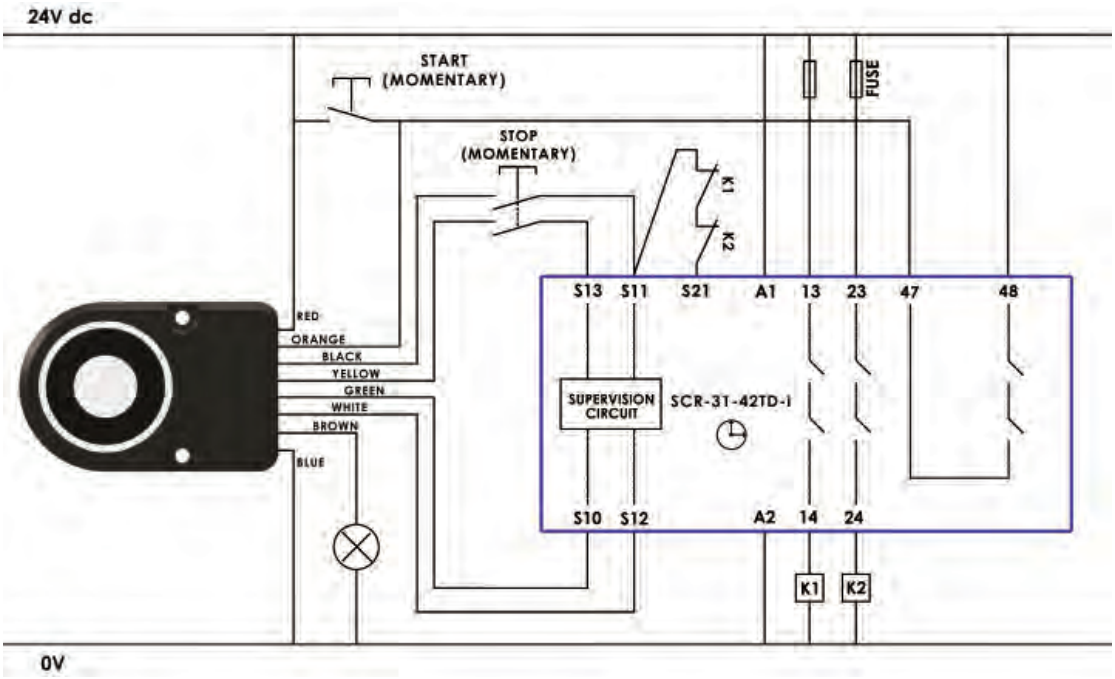


Fig. 6: SCR-31-42TD-i
Manual Restart Mode (Dual Channel) Non Contact Switch with
Magnetic Lock (delayed unlocking)



Connection Examples **IDEM VIPER Safety Relays**

Fig. 7: SCR-31-42TD-i
Manual Restart Mode (Dual Channel) Solenoid Locking Switch (delayed unlocking)

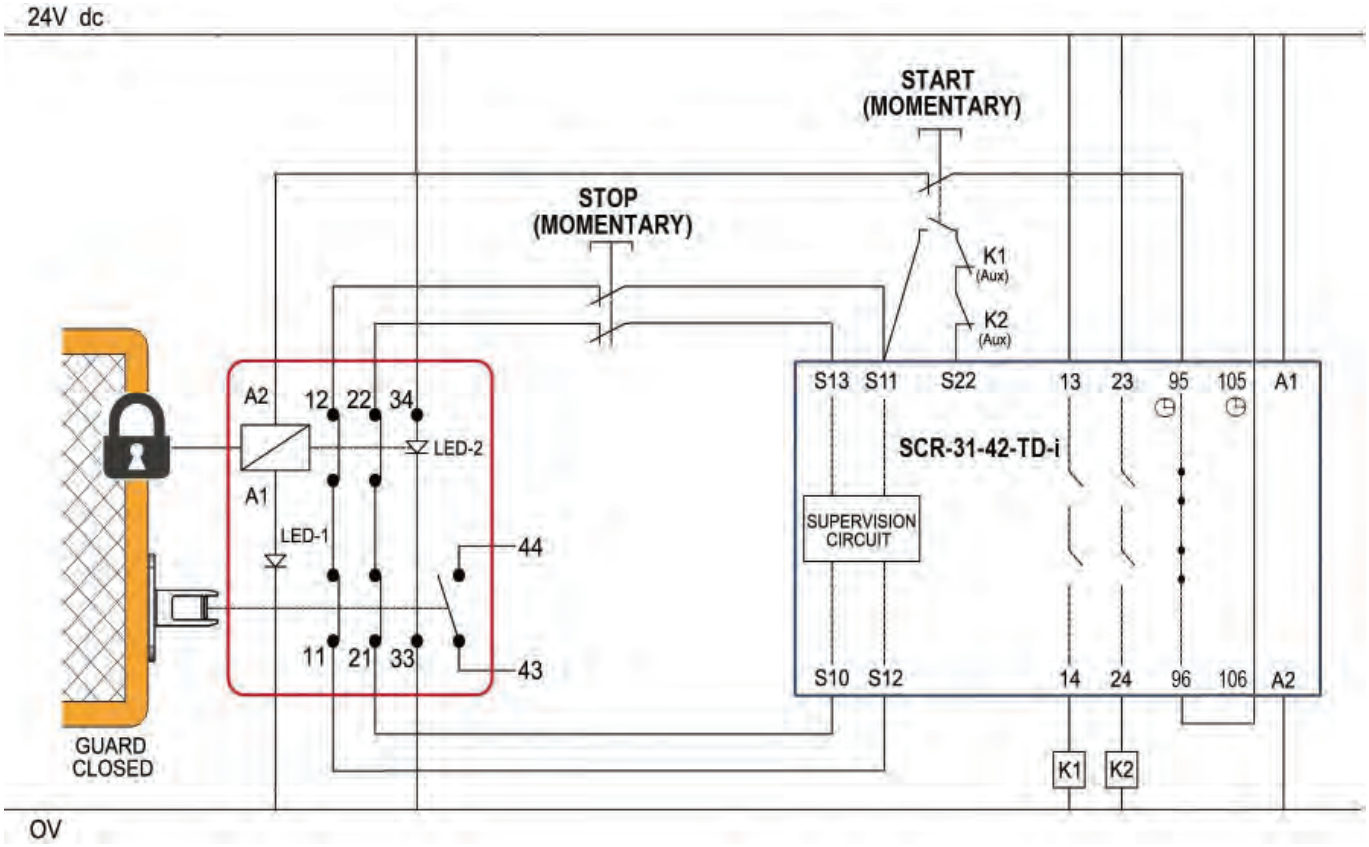
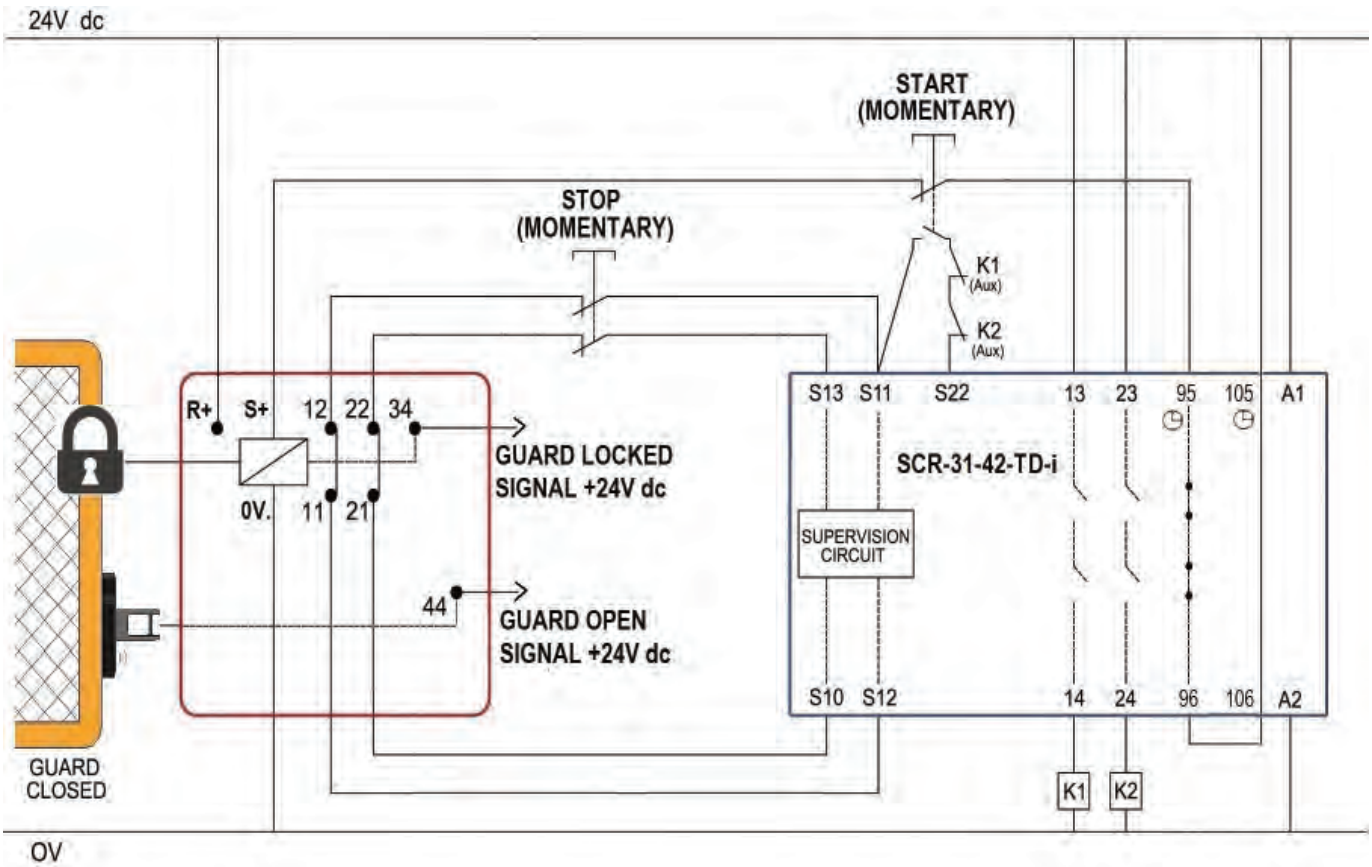


Fig. 8: SCR-31-42TD-i
Manual Restart Mode (Dual Channel) RFID Solenoid Locking Switch (delayed unlocking)



IDEM VIPER DIN Rail Power Supply **TYPE DRS-2415**

DESCRIPTION:

The Viper DRS-2415 Power Supply from IDEM Safety Switches has been designed to provide regulated 24VDC power to devices such as safety switches and safety relays.
The DRS-2415 has both short circuit and over-voltage protection built in, this is in addition to a "DC OK" voltage free signal contact to indicate the status of the DC power.

FEATURES:

Wide input range (85-265V AC).

DC OK indication and signal contact.

6 output volatge terminals for multiple connections.

22.5mm DIN rail mountable enclosure.

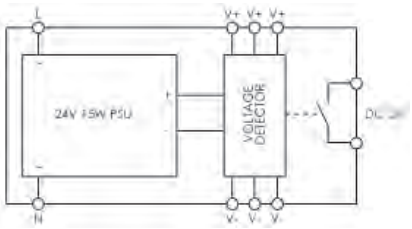
24 Vdc output 15W/0.63A.

Over-Voltage protection.

Short circuit protection.

The DRS-2415 requires no maintenance, there are no serviceable parts.

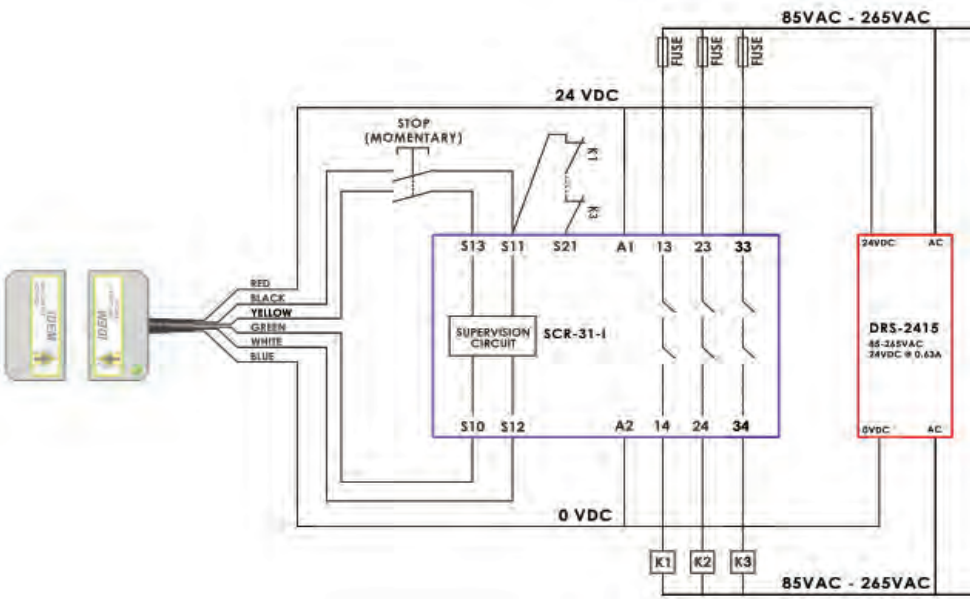
INTERNAL BLOCK DIAGRAM AND TERMINAL CONNECTION:



Terminal Connections

L	Live Connection VAC Supply
N	Neutral Connection VAC Supply
+	+24VDC Output Connection
-	0VDC Output Connections
DC OK	DC Status Signal Output Closed = 'OK'

CONNECTION EXAMPLE:

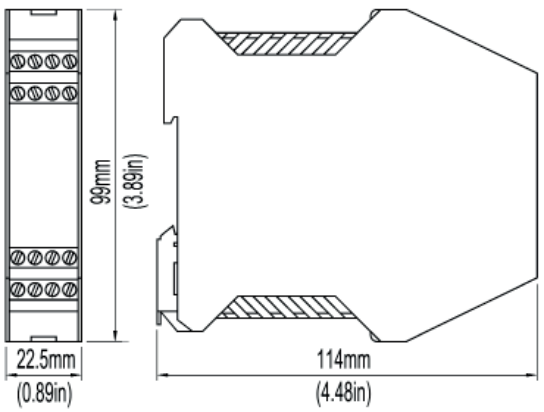


SPECIFICATIONS:

Specifications:	
AC Input Voltage Range	85 – 265 Vac
Input Frequency	50 – 60 Hz
Inrush Current	30A at 240Vac, cold start at 25°C
Input Current (115/230VAC)	0.4 / 0.2 A
Output Voltage	24 Vdc
Output Current	0.63 A
Load Regulation	±1% (10% to 100% load)
Line Regulation	±0.5% (100-240VAC line change)
Ripple & Noise	1% or 50mV whichever is greater
Short Circuit Protection	Continuous – hiccup mode
Over-voltage Protection	130-150%, Zener clamp
Efficiency	75%
Operating Temperature	0 - +55°C
Storage Temperature	-20 - +85°C
DC OK Signal Contact Rating	24Vac/dc, 200mA

SALES NUMBER	DESCRIPTION
180040	DRS-2415 DIN Rail Power Supply 85 - 265Vac

DIMENSIONS:



Grab Wire Safety Rope Switches: **Guardian Line Series**

GLH Range (Die Cast Housings - cover up 250m (GLHD) with one switch):

Heavy Duty Single Head
Type: GLHL (Die Cast)

Heavy Duty Dual Head
Type: GLHD (Die Cast)

Heavy Duty Single Head
Type: GLHR (Die Cast)

GLH-SS Range (Stainless Steel Housings - cover up 250m (GLHD-SS) with one switch):

Heavy Duty Single Head
Type: GLHL-SS (Stainless Steel)

Heavy Duty Dual Head
Type: GLHD-SS (Stainless Steel)

Heavy Duty Single Head
Type: GLHR-SS (Stainless Steel)

GLS Range (Die Cast or Stainless Steel Housings - cover up 100m (S/S) or 80m (Die Cast) with one switch):

General Duty
Type: GLS (Die Cast)

General Duty
Type: GLS-SS (Stainless Steel)

GLM Range (Die Cast or Stainless Steel - cover up 50m with one switch):

Mini Duty
Type: GLM (Die Cast)

Mini Duty
Type: GLM-SS (Stainless Steel)

GLS-AR Range with Auto Reset (not an Emergency Stop) (Die Cast or Stainless Steel Housings):

General Duty
Type: GLS-AR (Die Cast)

General Duty
Type: GLS-AR-SS (Stainless Steel)

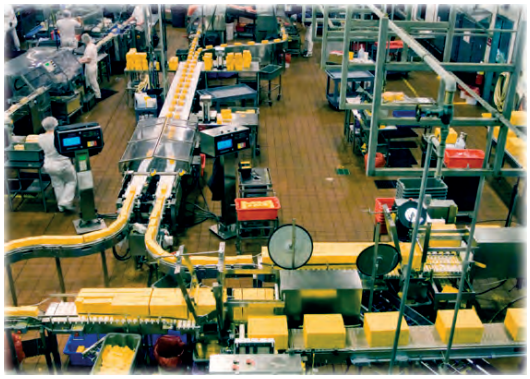
Grab Wire Safety Rope Switches: **Guardian Line Series**

APPLICATION:

Safety Rope Emergency Stop Switches are mounted on machines and sections of plant conveyors which cannot be protected by guards.

In contrast to traditional mushroom head type Emergency Stop buttons, Safety Rope Switches can initiate the emergency command from any point along the installed rope length.

In combination with any dual channel safety monitoring controllers IDEM Safety Rope Systems can be used as emergency stop devices and monitored for up to PLe to ISO13849-1.



OPERATION:

All IDEM Safety Rope Emergency Stop Switches conform to European Standard ISO13850 (EN418) and EN60947-5-5.

They have a positive mechanical linkage between the switch contacts and the wire rope as per EN60947-5-1. The emergency stop switches are brought into the operational condition by pre-tensioning the rope by use of a tensioner/gripper device which clamps the rope and then hooks to the switch eyebolts.

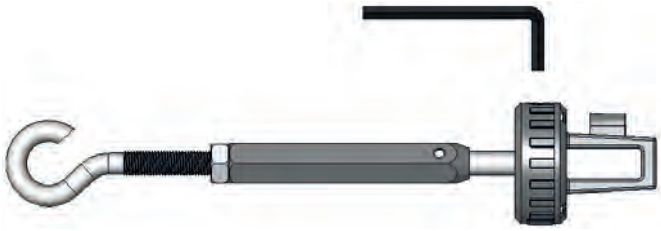
Correct tension can be observed by viewing the tension indicator on the switch housing. Once tensioned the switch contact blocks can be set to the operational condition (safety contacts closed, auxiliary contacts open) by pressing the blue reset button on the switch cover.

All of the Safety Rope Switches have wire-breakage monitoring. On pulling or breakage (tension loss) of the rope, the safety contacts are positively opened and the auxiliary contacts are closed. The switches are mechanically latched and can then only be returned to the operational condition by pressing the reset button as required by ISO13850 (EN418).

PATENTED TENSIONER/GRIPPER:

IDEM have designed and patented a Tensioner/Gripper accessory available in Stainless Steel or Galvanised metal that provides rapid installation for connection to the switch eyebolts and prevents frequent re-tensioning or maintenance that can be caused by cable tension loss.

The use of this accessory greatly reduces installation time and can be carried out by one man. The benefit of reducing the time required for re-tensioning greatly reduces machine down time.



FEATURES:

LED visual indication of rope status:
- Steady Green = Machine Running
- Steady or Flashing Red = Machine Stopped

Choice of body housings:
- Rugged die-cast metal body (painted yellow)
- Stainless Steel 316 - ideal for Food Industry

All internal and external screws are stainless steel.
Enclosure protection to IP67 (Die-cast versions).
Enclosure protection to IP69K (Stainless Steel 316 versions).
Easy to wire - up to 4 conduit entries.

E STOP BUTTON:

Screw fitting mushroom type E Stop button.

Using Safety Rope Switches: **Guardian Line Series**

APPLICATION:

IDEM Guardian Line Safety Rope Switches are designed to be mounted on machines and sections of conveyors which cannot be protected by guards. In contrast to traditional mushroom head type Emergency Stop buttons, Safety Rope Switches can initiate the emergency command from any point along the installed rope length and provide robust Emergency Stop Rope Pull protection for exposed conveyors or machines.

In combination with a dual channel safety monitoring relay IDEM Safety Rope Systems can be used as emergency stop devices monitored for up to PLe to ISO13849-1. All IDEM Safety Rope Emergency stop switches conform to ISO13850 and EN60947-5-5. They have a positive mechanical linkage between the switch contacts and the wire rope. The switches have wire-breakage monitoring.

On pulling the rope the safety contacts are positively opened and the auxiliary contacts are closed. The switches are mechanically latched and can then only be returned to the operational condition by pressing the blue reset button as required by ISO13850.

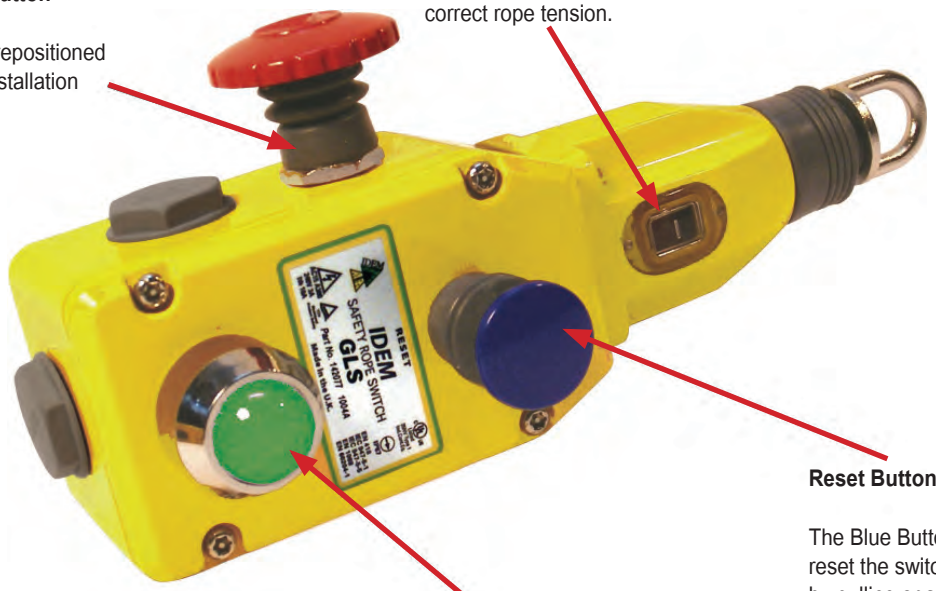
An optional 2 colour LED indicator is available to enable switch status to be viewed from a distance.

Tension Indicator

Ensures the system is easy to set up and maintain the correct rope tension.

Mushroom Type Emergency Stop Button

Can be installed or repositioned Left or Right after installation



Reset Button

The Blue Button must be pushed to reset the switch following activation by pulling or slackening of the Rope

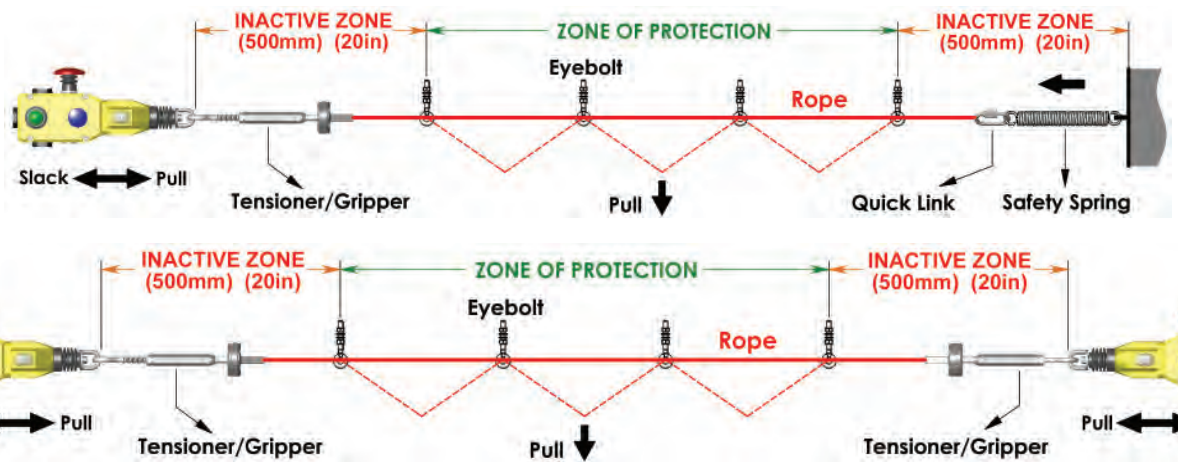
Indicator LED

Can be wired to flash RED in the event of the Rope being pulled - switch activated, or illuminate steady GREEN to indicate a reset switch in machine "Run" state. Visible from long distances.

SET UP OF THE SYSTEM:

Rope support eyebolts must be fitted at 2.5m min. to 3m max. intervals along all rope lengths between switches. The rope must be supported **no more than 500mm from the Rope Switch's eyebolt or Safety Spring** (if used). It is important that this first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button.

When using one switch the rope must be anchored at the other end using a Safety Spring. When using a Safety Spring a maximum of one corner pulley only may be used to ensure complete lengths of rope are visible to either the switch or the spring anchorage.



Using Safety Rope Switches: **Guardian Line Series**

RELIABLE CONNECTIVITY:

Tensioning of the rope is achieved by the use of IDEM's new patented Tensioner/Gripper accessory.

Traditional turnbuckle and clamp systems are difficult to tension and adjust and frequent re-tensioning or maintenance is normally required of either the turnbuckle or the clamps. Traditional tensioning systems make viewing of the switch tension window difficult.

For greater reliability and ease of installation the Tensioner/Gripper accessory significantly reduces the installation time by offering an eyehook and tensioner thimble and high strength gripper in one assembly to enable rapid connection to the switch eyebolts and fast and accurate tensioning of the Rope. By being in close proximity to the viewing window of the switch systems can be easily tensioned accurately and quickly. The double clamp mechanism prevents rope slippage and significantly reduces machine downtime which can occur with traditional turnbuckle systems.

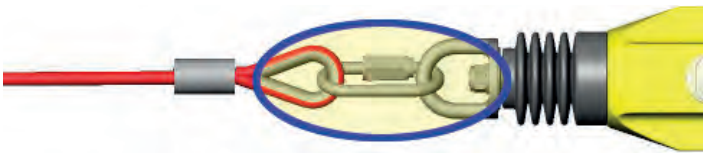
TENSIONER/GRIPPER SYSTEM:

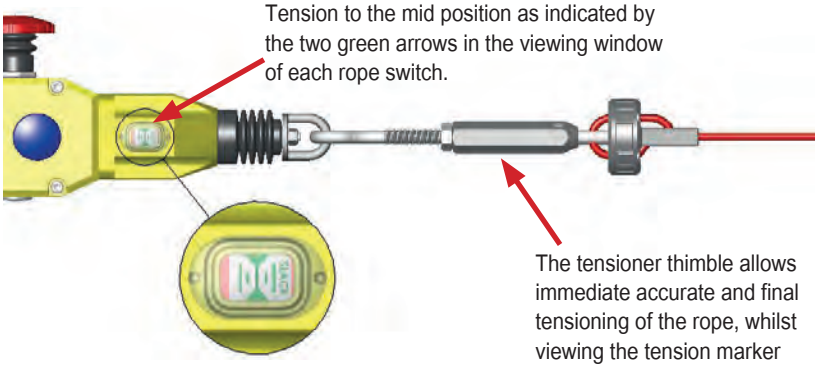
The end of the safety rope is fed through a central hole in a cone shaped guide which protrudes from the main housing.

After being fed through the guide hole the rope enters the main housing by going through a feed hole and then is looped back through 180 degrees and is fed through a second feed hole on the opposite side of the mechanism.

The rope is then pulled for maximum tension and is locked in position by a locking bar inside the main housing which is moved by turning an Allen type locking bolt.

For systems up to 50m a Quick Link termination is provided for easy connection to either a Safety Spring or Switch eyebolt.
(Note: For systems above 50m a Tensioner/Gripper is required for each side).





Tension to the mid position as indicated by the two green arrows in the viewing window of each rope switch.

The tensioner thimble allows immediate accurate and final tensioning of the rope, whilst viewing the tension marker through the viewing window on the rope switch.

Patented Design
Withstands 1500N force

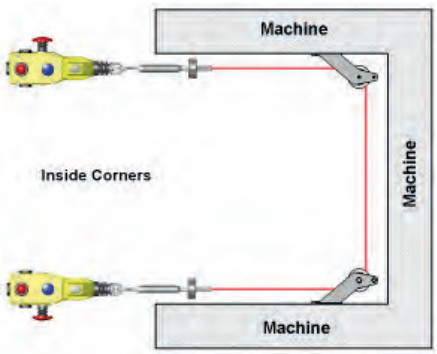
UNIVERSAL PULLEY:

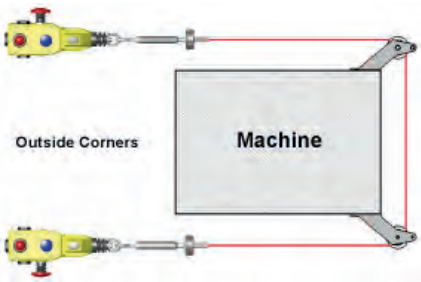
Universal Pulley
Can be used on inside and outside corners.
Stainless Steel.

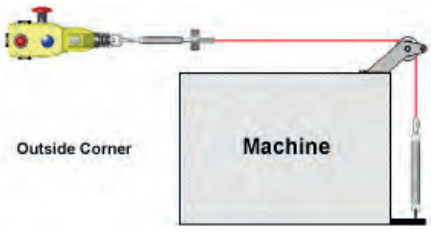
NAVIGATING CORNERS:

Because of the added friction on the eyebolts and rope when navigating corners, IDEM's unique "universal" pulley can be used to navigate inside or outside corners without causing damage to the rope. They are manufactured in Stainless Steel and can be rigidly mounted.

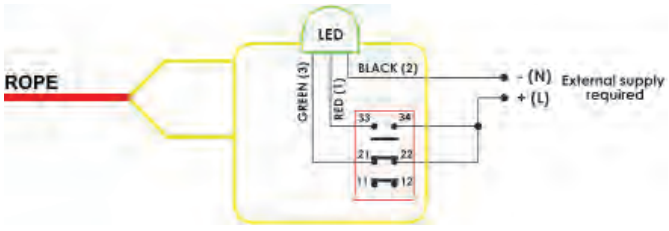
Examples of using the Universal Pulley:







WIRING DIAGRAM FOR LED:



Using Safety Rope Switches: **Guardian Line Series**

FLEXIBLE ROLLER EYEBOLT WITH ADJUSTMENT APPLICATION:

When using rope pull switch systems on conveyors the rope is supported along the conveyor length by equally spaced eyebolts.

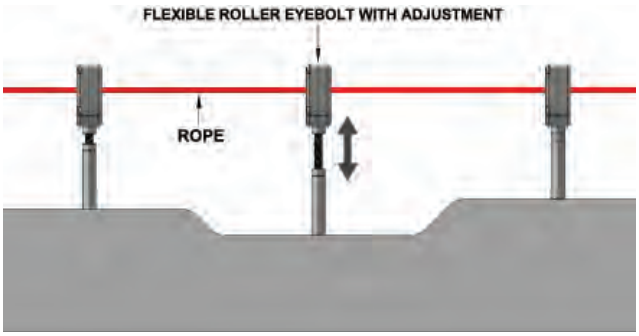
Traditional eyebolts are made from solid metal and offer an eyelet to support the rope and provide a catenary between eyebolts to deflect the rope during pulling. On long conveyors eyebolt mounting positions can vary along the length of the conveyor and therefore mis-alignment of the eyebolts along the conveyor can cause a friction problem making the systems difficult to operate.

After operation the rope system, the rope may not be able to move (due to the friction) and allow the switch mechanism to be reset.

Ultimately the rope can be damaged or wear to breaking point.

PROPERTIES & FEATURES:

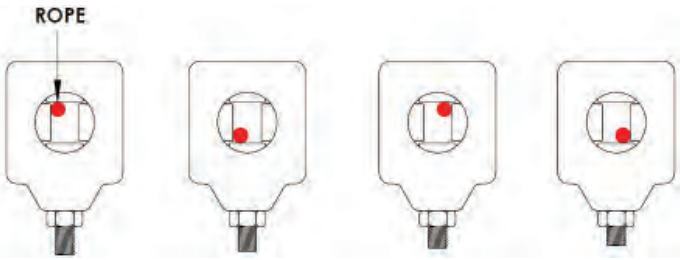
Adjustable mounting positions provides mounting flexibility in adjustment in two planes. This better copes with uneven positioning of eyebolts over the length of the conveyor or conveyors with radius profiles.



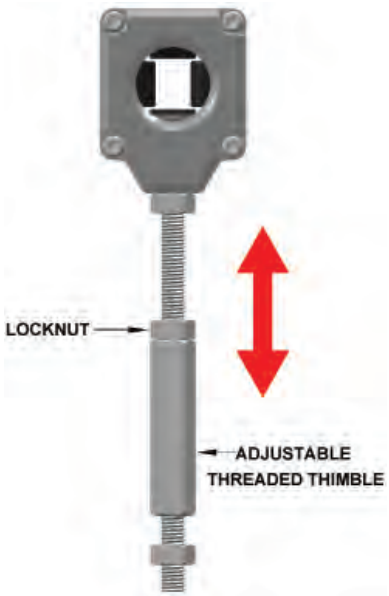
Moveable rollers within the eyebolt structure to ensure no loss of movement due to friction when pulled in any direction.

The position of the rollers allow contact with the rope through 360 degrees within the eyelet of the eyebolt.

Friction is eliminated due to the fact that at any point of contact between the rope and a roller there is rotational movement.



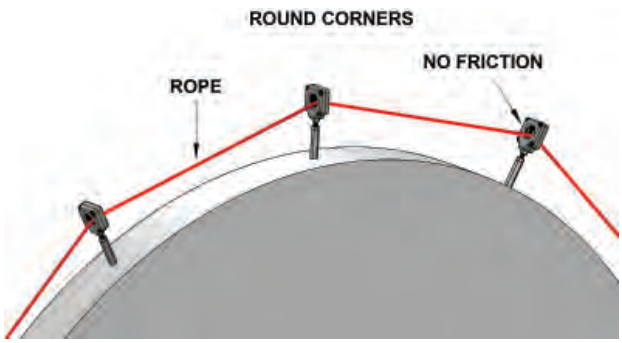
The eyebolt position relative to the mounting frame of the conveyor can be adjusted in length away from the conveyor mounting frame by turning an integral adjustable threaded thimble. The eyebolt head can be rotated to provide further adjustment depending upon the direction of the rope along the conveyor length. The final position of the head can be fixed by the locknut or left free to rotate during use.



ORDERING:

Thimble, nuts and bolt are manufactured in stainless steel.
Housing is manufactured in mirror polished die cast metal.
Rollers are manufactured from plastic

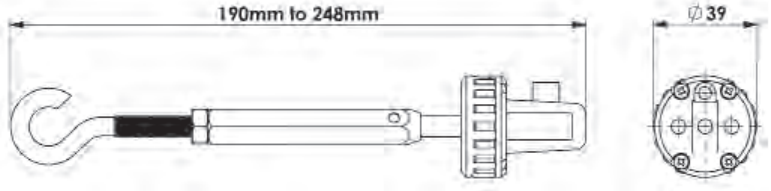
SALES NUMBER	ITEM
140048	Flexible Roller Eyebolt with Adjustment
140099	Flexible Roller Eyebolt with Nuts - No Adjustment



Using Safety Rope Switches: **Guardian Line Series**

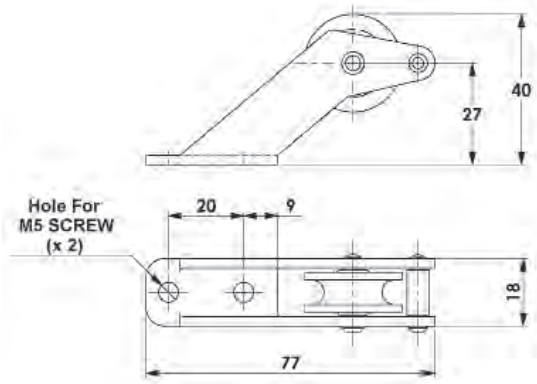
GUARDIAN LINE CONNECTIVITY ACCESSORIES (see p207) DIMENSIONS:

TENSIONER/GRIPPER SYSTEM



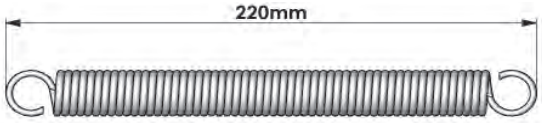
SALES NUMBER	ITEM	MATERIAL
140019	Rope Tensioner Gripper	Stainless Steel
140020	Rope Tensioner Gripper	Galvanised Steel

UNIVERSAL PULLEY



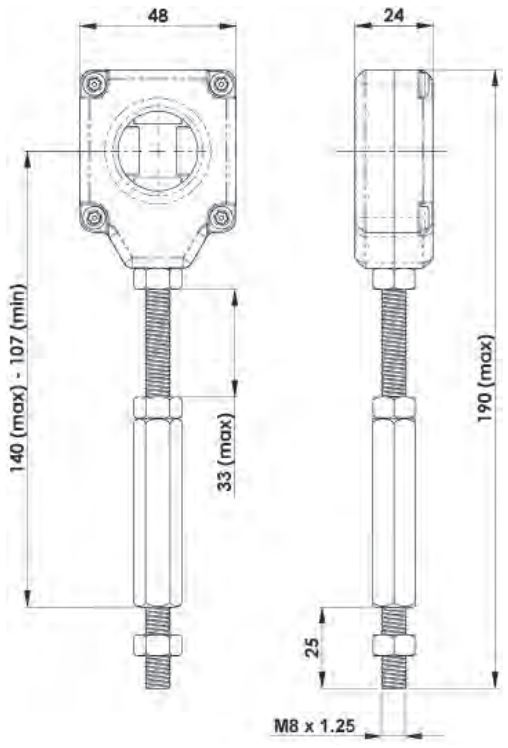
SALES NUMBER	ITEM	MATERIAL
140021	Universal Pulley	Stainless Steel
140064	Universal Pulley	Galvanised

STAINLESS STEEL SAFETY SPRING



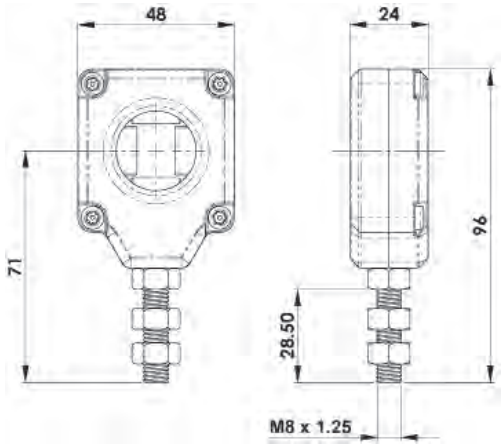
SALES NUMBER	ITEM	MATERIAL
143043	220mm Long Safety Spring	Stainless Steel

FLEXIBLE ROLLER EYEBOLT WITH ADJUSTMENT



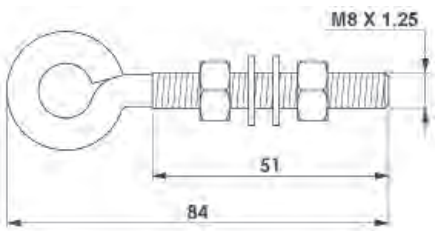
SALES NUMBER	ITEM
140048	Flexible Roller Eyebolt with Adjustment

FLEXIBLE ROLLER EYEBOLT WITH NUTS NO ADJUSTMENT



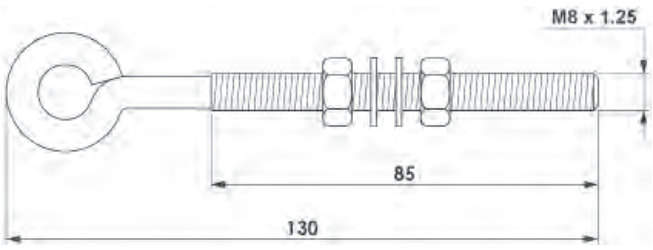
SALES NUMBER	ITEM
140099	Flexible Roller Eyebolt with Nuts - No Adjustment

STANDARD EYEBOLT 84mm LONG



SALES NUMBER	ITEM	MATERIAL
140045	Eyebolt (8 Pack) 84mm Long	Stainless Steel
140046	Eyebolt (8 Pack) 84mm Long	Galvanised

STANDARD EYEBOLT 130mm LONG



SALES NUMBER	ITEM	MATERIAL
140126	Eyebolt (8 Pack) 130mm Long	Stainless Steel
140127	Eyebolt (8 Pack) 130mm Long	Galvanised

Guardian Line Mini Duty **Type: GLM**

FEATURES:

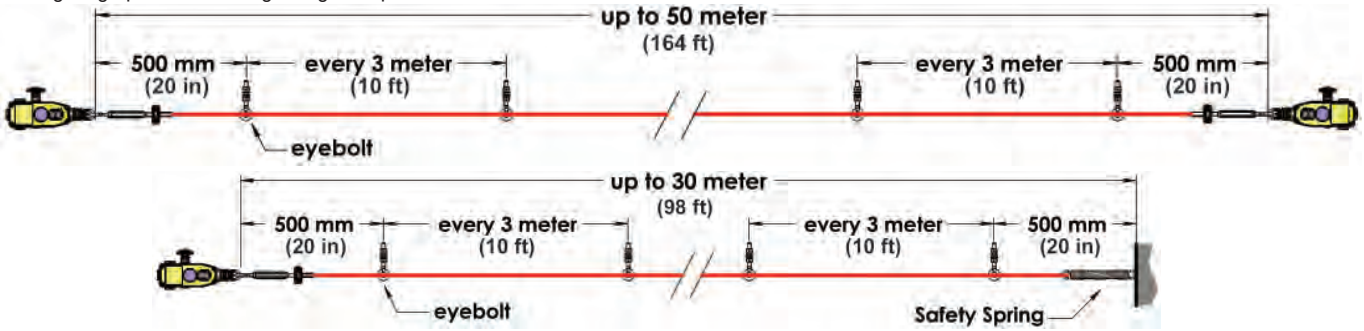
PROTECTION UP TO 50 METRES (164 FEET)

The GLM is a compact yet robust die-cast Mini Duty Safety Rope Pull Switch which has been designed to protect short conveyor lengths where protection is required up to 50m using two switches or up to 30m using just a single switch.

The GLM provides a reliable, cost-effective safety solution for conveyor systems and can be enhanced by adding an external mushroom type emergency stop at the switch or a bi-colour LED is available to show switch status from a distance.

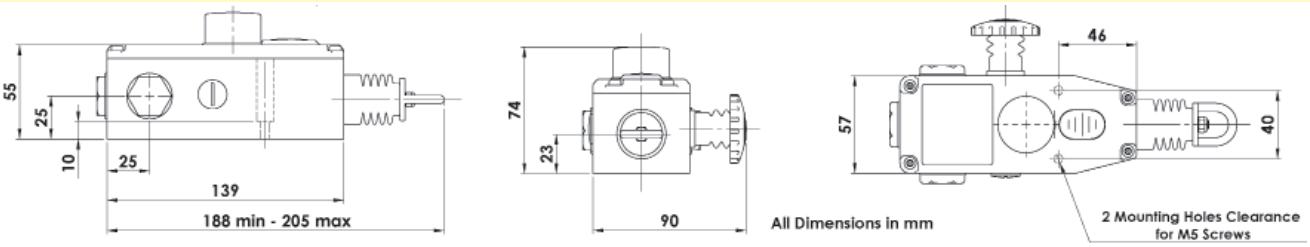
The GLM has a choice of 3 or 4 pole contacts to ensure flexibility with all modern control applications.

With the added benefit of rugged internal sealing bellows the GLM is able to undergo high pressure hosing at high temperature.



It is important that the first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button. IDEM also recommend when using a Safety Spring that a maximum of one corner pulley is used.

DIMENSIONS:



Standards: EN60947-5-1 EN60947-5-5 EN62061
UL508 ISO13850 ISO13849-1

Safety Classification and Reliability Data:

Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
	MTTFd 214 years
Enclosure Material	Die Cast (painted yellow)
IP Rating	IP67 (NEMA 6)
Rope Span	Up to 50m (2 switches) 30m (1 switch)
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	3 x M20 or 3 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm
	Lid T20 Torx M4 1.5Nm
	Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Weight	640g approx.
Contact Type	EN60947-5-1 double break type Zb
	Snap Action up to 4NC (positive break)
	2NO (Auxiliary)
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15 A300
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

SALES NUMBER	CONDUIT	CONTACTS	FITTINGS
143001	M20	2NC 1NO	
143002	1/2" NPT	2NC 1NO	
143003	M20	3NC	
143004	1/2" NPT	3NC	
143005	M20	2NC 1NO	E- Stop
143006	1/2" NPT	2NC 1NO	E- Stop
143007	M20	3NC	E- Stop
143008	1/2" NPT	3NC	E- Stop
143050	M20	3NC 1NO	
143051	1/2" NPT	3NC 1NO	
143052	M20	2NC 2NO	
143053	1/2" NPT	2NC 2NO	
143054	M20	4NC	
143055	1/2" NPT	4NC	
143056	M20	3NC 1NO	E- Stop
143057	1/2" NPT	3NC 1NO	E- Stop
143058	M20	2NC 2NO	E- Stop
143059	1/2" NPT	2NC 2NO	E- Stop
143060	M20	4NC	E- Stop
143061	1/2" NPT	4NC	E- Stop
143062	M20	3NC 1NO	LED
143063	1/2" NPT	3NC 1NO	LED
143064	M20	2NC 2NO	LED
143065	1/2" NPT	2NC 2NO	LED
143066	M20	3NC 1NO	E-Stop & LED
143067	1/2" NPT	3NC 1NO	E-Stop & LED
143068	M20	2NC 2NO	E-Stop & LED
143069	1/2" NPT	2NC 2NO	E-Stop & LED
143009	Replacement Lid		
143010	Replacement Lid/LED		LED
For LED Models add voltage code to Sales Number see below			
Steady Green/Flashing Red			
A - 24Vdc B - 110Vac C - 230Vac			
Steady Green/Steady Red			
AS - 24Vdc BS - 110Vac CS - 230Vac			

Gold Plated Contacts available for low power circuits (5V 5mA). Add GC to Sales Number e.g. 143001-GC

Guardian Line Mini Duty **Type: GLM-SS**

FEATURES:

PROTECTION UP TO 50 METRES (164 FEET)

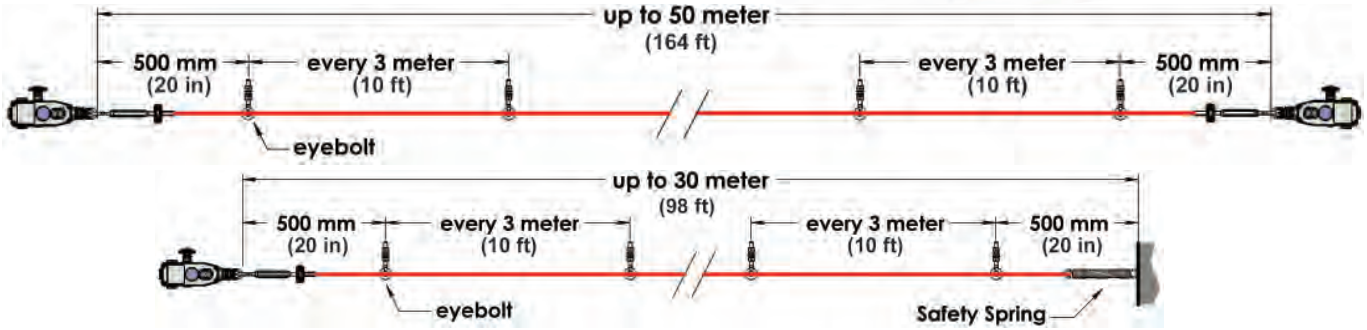
STAINLESS STEEL 316

The GLM-SS is a Stainless Steel compact but extremely robust Mini Duty Safety Rope Pull Switch designed to protect short conveyor lengths where protection is required up to 50m using two switches or up to 30m using just a single switch.

The GLM-SS provides a reliable, cost-effective safety solution for conveyor systems and can be enhanced by adding an external mushroom type emergency stop at the switch or a bi-colour LED to show switch status from a distance.

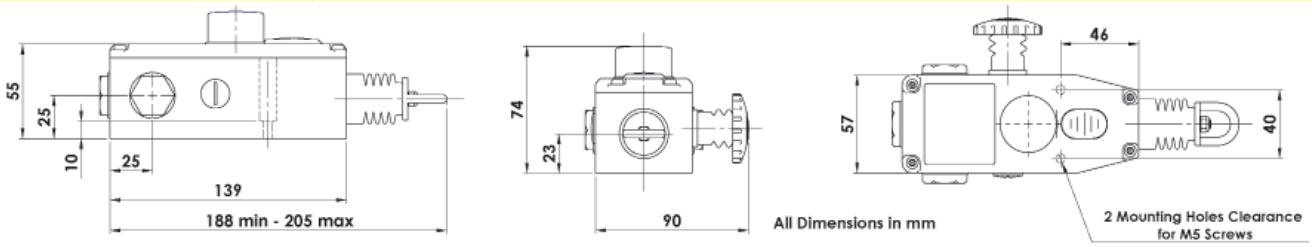
The GLM-SS comes with a choice of 3 or 4 pole contacts to ensure flexibility with all modern control applications.

With the added benefit of rugged internal sealing bellows the GLM-SS is able to undergo high pressure hosing at high temperature.



It is important that the first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button. IDEM also recommend when using a Safety Spring that a maximum of one corner pulley is used.

DIMENSIONS:



Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 214 years
Enclosure Material	Stainless Steel 316
IP Rating	IP69K
Rope Span	Up to 50m (2 switches) 30m (1 switch)
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	3 x M20 or 3 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Weight	640g approx.
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 4NC (positive break) 2NO (Auxiliary)
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15 A300
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

SALES NUMBER	CONDUIT	CONTACTS	FITTINGS
148001	M20	2NC 1NO	
148002	1/2" NPT	2NC 1NO	
148003	M20	3NC	
148004	1/2" NPT	3NC	
148005	M20	2NC 1NO	E- Stop
148006	1/2" NPT	2NC 1NO	E- Stop
148007	M20	3NC	E- Stop
148009	1/2" NPT	3NC	E- Stop
148050	M20	3NC 1NO	
148051	1/2" NPT	3NC 1NO	
148052	M20	2NC 2NO	
148053	1/2" NPT	2NC 2NO	
148054	M20	4NC	
148055	1/2" NPT	4NC	
148056	M20	3NC 1NO	E- Stop
148057	1/2" NPT	3NC 1NO	E- Stop
148058	M20	2NC 2NO	E- Stop
148059	1/2" NPT	2NC 2NO	E- Stop
148060	M20	4NC	E- Stop
148061	1/2" NPT	4NC	E- Stop
148062	M20	3NC 1NO	LED
148063	1/2" NPT	3NC 1NO	LED
148064	M20	2NC 2NO	LED
148065	1/2" NPT	2NC 2NO	LED
148066	M20	3NC 1NO	E-Stop & LED
148067	1/2" NPT	3NC 1NO	E-Stop & LED
148068	M20	2NC 2NO	E-Stop & LED
148069	1/2" NPT	2NC 2NO	E-Stop & LED
148009	Replacement Lid		
148010	Replacement Lid/LED		LED
For LED Models add voltage code to Sales Number see below			
Steady Green/Flashing Red A - 24Vdc B - 110Vac C - 230Vac			
Steady Green/Steady Red AS - 24Vdc BS - 110Vac CS - 230Vac			

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 143001-GC

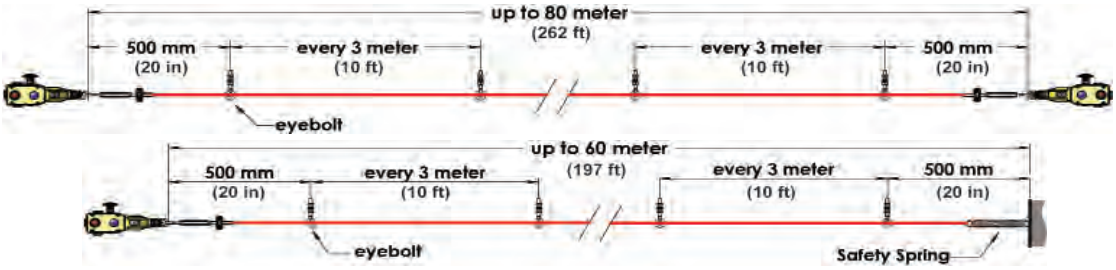
Guardian Line Standard Duty **Type: GLS**

FEATURES:

PROTECTION UP TO 80 METRES (262 FEET)

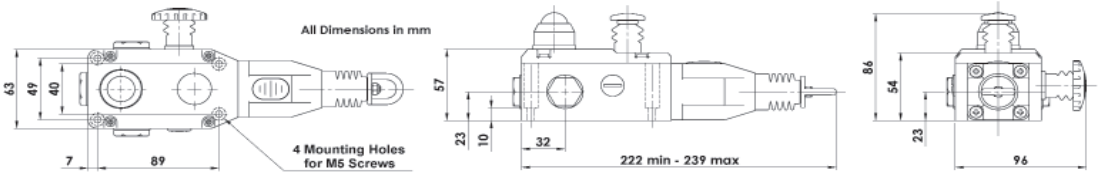
The GLS is a General/Standard Duty robust die-cast Safety Rope Pull Switch designed to protect conveyor lengths where protection is required up to 80m using two switches or up to 60m using a single switch.
They provide a reliable general purpose safety solution for conveyors and offer a choice of fittings depending upon the application.
They can be supplied with a mushroom type Emergency Stop button which can be fitted to the side of the switch to offer an extra traditional Emergency Stop function close to the switch, or can be fitted later after installation without any extra wiring.
A bi-colour LED is also available to show switch status from a distance and they have a choice of 3 pole, 4 pole or Explosion Proof contact blocks to ensure flexibility with all modern control applications.
Rugged internal sealing bellows means the GLS can be high pressure hosed and choice of materials makes them suitable for internal or external use.

GLS-FZ: Special low temperature version -40C available.



It is important that the first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button. IDEM also recommend when using a Safety Spring that a maximum of one corner pulley is used.

DIMENSIONS:



Pre-wired EX versions (see Explosion Proof section)

Standards: EN60947-5-1 EN60947-5-5 EN62061
UL508 ISO13850 ISO13849-1

Safety Classification and Reliability Data:

Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 214 years
Enclosure Material	Die Cast (painted yellow)
IP Rating	IP67 (NEMA 6)
Rope Span	Up to 80m (2 switches) 60m (1 switch)
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	3 x M20 or 3 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Weight	735g approx.
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 4NC (positive break) 2NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

SALES NUMBER	CONDUIT	CONTACTS	FITTINGS
142001	3 x M20	2NC 1NO	
142002	3 x 1/2" NPT	2NC 1NO	
142005	3 x M20	2NC 1NO	LED
142006	3 x 1/2" NPT	2NC 1NO	LED
142009	3 x M20	2NC 1NO	E-Stop
142010	3 x 1/2" NPT	2NC 1NO	E-Stop
142017	3 x M20	2NC 1NO	E-Stop & LED
142018	3 x 1/2" NPT	2NC 1NO	E-Stop & LED
142050	3 x M20	3NC 1NO	
142051	3 x 1/2" NPT	3NC 1NO	
142052	3 x M20	2NC 2NO	
142053	3 x 1/2" NPT	2NC 2NO	
142054	3 x M20	4NC	
142055	3 x 1/2" NPT	4NC	
142056	3 x M20	3NC 1NO	LED
142057	3 x 1/2" NPT	3NC 1NO	LED
142058	3 x M20	2NC 2NO	LED
142059	3 x 1/2" NPT	2NC 2NO	LED
142060	3 x M20	4NC	LED
142061	3 x 1/2" NPT	4NC	LED
142062	3 x M20	3NC 1NO	E-Stop
142063	3 x 1/2" NPT	3NC 1NO	E-Stop
142064	3 x M20	2NC 2NO	E-Stop
142065	3 x 1/2" NPT	2NC 2NO	E-Stop
142066	3 x M20	4NC	E-Stop
142067	3 x 1/2" NPT	4NC	E-Stop
142074	3 x M20	3NC 1NO	E-Stop & LED
142075	3 x 1/2" NPT	3NC 1NO	E-Stop & LED
142076	3 x M20	2NC 2NO	E-Stop & LED
142077	3 x 1/2" NPT	2NC 2NO	E-Stop & LED
142078	3 x M20	4NC	E-Stop & LED
142079	3 x 1/2" NPT	4NC	E-Stop & LED
142026	Replacement Lid		
142027	Replacement Lid/LED		LED
For LED Models add voltage code to Sales Number see below			
Steady Green/Flashing Red A - 24Vdc B - 110Vac C - 230Vac			
Steady Green/Steady Red AS - 24Vdc BS - 110Vac CS - 230Vac			

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 142001-GC

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Guardian Line Standard Duty **Type: GLS-SS**

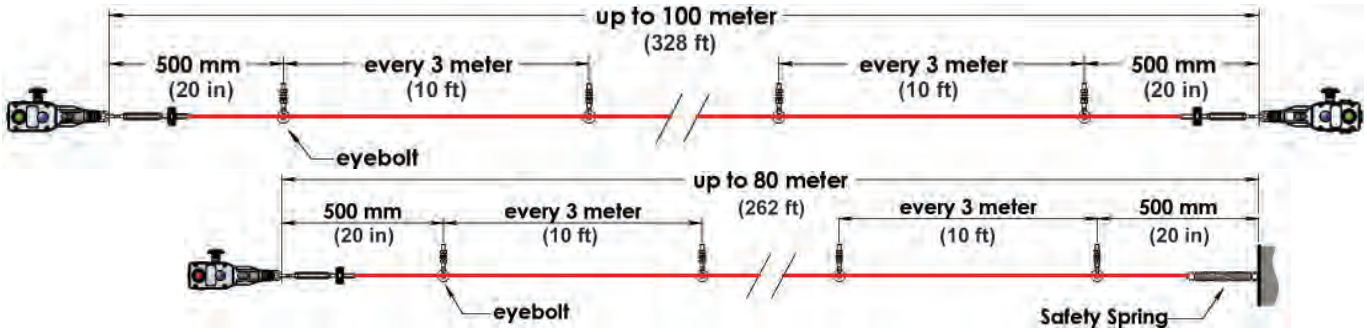
FEATURES:

PROTECTION UP TO 100 METRES (328 FEET)

The GLS-SS is General Duty Safety Rope Pull Switch designed to protect long conveyor lengths up to 100m. The Stainless Steel 316 housings are designed specifically to withstand the harsh environments found in the Food and Pharmaceutical industries. The fixing holes are under the cover of the switch to prevent food trap areas and will survive chemical and detergent washdown by providing all stainless steel parts and robust IP67 and IP69K sealing by using integral bellows and gaskets.
An easily visible bi-colour LED is available to show switch status from a distance and they have a choice of 3 pole, 4 pole or Explosion Proof contact blocks to ensure flexibility with all modern control applications.
Shorter rope spans up to 80m can be achieved by using just one switch therefore making a cost-effective solution and also reducing electrical wiring runs.

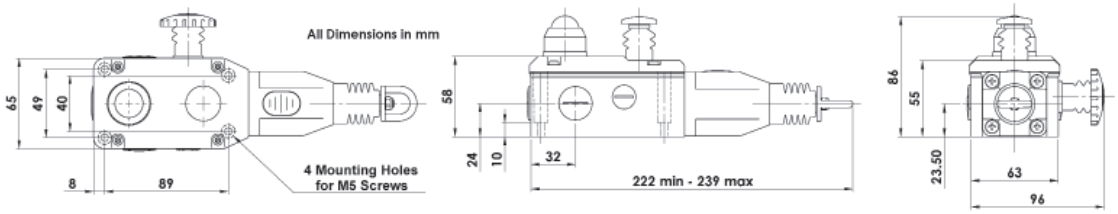
STAINLESS STEEL 316

Low temperature version -40C available GLS-SS-FZ



It is important that the first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button. IDEM also recommend when using a Safety Spring that a maximum of one corner pulley is used.

DIMENSIONS:



Pre-wired EX versions
(see Explosion Proof section)

Standards: EN60947-5-1 EN60947-5-5 EN62061
UL508 ISO13850 ISO13849-1

Safety Classification and Reliability Data:

Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
	MTTFd 214 years
Enclosure/Cover Material	Stainless Steel 316
External Parts	Stainless Steel
IP Rating	IP69K (NEMA PW12) IP67 (NEMA 6)
Rope Span	Up to 100m (2 switches) 80m (1 switch)
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	3 x M20 or 3 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm
	Lid T20 Torx M4 1.5Nm
	Terminals 1.0Nm
Ambient Temperature	-25C +80C (100C cleaning)
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Weight	1810g approx.
Contact Type	EN60947-5-1 double break type Zb
	Snap Action up to 4NC (positive break)
	2NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15 A300
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

STAINLESS STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

SALES NUMBER	CONDUIT	CONTACTS	FITTINGS
144001	3 x M20	3NC 1NO	
144002	3 x 1/2" NPT	3NC 1NO	
144003	3 x M20	2NC 2NO	
144004	3 x 1/2" NPT	2NC 2NO	
144005	3 x M20	4NC	
144006	3 x 1/2" NPT	4NC	
144007	3 x M20	3NC 1NO	LED
144008	3 x 1/2" NPT	3NC 1NO	LED
144009	3 x M20	2NC 2NO	LED
144010	3 x 1/2" NPT	2NC 2NO	LED
144011	3 x M20	4NC	LED
144012	3 x 1/2" NPT	4NC	LED
144013	3 x M20	3NC 1NO	E-Stop
144014	3 x 1/2" NPT	3NC 1NO	E-Stop
144015	3 x M20	2NC 2NO	E-Stop
144016	3 x 1/2" NPT	2NC 2NO	E-Stop
144017	3 x M20	4NC	E-Stop
144018	3 x 1/2" NPT	4NC	E-Stop
144019	3 x M20	3NC 1NO	E-Stop & Led
144020	3 x 1/2" NPT	3NC 1NO	E-Stop & Led
144021	3 x M20	2NC 2NO	E-Stop & Led
144022	3 x 1/2" NPT	2NC 2NO	E-Stop & Led
144023	3 x M20	4NC	E-Stop & Led
144024	3 x 1/2" NPT	4NC	E-Stop & Led
144040	Replacement Lid		
144041	Replacement Lid/LED		LED
For LED Models add voltage code to Sales Number see below			
Steady Green/Flashing Red A - 24Vdc B - 110Vac C - 230Vac			
Steady Green/Steady Red AS - 24Vdc BS - 110Vac CS - 230Vac			

Gold Plated Contacts available for low power circuits (5V 5mA). Add GC to Sales Number e.g. 144001-GC

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Grab Wire Auto-Reset Trip Switch **Type: GLS-AR**

FEATURES:

Grab Wire Auto-Reset Rope Switches are mounted on machines and sections of plant conveyors to initiate a momentary control signal command from any point along the installed rope length.

Pulling the rope causes instant tripping of the control circuit contacts.

Ideal for normal stop circuits where manual resetting of the switch is not required. **This switch cannot be used in safety applications, it is only to be used for indication purposes.**

Rope Pull operated Auto Reset- Stop Switch

GLS-AR

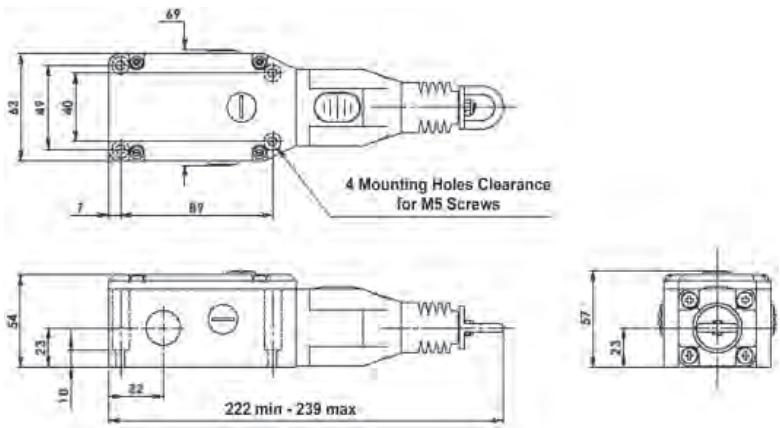
APPLICATION:

The switches have a positive mechanical linkage between the switch contacts and the wire rope as per EN60947-5-1. The switches are brought into the operational condition by pre-tensioning the rope by use of a tensioner device which clamps the rope and then hooks to the switch eyebolts. Correct tension can be observed by viewing the tension indicator on the switch housing. Once tensioned the switch contact blocks are set to the operational condition. i.e. Signal Contacts Closed - Auxiliary Contacts Open.

All of the switches have wire breakage monitoring. On pulling or breakage (loss of tension) of the rope, the normally closed Signal Contacts are opened and the Auxiliary Contacts are closed. The switches will be returned to the operational condition as soon as the rope returns to the set position.

Explosion Proof version:
Zones 1,2,21,22

DIMENSIONS:



Mechanical Features:	
Enclosure/Cover Material	Die-Cast (painted yellow)
IP Rating	IP67
Rope Span	Up to 80m
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	3 x M20 or 3 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Mechanical Life	1,000,000 operations
Approx.Weight	760g
Electrical Features:	
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 2NC + 1NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ATEX Classification (EX Versions)	Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db
Rated Voltage	250Vac
Rated Current	4Aac
Cable Length	3m pre-wired (EX versions)

SALES NUMBER	TYPE	CONDUIT	CONTACTS	FITTINGS
142498	GLS-AR	3 x M20	2NC 1NO	
142499	GLS-AR	3 x 1/2" NPT	2NC 1NO	
142496	GLS-AR	EX	1NC 1NO	Pre-Wired 3m
142497	GLS-AR	EX	2NC	Pre-Wired 3m

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 142498-GC

Grab Wire Auto-Reset Trip Switch **Type: GLS-SS-AR**

FEATURES:

Grab Wire Auto-Reset Rope Switches are mounted on machines and sections of plant conveyors to initiate a momentary control signal command from any point along the installed rope length.

Pulling the rope causes instant tripping of the control circuit contacts.

Ideal for normal stop circuits where manual resetting of the switch is not required. **This switch cannot be used in safety applications, it is only to be used for indication purposes.**

Rope Pull operated Auto Reset- Stop Switch

GLS-SS-AR

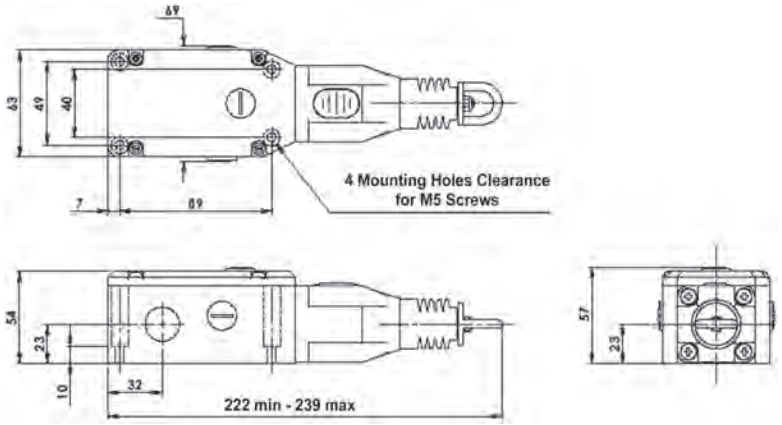
APPLICATION:

The switches have a positive mechanical linkage between the switch contacts and the wire rope as per EN60947-5-1. The switches are brought into the operational condition by pre-tensioning the rope by use of a tensioner device which clamps the rope and then hooks to the switch eyebolts. Correct tension can be observed by viewing the tension indicator on the switch housing. Once tensioned the switch contact blocks are set to the operational condition. i.e. Signal Contacts Closed - Auxiliary Contacts Open.

All of the switches have wire breakage monitoring. On pulling or breakage (loss of tension) of the rope, the normally closed Signal Contacts are opened and the Auxiliary Contacts are closed. The switches will be returned to the operational condition as soon as the rope returns to the set position.

Explosion Proof version:
Zones 1,2,21,22

DIMENSIONS:



Mechanical Features:	
Enclosure/Cover Material	Die-Cast (painted yellow) or Stainless Steel 316
IP Rating	IP69K
Rope Span	Up to 80m
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	3 x M20 or 3 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Mechanical Life	1,000,000 operations
Approx.Weight	1780g
Electrical Features:	
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 2NC + 1NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ATEX Classification (EX Versions)	Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db
Rated Voltage	250Vac
Rated Current	4Aac
Cable Length	3m pre-wired (EX versions)

SALES NUMBER	TYPE	CONDUIT	CONTACTS	FITTINGS
144498	GLS-SS-AR	3 x M20	2NC 1NO	
144499	GLS-SS-AR	3 x 1/2" NPT	2NC 1NO	
144496	GLS-SS-AR	EX	1NC 1NO	Pre-Wired 3m
144497	GLS-SS-AR	EX	2NC	Pre-Wired 3m

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 142498-GC

Guardian Line Heavy Duty **Type: GLHD**

FEATURES:

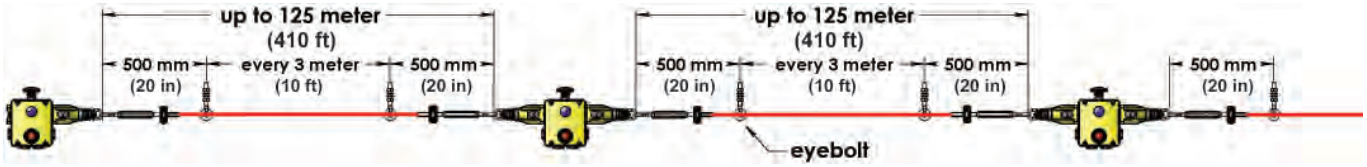
PROTECTION UP TO 250 METRES (820 FEET)

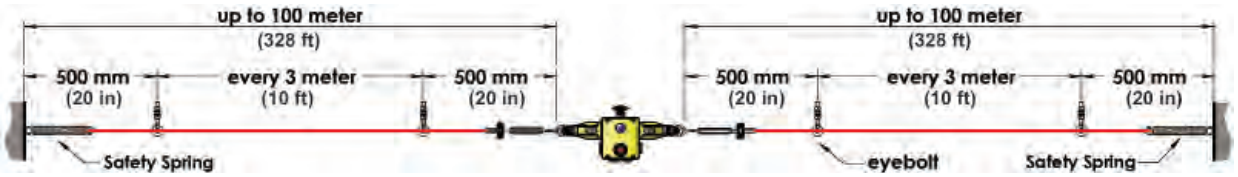
The GLHD is a Heavy Duty Safety Rope Pull Switch designed to protect long conveyor lengths. The die-cast housings are robust to survive indoor or outdoor use including washdown (IP67 rating). Lengths over 2 Km can be achieved with less than 20 switches.

A bi-colour LED ensures switch status can be seen easily from a distance. They have 4NC 2NO contacts to ensure flexibility with all modern control applications and optional Explosion Proof contact blocks are available.

Shorter rope spans up to 200m can be achieved by using just one switch therefore making a cost effective solution and also reducing electrical wiring runs.

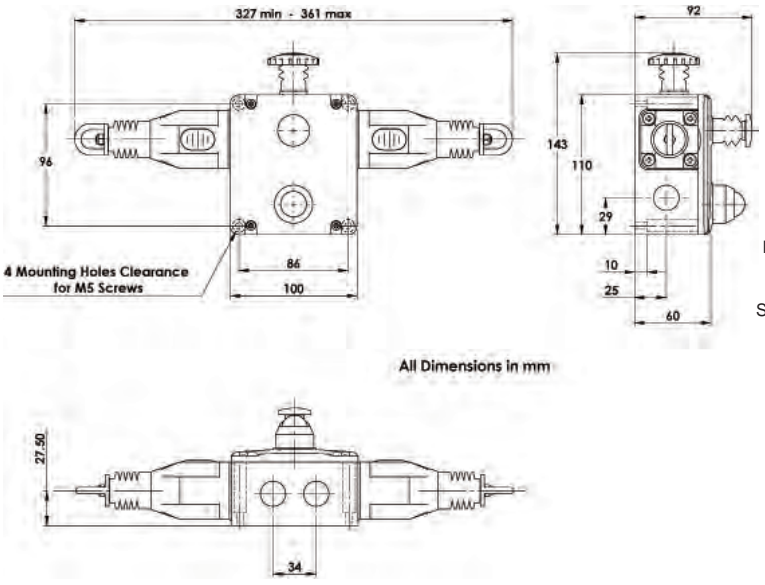
Low temperature version -40C available GLHD-FZ





It is important that the first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button. IDEM also recommend when using a Safety Spring that a maximum of one corner pulley is used.

DIMENSIONS:



Pre-wired EX versions (see Explosion Proof section)

SALES NUMBER	TYPE	CONDUIT	CONTACTS	FITTINGS
141001	GLHD	4 x M20	4NC 2NO	LED & E-Stop
141002	GLHD	4 x 1/2" NPT	4NC 2NO	LED & E-Stop
141029	GLHD	4 x M20	4NC 2NO	LED
141030	GLHD	4 x 1/2" NPT	4NC 2NO	LED
141039	GLHD	4 x M20	4NC 2NO	E-Stop
141040	GLHD	4 x 1/2" NPT	4NC 2NO	E-Stop
141041	GLHD	4 x M20	4NC 2NO	
141042	GLHD	4 x 1/2" NPT	4NC 2NO	
141012	GLH	Replacement Lid		
141013	GLH	Replacement Lid with LED		
For LED Models add voltage code to Sales Number see below				
Steady Green/Flashing Red A - 24Vdc B - 110Vac C - 230Vac				
Steady Green/Steady Red AS - 24Vdc BS - 110Vac CS - 230Vac				

Gold Plated Contacts available for low power circuits (5V 5mA). Add GC to Sales Number e.g. 141001-A-GC

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 214 years
Enclosure/Cover Material	Die-Cast (painted yellow)
IP Rating	IP67 (NEMA 6)
Rope Span	250m Dual Head
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	4 x M20 or 4 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Mechanical Life	1,000,000 operations
Weight	1350g approx.
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 4NC (positive break) 2NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15 A300
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Guardian Line Heavy Duty **Type: GLHL & GLHR**

FEATURES:

PROTECTION UP TO 125 METRES (410 FEET)

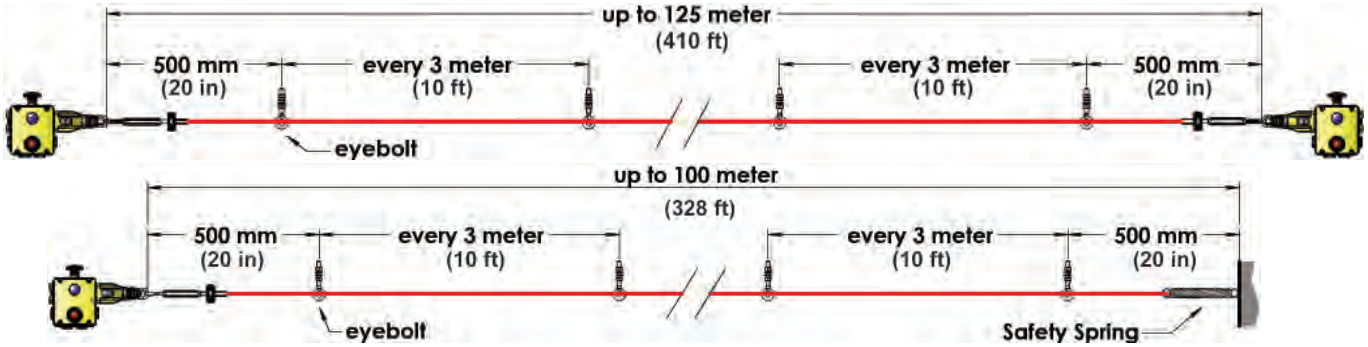
The GLHL/R is a robust die-cast Heavy Duty Safety Rope Pull Switch designed to protect long conveyor lengths where protection is required up to 125m using two switches or up to 100m using a single switch. The die-cast housings are robust to survive indoor or outdoor use.

A bi-colour LED ensures switch status can be seen easily from a distance. They have 4NC 2NO contacts to ensure flexibility with all modern control applications and optional Explosion Proof contact blocks are available.

They can be used to complement the GLHD versions at each end of the rope span.

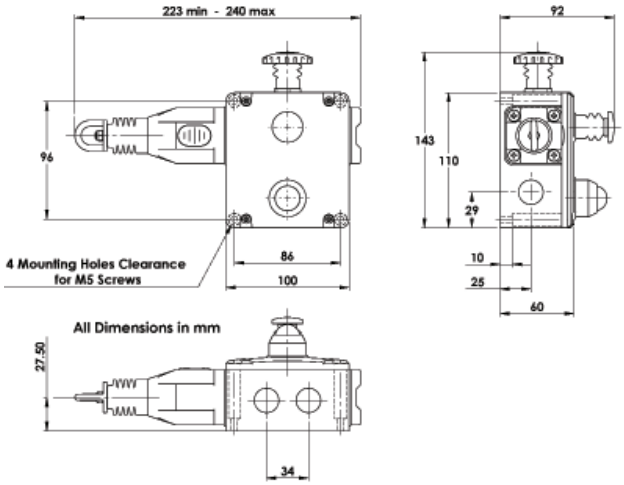
GLHL (Left Hand) GLHR (Right Hand)

Low temperature versions -40C available GLHL-FZ and GLHR-FZ



It is important that the first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button. IDEM also recommend when using a Safety Spring that a maximum of one corner pulley is used.

DIMENSIONS:



SALES NUMBER	TYPE	CONDUIT	CONTACTS	FITTINGS
141005	GLHL	4 x M20	4NC 2NO	LED & E-Stop
141006	GLHL	4 x 1/2" NPT	4NC 2NO	LED & E-Stop
141053	GLHL	4 x M20	4NC 2NO	LED
141055	GLHL	4 x 1/2" NPT	4NC 2NO	LED
141051	GLHL	4 x M20	4NC 2NO	E-Stop
141035	GLHL	4 x 1/2" NPT	4NC 2NO	E-Stop
141037	GLHL	4 x M20	4NC 2NO	
141057	GLHL	4 x 1/2" NPT	4NC 2NO	
141009	GLHR	4 x M20	4NC 2NO	LED & E-Stop
141010	GLHR	4 x 1/2" NPT	4NC 2NO	LED & E-Stop
141054	GLHR	4 x M20	4NC 2NO	LED
141056	GLHR	4 x 1/2" NPT	4NC 2NO	LED
141052	GLHR	4 x M20	4NC 2NO	E-Stop
141036	GLHR	4 x 1/2" NPT	4NC 2NO	E-Stop
141038	GLHR	4 x M20	4NC 2NO	
141058	GLHR	4 x 1/2" NPT	4NC 2NO	
141012	GLH	Replacement Lid		
141013	GLH	Replacement Lid with LED		
For LED Models add voltage code to Sales Number see below				
Steady Green/Flashing Red A - 24Vdc B - 110Vac C - 230Vac				
Steady Green/Steady Red AS - 24Vdc BS - 110Vac CS - 230Vac				

Gold Plated Contacts available for low power circuits (5V 5mA).
Add GC to Sales Number e.g. 141005-A-GC

Pre-wired EX versions (see Explosion Proof section)

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
PFHd	<1.0 x 10^{-7}
Proof Test Interval (Life)	21 years
MTTFd	214 years
Enclosure/Cover Material	Die-Cast (painted yellow)
IP Rating	IP67 (NEMA 6)
Rope Span	125m
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	4 x M20 or 4 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Weight	1030g approx.
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 4NC (positive break) 2NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15 A300
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Guardian Line Heavy Duty **Type: GLHD-SS (Stainless Steel)**

FEATURES:

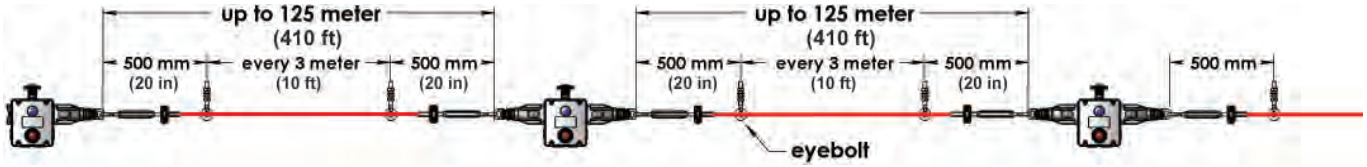
PROTECTION UP TO 250 METRES (820 FEET)

The GLHD-SS is a Heavy Duty Safety Rope Pull Switch designed to protect long conveyor lengths. The Stainless Steel 316 housings are designed specifically to withstand the tough environments found in the Food and Pharmaceutical industries. They will survive chemical and detergent washdown by providing all stainless steel parts and robust IP67 and IP69K sealing by using integral bellows and gaskets.

A bi-colour LED ensures switch status can be seen easily from a distance. They have 4NC 2NO contacts to ensure flexibility with all modern control applications and optional Explosion Proof contact blocks are available.

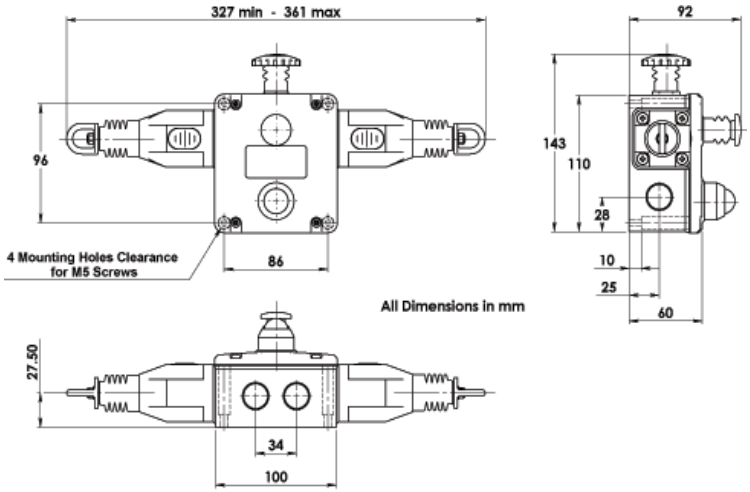
Shorter rope spans up to 200m can be achieved by using just one switch which makes a cost effective solution and also reducing electrical wiring runs.

Low temperature version -40C available GLHD-SS-FZ



It is important that the first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button. IDEM also recommend when using a Safety Spring that a maximum of one corner pulley is used.

DIMENSIONS:



S/STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

SALES NUMBER	TYPE	CONDUIT	CONTACTS	FITTINGS
145001	GLHD-SS	4 x M20	4NC 2NO	LED & E-Stop
145002	GLHD-SS	4 x 1/2" NPT	4NC 2NO	LED & E-Stop
145029	GLHD-SS	4 x M20	4NC 2NO	LED
145030	GLHD-SS	4 x 1/2" NPT	4NC 2NO	LED
145023	GLHD-SS	4 x M20	4NC 2NO	E-Stop
145024	GLHD-SS	4 x 1/2" NPT	4NC 2NO	E-Stop
145025	GLHD-SS	4 x M20	4NC 2NO	
145026	GLHD-SS	4 x 1/2" NPT	4NC 2NO	
145012	GLH-SS	Replacement Lid		
145013	GLH-SS	Replacement Lid with LED		
For LED Models add voltage code to Sales Number see below				
Steady Green/Flashing Red A - 24Vdc B - 110Vac C - 230Vac				
Steady Green/Steady Red AS - 24Vdc BS - 110Vac CS - 230Vac				

Gold Plated Contacts available for low power circuits (5V 5mA). Add GC to Sales Number e.g. 145001-A-GC

Pre-wired EX versions (see Explosion Proof section)

Standards: EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1

Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 214 years
Enclosure/Cover Material	Stainless Steel 316
External Parts	Stainless Steel
IP Rating	IP69K (NEMA PW12) IP67 (NEMA 6)
Rope Span	250m Dual Head
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	4 x M20 or 4 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C (Cleaning 100C)
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Weight	2850g approx.
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 4NC (positive break) 2NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15 A300
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Guardian Line Heavy Duty **Type: GLHL-SS & GLHR-SS**

FEATURES:

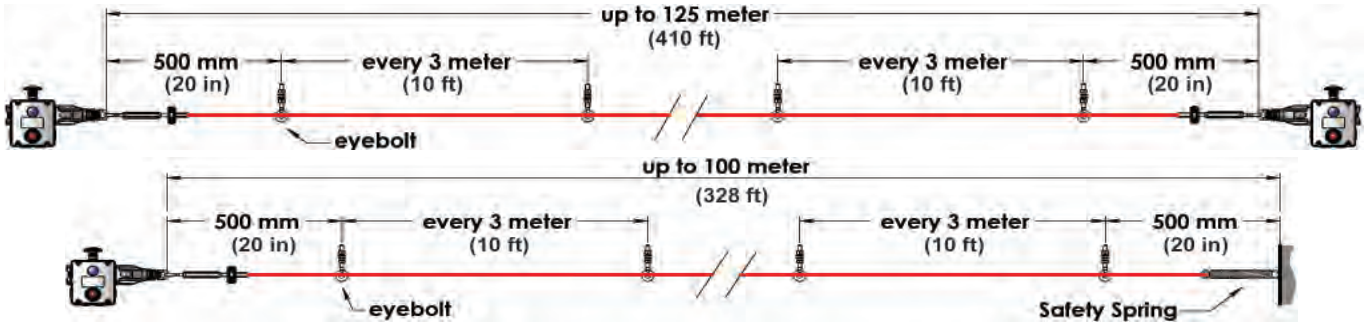
PROTECTION UP TO 125 METRES (410 FEET)

The GLHL/R-SS a robust Heavy Duty Safety Rope Pull Switch is designed to protect long conveyor lengths up to 125m (2 switches) or up to 100m using a single switch. The Stainless Steel 316 housings are designed specifically to withstand the tough environments found in the Food and Pharmaceutical industries. They will survive chemical and detergent washdown by providing all stainless steel parts and robust IP67 and IP69K sealing by using integral bellows and gaskets.

They can be used to complement the GLHD-SS (dual head) versions at each end of the rope span.

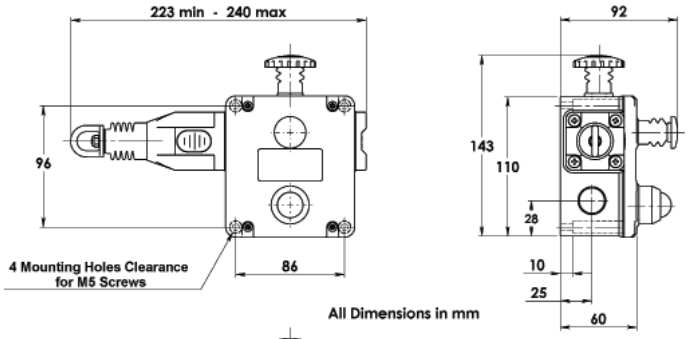
GLHL-SS (Left Hand) GLHR-SS (Right Hand)

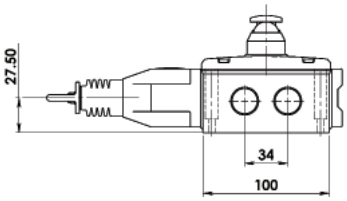
Low temperature version -40C available GLHL-SS-FZ & GLHR-SS-FZ



It is important that the first 500mm is not used as part of the active protection coverage. If protection is required in this first 500mm then it is recommended to use switches fitted with a mushroom type E-Stop button. IDEM also recommend when using a Safety Spring that a maximum of one corner pulley is used.

DIMENSIONS:





Pre-wired EX versions (see Explosion Proof section)

SALES NUMBER	TYPE	CONDUIT	CONTACTS	FITTINGS
145005	GLHL-SS	4 x M20	4NC 2NO	LED & E-Stop
145006	GLHL-SS	4 x 1/2" NPT	4NC 2NO	LED & E-Stop
145053	GLHL-SS	4 x M20	4NC 2NO	LED
145055	GLHL-SS	4 x 1/2" NPT	4NC 2NO	LED
145051	GLHL-SS	4 x M20	4NC 2NO	E-Stop
145035	GLHL-SS	4 x 1/2" NPT	4NC 2NO	E-Stop
145037	GLHL-SS	4 x M20	4NC 2NO	
145057	GLHL-SS	4 x 1/2" NPT	4NC 2NO	
145009	GLHR-SS	4 x M20	4NC 2NO	LED & E-Stop
145010	GLHR-SS	4 x 1/2" NPT	4NC 2NO	LED & E-Stop
145054	GLHR-SS	4 x M20	4NC 2NO	LED
145056	GLHR-SS	4 x 1/2" NPT	4NC 2NO	LED
145052	GLHR-SS	4 x M20	4NC 2NO	E-Stop
145036	GLHR-SS	4 x 1/2" NPT	4NC 2NO	E-Stop
145038	GLHR-SS	4 x M20	4NC 2NO	
145058	GLHR-SS	4 x 1/2" NPT	4NC 2NO	
145012	GLH-SS	Replacement Lid		
145013	GLH-SS	Replacement Lid with LED		
For LED Models add voltage code to Sales Number see below				
Steady Green/Flashing Red A - 24Vdc B - 110Vac C - 230Vac				
Steady Green/Steady Red AS - 24Vdc BS - 110Vac CS - 230Vac				

Gold Plated Contacts available for low power circuits (5V 5mA). Add GC to Sales Number e.g. 145005-A-GC

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
PFHd	<1.0 x 10^{-7}
Proof Test Interval (Life)	21 years
MTTFd	214 years
Enclosure/Cover Material	Stainless Steel 316
External Parts	Stainless Steel
IP Rating	IP69K (NEMA PW12) IP67 (NEMA 6)
Rope Span	125m
Rope Tension Device	IDEM Tensioner/Gripper (quick fixing)
Rope Type	4.00mm outside dia. Steel inner - PVC sheath
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	4 x M20 or 4 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C (Cleaning 100C)
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Tension Force (typical mid setting)	130N
Typical Operating Force (Rope pulled)	<125N <300mm deflection
Weight	2475g approx.
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 4NC (positive break) 2NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15 A300
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

S/STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

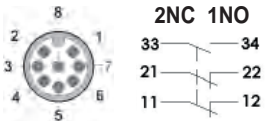
IDEM recommend using our Stainless Steel 316 Gland with this switch.

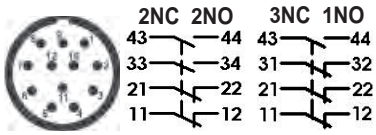
For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Safety Rope Pull Switches: **Quick Connect Versions**

QUICK CONNECT DETAILS FOR SWITCHES WITHOUT LED INDICATION:

GLM/GLS Models

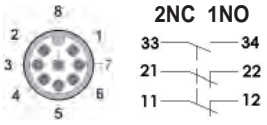


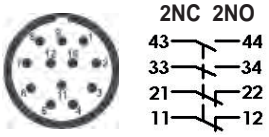


QUICK CONNECT (QC) M12 8 WAY MALE (ON FLYING LEAD 250mm (10")) PIN VIEW FROM SWITCH	GLM/GLS WITHOUT LED SWITCH CIRCUIT	QUICK CONNECT (QC) M23 12 WAY MALE (CONNECTOR LENGTH 26mm) PIN VIEW FROM SWITCH
8 5	11/12 NC	1 3
4 6	21/22 NC	4 6
1 7	31/32 NC or 33/34 NO	7 8
	43/44 NO	9 10
3	Earth	12

Sales Numbers		Sales Numbers		
GLM with E-Stop	143005-QCM12	GLM with E-Stop	3NC 1NO	143056-QCM23
GLM	143001-QCM12	GLM with E-Stop	2NC 2NO	143058-QCM23
		GLM	3NC 1NO	143050-QCM23
GLS with E-Stop	142009-QCM12	GLM	2NC 2NO	143052-QCM23
GLS	142001-QCM12			
		GLS with E-Stop	3NC 1NO	142062-QCM23
		GLS with E-Stop	2NC 2NO	142064-QCM23
		GLS	3NC 1NO	142050-QCM23
		GLS	2NC 2NO	142052-QCM23

GLHD/GLHL/GLHR Models



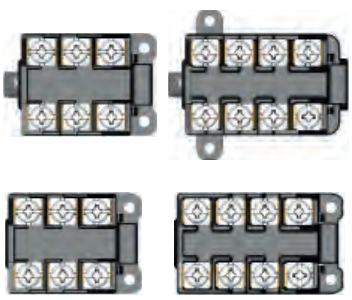


QUICK CONNECT (QC) M12 8 WAY MALE (ON FLYING LEAD 250mm (10")) PIN VIEW FROM SWITCH	GLHD OR GLHL/R WITHOUT LED SWITCH CIRCUIT	QUICK CONNECT (QC) M23 12 WAY MALE (CONNECTOR LENGTH 26mm) PIN VIEW FROM SWITCH
8 5	11/12 NC	1 3
4 6	21/22 NC	4 6
1 7	31/32 NC or 33/34 NO	7 8
	43/44 NO	9 10
3	Earth	12

Sales Numbers		Sales Numbers	
GLHD with E-Stop	141039-QCM12	GLHD with E-Stop	141039-QCM23
GLHL with E-Stop	141051-QCM12	GLHL with E-Stop	141051-QCM23
GLHR with E-Stop	141052-QCM12	GLHR with E-Stop	141052-QCM23
GLHD	141041-QCM12	GLHD	141041-QCM23
GLHL	141037-QCM12	GLHL	141037-QCM23
GLHR	141038-QCM12	GLHR	141038-QCM23

ACCESSORIES - CONTACT BLOCKS & FITTINGS:

SALES NUMBER	ROPE SWITCHES GLM, GLS, GLH & EMERGENCY STOP SWITCHES		
140057	3 Pole Contact Block	2NC 1NO	(End Fixing and Tip)
140058	3 Pole Contact Block	3NC	(End Fixing and Tip)
140061	4 Pole Contact Block	2NC 2NO	(Side Fixing and Tip)
140062	4 Pole Contact Block	3NC 1NO	(Side Fixing and Tip)
140063	4 Pole Contact Block	4NC	(Side Fixing and Tip)
SALES NUMBER	**TONGUE AND HINGE SWITCHES - IDIS, K-15, KP, K-SS, KM, KM-SS, HLM**		
140112	3 Pole Contact Block	2NC 1NO	(End Fixing without Tip)
140113	3 Pole Contact Block	3NC	(End Fixing without Tip)
140114	4 Pole Contact Block	2NC 2NO	(End Fixing without Tip)
140115	4 Pole Contact Block	3NC 1NO	(End Fixing without Tip)
140116	4 Pole Contact Block	4NC	(End Fixing without Tip)



For all IDEM Rope Switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

SALES NUMBER	GLANDS AND PLUGS PLASTIC	STAINLES STEEL 316	SALES NUMBER
140050	M20 to 1/2" NPT Adaptor	M12 x 1.75 Conduit Plug	140122
140051	1/2" NPT Conduit Plug	1/2" NPT Conduit Plug	140117
140052	M20 x 1.5 Conduit Plug	M20 x 1.5 Conduit Plug	140118
140053	1/2" NPT Gland	1/2" NPT Gland	140121
140054	M20 x 1.5 Gland	M20 x 1.5 Gland	140120
140056	M12 x 1.5 Gland	M12 x 1.5 Gland	140119

FEMALE QC LEADS

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (16ft)	140101
M12 8 Way	10m (32ft)	140102
M23 12 Way	5m (16ft)	140143
M23 12 Way	10m (32ft)	140144

Guardian Line Rope Switches: **Accessories**

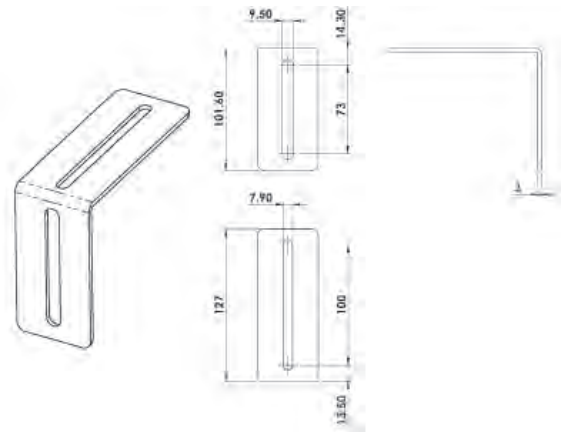
SALES NUMBER GALVANISED	SALES NUMBER STAINLESS STEEL	DESCRIPTION	ROPE	EYEBOLTS 84mm LONG	TENSIONER/ GRIPPER	ALLEN KEY
140001	140010	5M Rope Kit	5M QL	3	1	1
140002	140011	10M Rope Kit	10M QL	5	1	1
140003	140012	15M Rope Kit	15M QL	7	1	1
140004	140013	20M Rope Kit	20M QL	9	1	1
140005	140014	30M Rope Kit	30M QL	12	1	1
140006	140015	50M Rope Kit	50M QL	20	1	1
140007	140016	80M Rope Kit	80M	30	2	2
140008	140017	100M Rope Kit	100M	37	2	2
140009	140018	126M Rope Kit	126M	45	2	2
140033		Rope only 5M				
140034		Rope only 10M				
140036		Rope only 20M				
140037		Rope only 30M				
140038		Rope only 50M				
140039		Rope only 80M				
140040		Rope only 100M				
140041		Rope only 126M				
140068		Rope only 500M Drum				
140019		Rope Tensioner/Gripper Stainless Steel				
140020		Rope Tensioner/Gripper Galvanised Steel				
140021		77mm Long 40mm High Fixing Hole Centres 20mm Universal Pulley (for Inside and Outside Corners) Stainless Steel				
140064		Universal Pulley (for Inside and Outside Corners) Galvanised				
140045		Eyebolt Stainless Steel (8 Pack) 84mm Long Thread Length 51mm M8 x 1.25				
140046		Eyebolt Galvanised (8 Pack) 84mm Long Thread Length 51mm M8 x 1.25				
140126		Eyebolt Stainless Steel (8 Pack) 130mm Long Thread Length 85mm M8 x 1.25				
140127		Eyebolt Galvanised (8 Pack) 130mm Long Thread Length 85mm M8 x 1.25				
140047-Long		Pigtail Eyebolt Stainless Steel (8 Pack) 154mm Long Thread Length 66mm M10 x 1.5				
140047-Short		Pigtail Eyebolt Stainless Steel (8 Pack) 114mm Long Thread Length 46mm M10 x 1.5				
140048		Flexible Roller Eyebolt with Adjustment				
140099		Flexible Roller Eyebolt with Nuts - no adjustment				
Standard Bezel	S/Steel Bezel					
140042-A	140042-A-SS	LED Green/Flashing Red 24Vdc				
140042-B	140042-B-SS	LED Green/Flashing Red 110-120Vac				
140042-C	140042-C-SS	LED Green/Flashing Red 230Vac				
140132-AS	140132-AS-SS	LED Steady Green/Steady Red 24Vdc				
140132-BS	140132-BS-SS	LED Steady Green/Steady Red 110-120Vac				
140132-CS	140132-CS-SS	LED Steady Green/Steady Red 230Vac				
140043		220mm Long Safety Spring Stainless Steel				
140140		E-Stop Mechanism Stainless Steel				
140044		E-Stop Mechanism				
140059		Screwdriver Anti-Tamper T20				

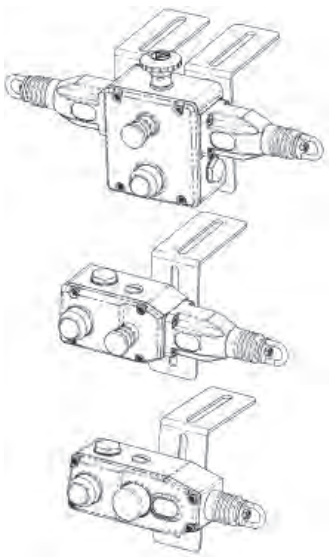
NOTE: Rope Kits eyebolts 84mm long.

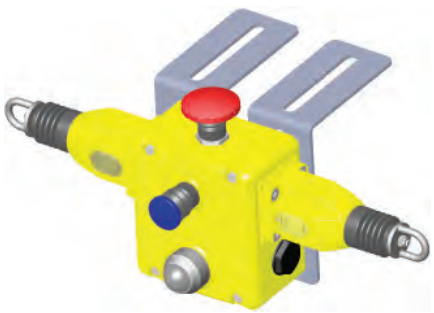
Tensioner/Gripper Assembly
Allen Key 4mm
Quick Link (QL)
For up to 50m spans - 1 rope end is terminated with a thimble and permanent clamp.
For over 50m spans - 2 Tensioner/Gripper Assemblies are supplied (no Quick Link).

Screwdriver Anti-Tamper T20

ACCESSORIES - MOUNTING BRACKET STAINLESS STEEL:







MOUNTING BRACKET FOR ROPE SWITCHES ALL VARIATIONS	SALES NUMBER
Stainless Steel	140165

Python Line Series - Conveyor Belt Alignment Switches

OPTIONS:

Housings:
Die-cast painted yellow, or Stainless Steel 316.

Roller Options:
35 x 120mm Short Roller
35 x 230mm Long Roller
50 x 170mm Medium Roller

MINIATURE BELT ALIGNMENT SWITCHES
Please see P214-215 HLM-CBA Types.
Housings: Die-cast painted red or S/Steel 316.

APPLICATION:

Conveyor Belt Alignment switches are mounted on sections of plant conveyors to protect against excessive belt drift due to an unintentional movement. They can be fitted at appropriate points along the conveyor length to ensure that should the belt position drift, the roller arm of the switch will move to a pre-determined position and cause activation of a control circuit.
All switches conform to European Standard IEC 60947-5-1 and provide positively operated contacts at the point of tripping. They can be used to satisfy the requirements of EN 620 with regard to conveyor control hazards caused by shifting of the belt position during running.
They are available in different roller diameters to provide heavy duty performance and long life.

OPERATION:

The steel roller of the switch is placed near to the running edge of the conveyor belt such that deflection of the roller and arm will cause activation "tripping" of the internal contacts of the switch. Adjustment of the tripping angles and necessary activation torque is provided by the switch.

INSTALLATION GUIDE:

1. Installation of all switch systems must be in accordance with a risk assessment for the individual application.
   Installation must only be carried out by competent personnel and in accordance with these instructions.
2. M5 mounting bolts must be used to fix the switches. Tightening torque for mounting bolts to ensure reliable fixing is 4 Nm.
   Tightening torque for the lid screws, conduit entry plugs and cable glands must be 1.5 Nm to ensure IP seal. Only use the correct size gland for the conduit entry and cable outside diameter.
3. The position of the roller must be chosen to ensure that in normal use the belt does not touch the roller, but that should the belt move beyond its normal guides it will make contact with the roller. After selecting the correct mounting position, the switching points of the internal contact blocks can be finely adjusted via internal cams.

There are 2 internal contact blocks one to provide a "STOP" signal the other to provide a "WARNING" signal. The blocks offer NC and NO circuits.

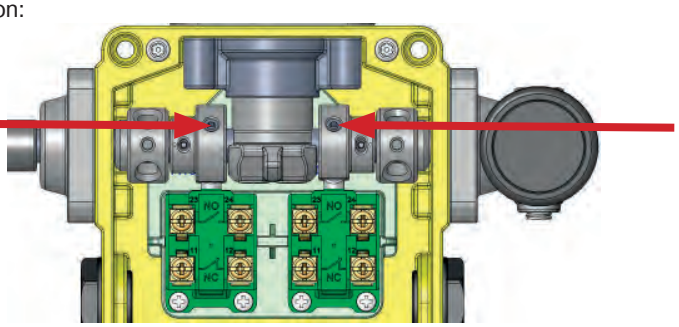
Final Adjustment of contact block action:

WARNING SIGNAL

Contact block 1
Adjustment cam.

Allen screw (2.5mm)
Tightening Torque 2Nm

Factory setting 14 degrees
(Adjustable 10 to 18 degrees)



BLOCK 1 **BLOCK 2**

STOP SIGNAL

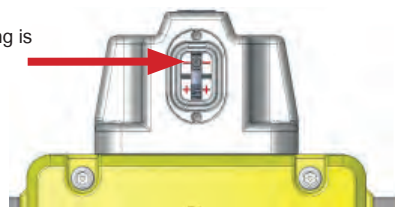
Contact block 2
Adjustment cam.

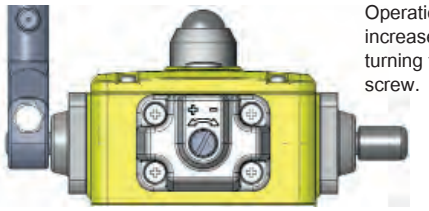
Allen screw (2.5mm)
Tightening Torque 2Nm

Factory setting 25 degrees.
(Adjustable 15 to 35 degrees)

4. The operational torque can be adjusted to cope with belt sensitivity or mounting angle.

Factory setting is low setting





Operational torque can be increased or decreased by turning the adjustment screw.

Python Line Series - Conveyor Belt Alignment Switches

MAINTENANCE:

Every month:
Check correct operation at all switch locations along all coverage length. Check for nominal warning and trip angle, re-set if necessary.

Every 6 months:
Isolate power and remove cover. Check screw terminal tightness and check for signs of moisture ingress. Never attempt to repair any switch.

CONTACT OPERATION/DEFLECTION OF ROLLER:

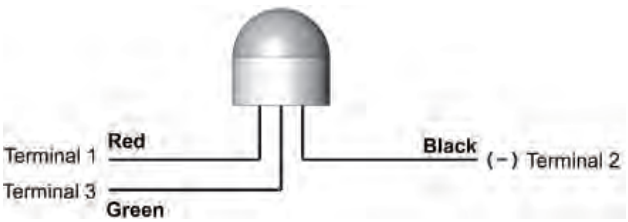
			0 Degrees	14 Degrees WARNING	25 Degrees STOP	65 Degrees
		1NC 1NO				
WARNING SIGNAL Contact Block 1	NC	11/12				
	NO	23/24				
STOP SIGNAL Contact Block 2	NC	11/12				
	NO	23/24				

CONTACTS OPEN
CONTACTS CLOSED

Direction of roller

WIRING EXAMPLES (Standard Versions):

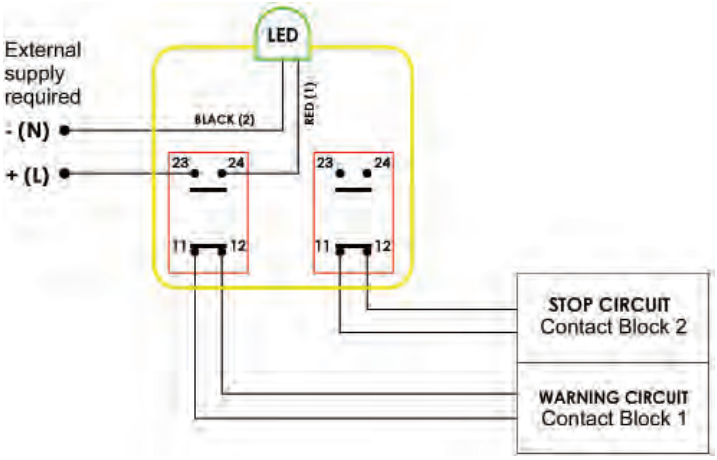
LED Steady Green or Flashing Red (Bi-colour)



When power is applied to the Red wire, the lamp will illuminate Red and Flash.

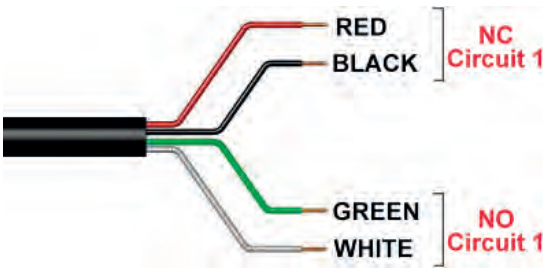
When power is applied to the Green Wire, the Lamp will illuminate Green.

Black is 0V.dc or Neutral for 110Vac and 230Vac versions.



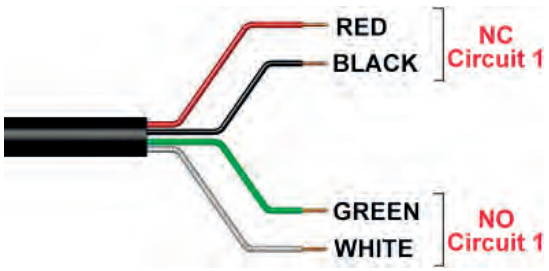
WIRING COLOURS (EX Versions):

WARNING SIGNAL Contact Block 1



Pre-wired EX versions (see Part Numbers)

STOP SIGNAL Contact Block 2



Standards: IEC 60947-5-1 EN 620

Mechanical Features:

Enclosure/Cover	Die-Cast (Painted Yellow) or Stainless Steel 316
External Parts	Stainless Steel
IP Rating	IP67
Mounting	4 x M5
Mounting position	Any
Conduit entries	4 x M20 or 4 x ½ " NPT by part number
Torque settings	Mounting M5 4.0 Nm Lid T20 Torx M4 1.5 Nm Terminals 1.0 Nm
Ambient Temperature	--25C. 80 C.
Vibration resistance	10-500Hz 0.35mm
Shock resistance	15g 11ms
Mechanical Reliability	150,000 operations at 100mA load
Switching range	WARNING signal 10 to 18 degrees STOP signal 15 to 35 degrees
Operating Torque range (adjustable)	Medium Duty 1.8Nm to 2.8Nm Heavy Duty 3.0Nm to 5.0Nm
Maximum tilt angle (mounting angle)	30 degrees
Maximum Deflection	65 degrees

Electrical Features:

Safety Contact type	IEC 60947-5-1 Double break Type Zb
Contact Material	Silver
Termination	Clamp up to 2.5 sq. mm conductors
Rating	Utilisation Category : AC15
Operational Rating	AC15 A300 240V. 3A. / 120V. 6A. ac 24V. 2.5A dc
Thermal Current (Ith)	10A.
Rated Insulation Voltage (Ui)	500V.
Withstand Voltage (Uimp)	2500V.
Short Circuit Overload Protection	Fuse Externally 10A. (FF)

Optional Explosion Proof Contact Blocks:

ATEX Zones	1,21,2,22
Classification	Ex d IIC T6 (-20C Ta 60C) Gb Ex tb IIIC T85C (-20C Ta 60C) Db
Rated Voltage	250V ac/dc
Rated Current	2 pole 4A.

Python Line Series - Conveyor Belt Alignment Switches

MEDIUM DUTY - DIE-CAST BELT SWITCH 35mm x 120mm ROLLER ORDERING:

SALES NUMBER	DESCRIPTION	MEDIUM DUTY BELT ALIGNMENT SWITCH		
	ALL VERSIONS ARE 2NC 2NO	Operating Torque	WARNING	STOP
500001	Belt Switch 35 x 120mm Roller M20			
500002	Belt Switch 35 x 120mm Roller 1/2" NPT			
500003A	Belt Switch 35 x 120mm Roller M20 24V LED	1.8Nm to 2.8Nm	10-18 degrees	15-35 degrees
500003B	Belt Switch 35 x 120mm Roller M20 110V LED			
500003C	Belt Switch 35 x 120mm Roller M20 230V LED	(Factory set to 1.8Nm)	(Factory set at 14 degrees)	(Factory set at 25 degrees)
500004A	Belt Switch 35 x 120mm Roller 1/2" NPT 24V LED			
500004B	Belt Switch 35 x 120mm Roller 1/2" NPT 110V LED			
500004C	Belt Switch 35 x 120mm Roller 1/2" NPT 230V LED			
500021	Belt Switch 35 x 120mm Roller **EX** 3m pre-wired			

HEAVY DUTY - DIE-CAST BELT SWITCH 35mm x 230mm ROLLER ORDERING:

SALES NUMBER	DESCRIPTION	MEDIUM DUTY BELT ALIGNMENT SWITCH		
	ALL VERSIONS ARE 2NC 2NO	Operating Torque	WARNING	STOP
500005	Belt Switch 35 x 230mm Roller M20			
500006	Belt Switch 35 x 230mm Roller 1/2" NPT			
500007A	Belt Switch 35 x 230mm Roller M20 24V LED	3.0Nm to 5.0Nm	10-18 degrees	15-35 degrees
500007B	Belt Switch 35 x 230mm Roller M20 110V LED			
500007C	Belt Switch 35 x 230mm Roller M20 230V LED	(Factory set to 3.0Nm)	(Factory set at 14 degrees)	(Factory set at 25 degrees)
500008A	Belt Switch 35 x 230mm Roller 1/2" NPT 24V LED			
500008B	Belt Switch 35 x 230mm Roller 1/2" NPT 110V LED			
500008C	Belt Switch 35 x 230mm Roller 1/2" NPT 230V LED			
500051	Belt Switch 35 x 230mm Roller **EX** 3m pre-wired			

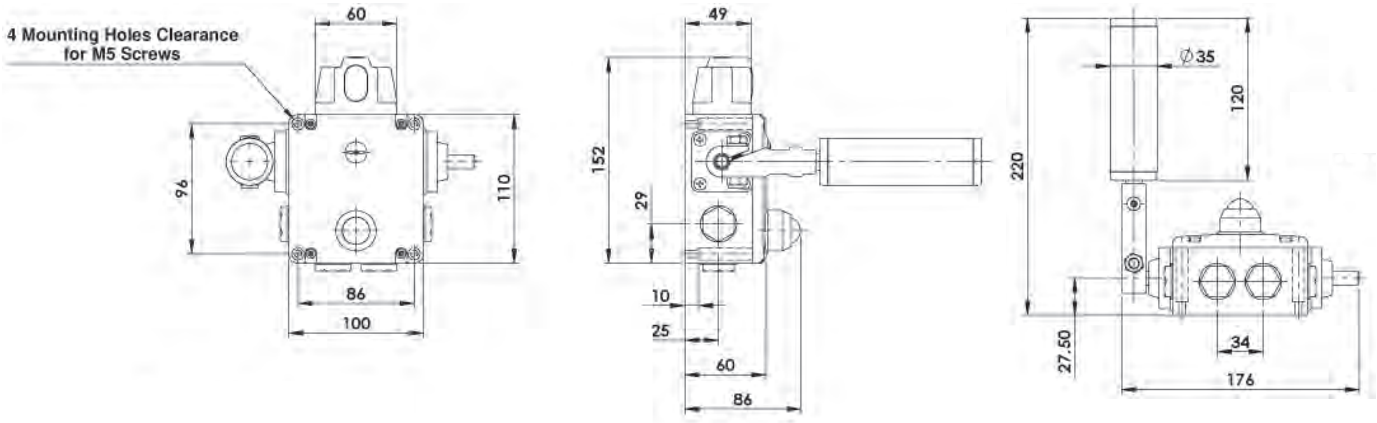
HEAVY DUTY - DIE-CAST BELT SWITCH 50mm x 170mm ROLLER ORDERING:

SALES NUMBER	DESCRIPTION	MEDIUM DUTY BELT ALIGNMENT SWITCH		
	ALL VERSIONS ARE 2NC 2NO	Operating Torque	WARNING	STOP
500009	Belt Switch 50 x 170mm Roller M20			
500010	Belt Switch 50 x 170mm Roller 1/2" NPT			
500011A	Belt Switch 50 x 170mm Roller M20 24V LED	3.0Nm to 5.0Nm	10-18 degrees	15-35 degrees
500011B	Belt Switch 50 x 170mm Roller M20 110V LED			
500011C	Belt Switch 50 x 170mm Roller M20 230V LED	(Factory set to 3.0Nm)	(Factory set at 14 degrees)	(Factory set at 25 degrees)
500012A	Belt Switch 50 x 170mm Roller 1/2" NPT 24V LED			
500012B	Belt Switch 50 x 170mm Roller 1/2" NPT 110V LED			
500012C	Belt Switch 50 x 170mm Roller 1/2" NPT 230V LED			
500091	Belt Switch 50 x 170mm Roller **EX** 3m pre-wired			

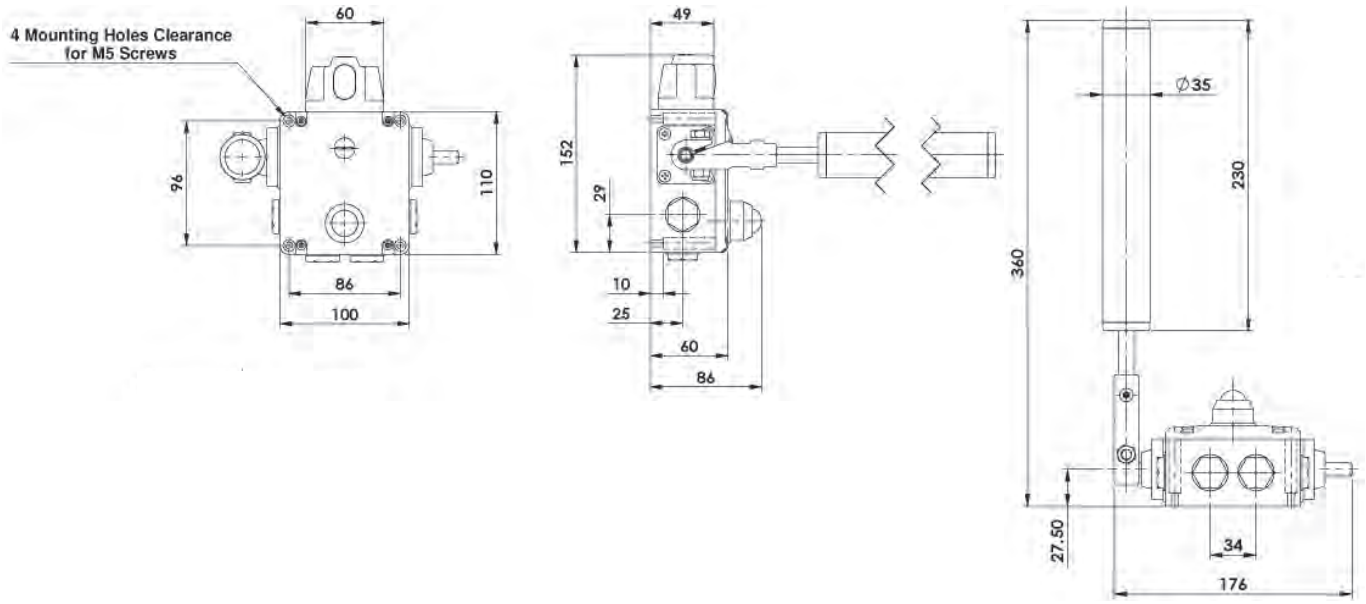
For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Python Line Series - Conveyor Belt Alignment Switches

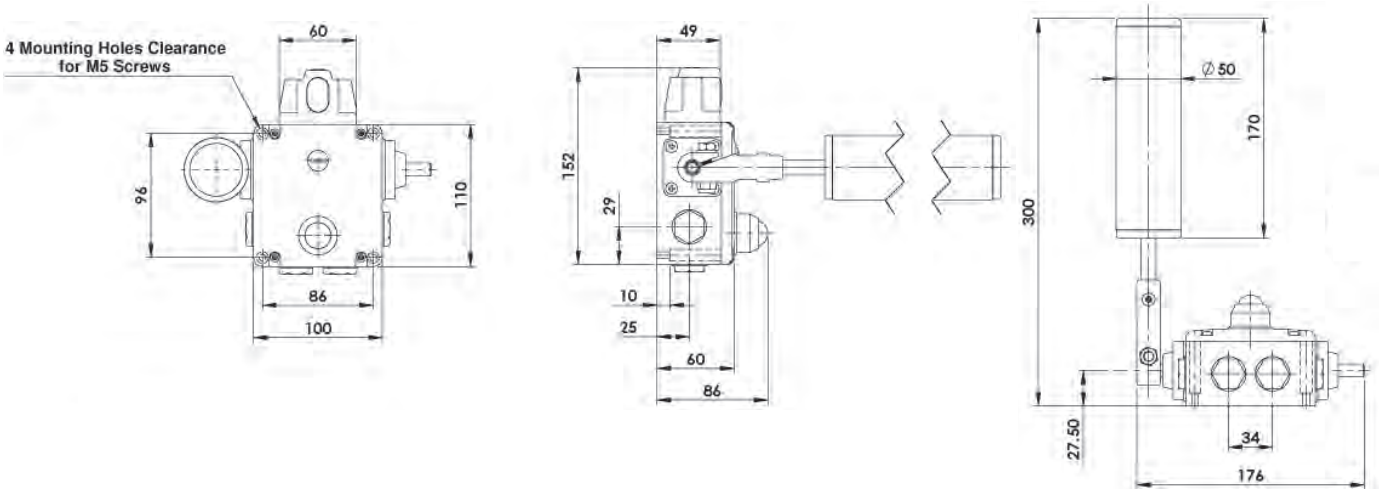
MEDIUM DUTY - DIE-CAST BELT SWITCH 35mm x 120mm DIMENSIONS (mm):



HEAVY DUTY - DIE-CAST BELT SWITCH 35mm x 230mm DIMENSIONS (mm):



HEAVY DUTY - DIE-CAST BELT SWITCH 50mm x 170mm DIMENSIONS (mm):



For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Python Line Series - Conveyor Belt Alignment Switches

MEDIUM DUTY - STAINLESS STEEL BELT SWITCH 35mm x 120mm ROLLER ORDERING:

SALES NUMBER	DESCRIPTION	MEDIUM DUTY BELT ALIGNMENT SWITCH		
	ALL VERSIONS ARE 2NC 2NO	Operating Torque	WARNING	STOP
501001	Belt Switch 35 x 120mm Roller M20			
501002	Belt Switch 35 x 120mm Roller 1/2" NPT			
501003A	Belt Switch 35 x 120mm Roller M20 24V LED	1.8Nm to 2.8Nm	10-18 degrees	15-35 degrees
501003B	Belt Switch 35 x 120mm Roller M20 110V LED			
501003C	Belt Switch 35 x 120mm Roller M20 230V LED	(Factory set to 1.8Nm)	(Factory set at 14 degrees)	(Factory set at 25 degrees)
501004A	Belt Switch 35 x 120mm Roller 1/2" NPT 24V LED			
501004B	Belt Switch 35 x 120mm Roller 1/2" NPT 110V LED			
501004C	Belt Switch 35 x 120mm Roller 1/2" NPT 230V LED			
501021	Belt Switch 35 x 120mm Roller **EX** 3m pre-wired			

HEAVY DUTY - STAINLESS STEEL BELT SWITCH 35mm x 230mm ROLLER ORDERING:

SALES NUMBER	DESCRIPTION	MEDIUM DUTY BELT ALIGNMENT SWITCH		
	ALL VERSIONS ARE 2NC 2NO	Operating Torque	WARNING	STOP
501005	Belt Switch 35 x 230mm Roller M20			
501006	Belt Switch 35 x 230mm Roller 1/2" NPT			
501007A	Belt Switch 35 x 230mm Roller M20 24V LED	3.0Nm to 5.0Nm	10-18 degrees	15-35 degrees
501007B	Belt Switch 35 x 230mm Roller M20 110V LED			
501007C	Belt Switch 35 x 230mm Roller M20 230V LED	(Factory set to 3.0Nm)	(Factory set at 14 degrees)	(Factory set at 25 degrees)
501008A	Belt Switch 35 x 230mm Roller 1/2" NPT 24V LED			
501008B	Belt Switch 35 x 230mm Roller 1/2" NPT 110V LED			
501008C	Belt Switch 35 x 230mm Roller 1/2" NPT 230V LED			
501051	Belt Switch 35 x 230mm Roller **EX** 3m pre-wired			

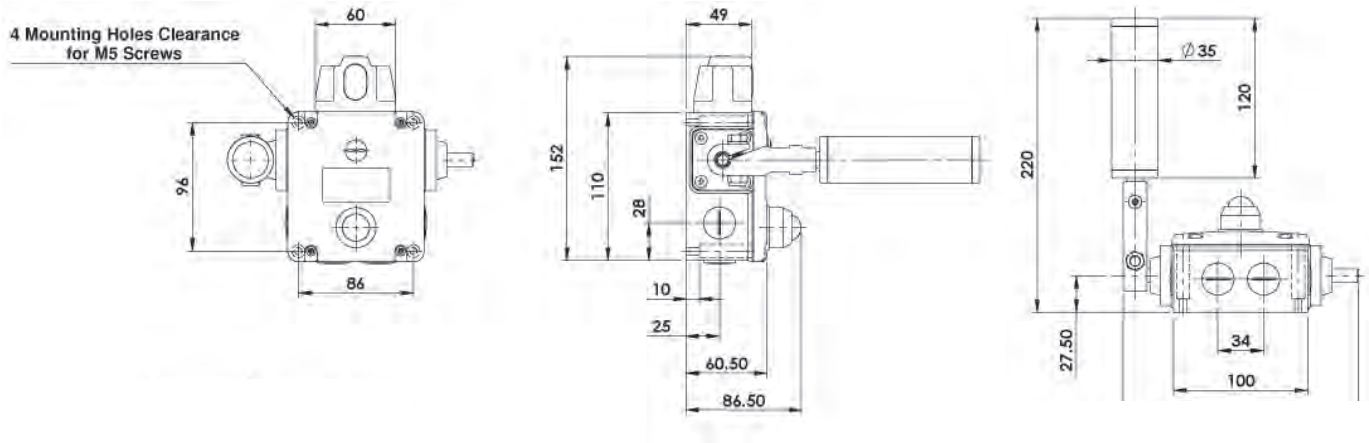
HEAVY DUTY - STAINLESS STEEL BELT SWITCH 50mm x 170mm ROLLER ORDERING:

SALES NUMBER	DESCRIPTION	MEDIUM DUTY BELT ALIGNMENT SWITCH		
	ALL VERSIONS ARE 2NC 2NO	Operating Torque	WARNING	STOP
501009	Belt Switch 50 x 170mm Roller M20			
501010	Belt Switch 50 x 170mm Roller 1/2" NPT			
501011A	Belt Switch 50 x 170mm Roller M20 24V LED	3.0Nm to 5.0Nm	10-18 degrees	15-35 degrees
501011B	Belt Switch 50 x 170mm Roller M20 110V LED			
501011C	Belt Switch 50 x 170mm Roller M20 230V LED	(Factory set to 3.0Nm)	(Factory set at 14 degrees)	(Factory set at 25 degrees)
501012A	Belt Switch 50 x 170mm Roller 1/2" NPT 24V LED			
501012B	Belt Switch 50 x 170mm Roller 1/2" NPT 110V LED			
501012C	Belt Switch 50 x 170mm Roller 1/2" NPT 230V LED			
501091	Belt Switch 50 x 170mm Roller **EX** 3m pre-wired			

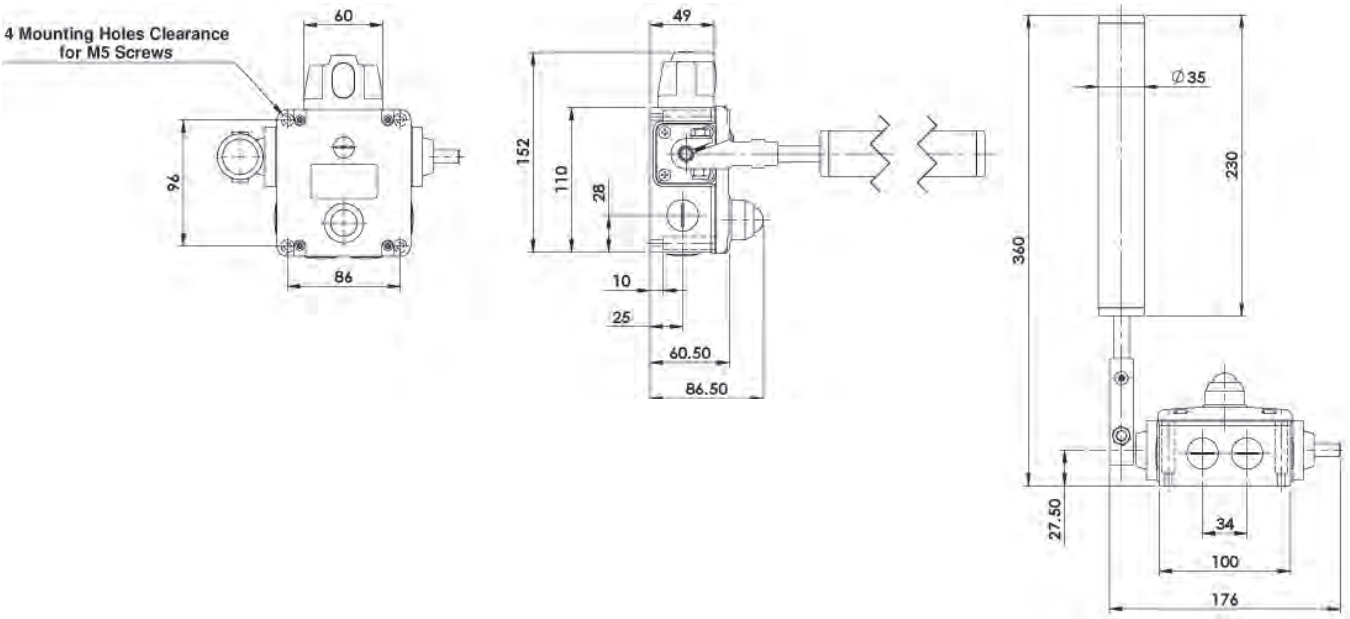
For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Python Line Series - Conveyor Belt Alignment Switches

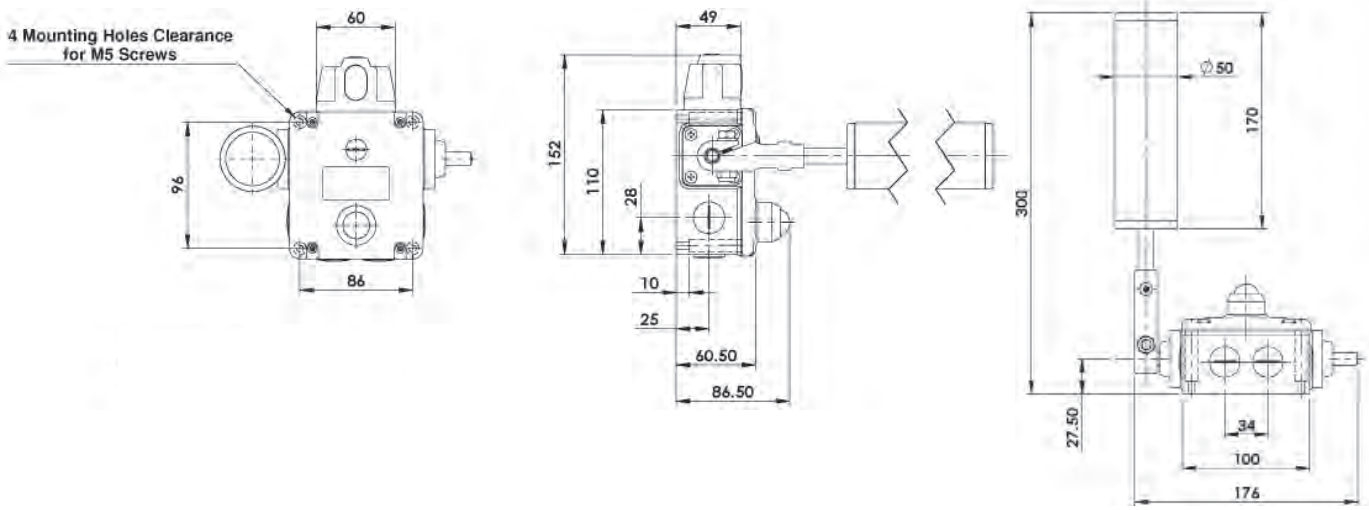
MEDIUM DUTY - STAINLESS STEEL BELT SWITCH 35mm x 120mm DIMENSIONS (mm):



HEAVY DUTY - STAINLESS STEEL BELT SWITCH 35mm x 230mm DIMENSIONS (mm):



HEAVY DUTY - STAINLESS STEEL BELT SWITCH 50mm x 170mm DIMENSIONS (mm):



For all IDEM switches the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Mini Belt Alignment Switches **TYPE: HLM-CBA**

APPLICATIONS:

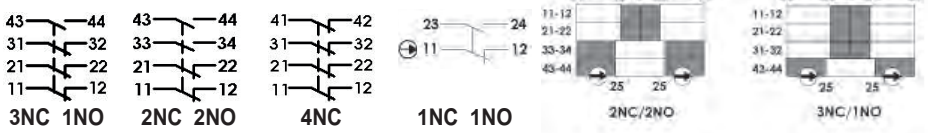
IDEM's HLM-CBA mini conveyor belt alignment switches come with either plastic roller or stainless steel roller.
They are available with either slow break or snap action contacts.

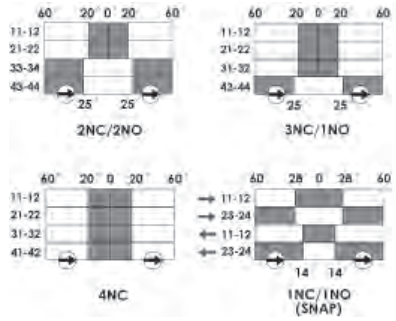
FEATURES:

- Heavy duty die cast bodies (painted red)
- Positive opening NC safety contact to EN60947-5-1
- High mechanical life over 500,000 cycles
- Industry standard mounting to EN50041
- Choice of Stainless Steel or Plastic Roller

CONTACT BLOCKS:

Contact blocks provide positively operated safety contacts to EN60947-5-1 with optional Explosion Proof versions available.





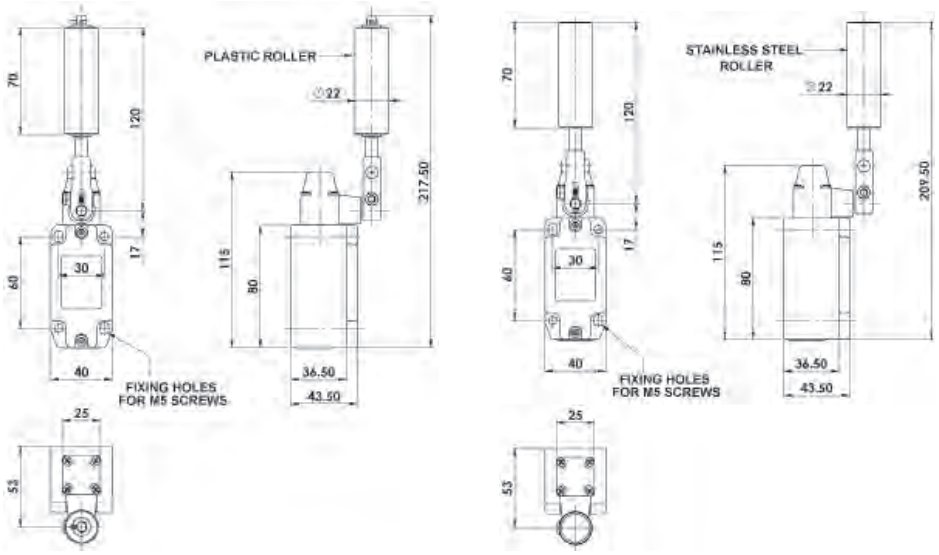
EX CLASSIFICATION:

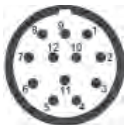
EXPLOSION PROOF MODELS ALSO AVAILABLE.
SEE MODELS/PART NUMBERS MARKED WITH EX

HLM-CBA-P
Plastic Roller

HLM-CBA-S
S/Steel Roller

DIMENSIONS:





Quick Connect (QC) M23 12 Way Male (connector length 26mm) (pin view from switch)	Switch Circuit
1 3	11/12
4 6	21/22
7 8	33/34 or 31/32
9 10	41/42 or 43/44
12	Earth

ORDERING:

HLM-CBA-P with PLASTIC ROLLER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174401	174402	174403
3NC 1NO	174404	174405	174406
4NC	174407	174408	174409
1NC 1NO Snap	174410	174411	174412
1NC 1NO **EX**	174413	3m 4 core Ex	
2NC **EX**	174414	3m 4 core Ex	
2NC 2NO **EX**	174415	3m 8 core Ex	

HLM-CBA-S with STAINLESS STEEL ROLLER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174451	174452	174453
3NC 1NO	174454	174455	174456
4NC	174457	174458	174459
1NC 1NO Snap	174460	174461	174462
1NC 1NO **EX**	174463	3m 4 core Ex	
2NC **EX**	174464	3m 4 core Ex	
2NC 2NO **EX**	174465	3m 8 core Ex	

TECHNICAL SPECIFICATIONS:

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	500,000 operations at 100mA load
Positive Opening Operation	NC contacts
Utilisation Category	AC15 A300 240V 3A
Minimum Current	5V 5mA dc
Thermal Current (Ith)	10A
Rated Insulation Voltage	300Vac
Rated Impulse Withstand	2500Vac
Maximum Switching Speed	250mm/sec
Housing Material	Die Cast
Roller Material:	Stainless Steel or Plastic
Enclosure Protection	IP67
Operating Temperature	-25C to +80C
Electrical Life Expectancy	100,000 cycle min (at full load)
Vibration	IEC68-2-6 10-55Hz 0.35mm
Conductor Size	1.5mm^2
Fixing	M5 bolts
Operating Torque	1.10Nm Plastic Roller 1.40Nm Stainless Steel Roller

Mini Belt Alignment Switches **TYPE: HLM-SS-CBA**

APPLICATIONS:

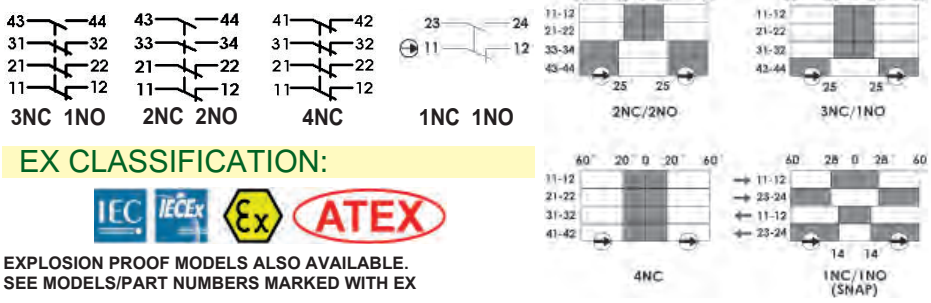
IDEM's HLM-SS-CBA mini conveyor belt alignment switches are manufactured in Stainless Steel 316 and come with either plastic roller or stainless steel roller.
They are available with either slow break or snap action contacts.

FEATURES:

- Fully Stainless Steel 316 housing
- Positive opening NC safety contact to EN60947-5-1
- High mechanical life over 500,000 cycles
- Industry standard mounting to EN50041
- Choice of Stainless Steel or Plastic Roller

CONTACT BLOCKS:

Contact blocks provide positively operated safety contacts to EN60947-5-1 with optional Explosion Proof versions available.



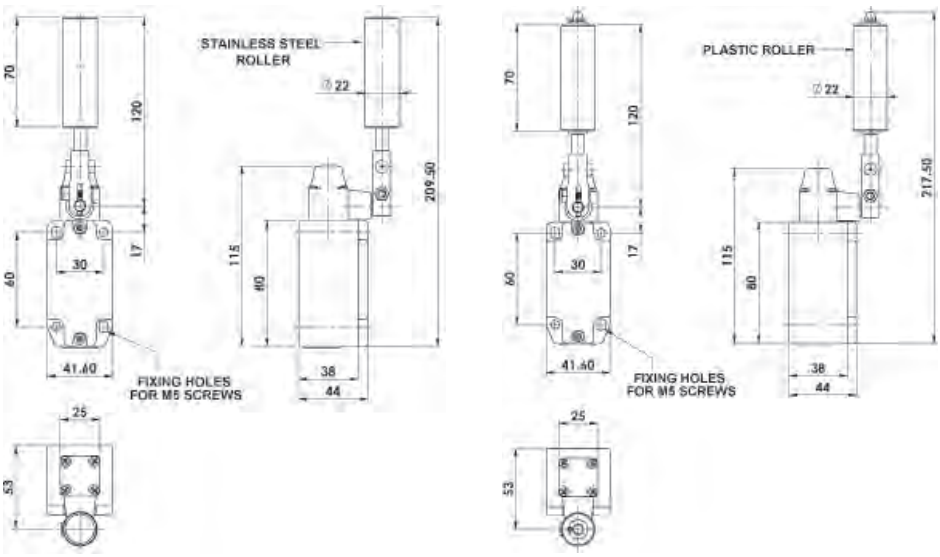
EX CLASSIFICATION:

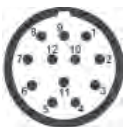
EXPLOSION PROOF MODELS ALSO AVAILABLE.
SEE MODELS/PART NUMBERS MARKED WITH EX

HLM-SS-CBA-P
Plastic Roller

HLM-SS-CBA-S
S/Steel Roller

DIMENSIONS:





Quick Connect (QC) M23 12 Way Male (connector length 26mm) (pin view from switch)	Switch Circuit
1 3	11/12
4 6	21/22
7 8	33/34 or 31/32
9 10	41/42 or 43/44
12	Earth

ORDERING:

HLM-SS-CBA-P with PLASTIC ROLLER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175401	175402	175403
3NC 1NO	175404	175405	175406
4NC	175407	175408	175409
1NC 1NO Snap	175410	175411	175412
1NC 1NO **EX**	175413	3m 4 core Ex	
2NC **EX**	175414	3m 4 core Ex	
2NC 2NO **EX**	175415	3m 8 core Ex	

HLM-SS-CBA-S with STAINLESS STEEL ROLLER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175451	175452	175453
3NC 1NO	175454	175455	175456
4NC	175457	175458	175459
1NC 1NO Snap	175460	175461	175462
1NC 1NO **EX**	175463	3m 4 core Ex	
2NC **EX**	175464	3m 4 core Ex	
2NC 2NO **EX**	175465	3m 8 core Ex	

TECHNICAL SPECIFICATIONS:

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	500,000 operations at 100mA load
Positive Opening Operation	NC contacts
Utilisation Category	AC15 A300 240V 3A
Minimum Current	5V 5mA dc
Thermal Current (Ith)	10A
Rated Insulation Voltage	300Vac
Rated Impulse Withstand	2500Vac
Maximum Switching Speed	250mm/sec
Housing Material	Stainless Steel 316
Roller Material:	Stainless Steel or Plastic
Enclosure Protection	IP69K
Operating Temperature	-25C to +80C
Electrical Life Expectancy	100,000 cycle min (at full load)
Vibration	IEC68-2-6 10-55Hz 0.35mm
Conductor Size	1.5mm^2
Fixing	M5 bolts
Operating Torque	1.10Nm Plastic Roller 1.40Nm Stainless Steel Roller

2 Wire Safety Communication for Rope Switches - **IdeSafe Bus System**

2 WIRE SAFETY SYSTEM FOR USE WITH ROPE SWITCHES COVERING LONG DISTANCES:

The IdeSafe Bus System allows GLH switches to be connected in series to protect long conveyor lengths over 5km whilst maintaining diagnostics and safety integrity.

Each switch contains an address programmable module to give individual diagnostics of the switch status and is readable at the control cabinet. Open circuits are detected.

The whole system is connected in series by a simple 2-wire connection system from switch to switch making wiring simple and easy. Up to 63 switches can be connected to one “Bus”.

Safety integrity is maintained throughout via positively opened switch contacts connected to the transmission bus to maintain PLe to ISO13849-1 and SIL3 to EN62061.

Communication capabilities - can be interfaced to most Text Displays, Touch Screens, PLCs and PCs via the gateways for Modbus and Profibus.

High flexibility - it is easy to expand the system step-by-step by installing additional safety input modules.

Basic elements required - Master Module, Safety Receiver and Rope Switches with Input Modules.

DESCRIPTION:

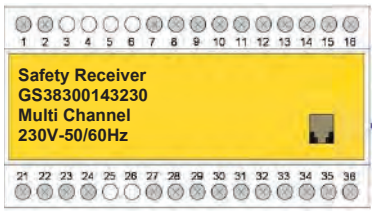
Bus powered address “modules” are integrally fitted within the Rope Switch housings and protected to IP67.

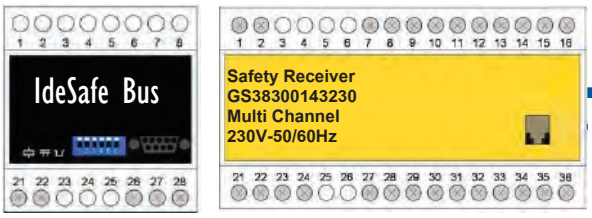
They monitor the positively operated switch contacts to provide a 2-wire (channel) safety signal output which is monitored by the Safety Receiver Relay. The “Safe State” signal is transmitted continuously by each switch to the Safety Relay as long as the switch contacts are closed and the module self check is positive. Short circuit and open circuit faults are detected along the 2-wire continuous connection.

SUITABLE APPLICATIONS:

- Mines and Tunnelling
- Power Plants
- Airport Systems
- Cranes and Elevators
- Cement Manufacturing Plants
- Harbours and Docksides
- Postal Systems
- Automatic Door Systems
- Quarrying
- Conveyors on Sorting Systems
- Automated Logistic Systems
- Petro-Chemical Plants

Programmable 2-wire Safety Bus System
Satisfies highest safety levels using a 2-wire connection bus
DIN rail mounting
Monitored or Auto Reset
High flexibility - easy to expand the system
Communication capabilities - can be interfaced to most Text Displays
Profibus connection module available for diagnostic connection to PLC

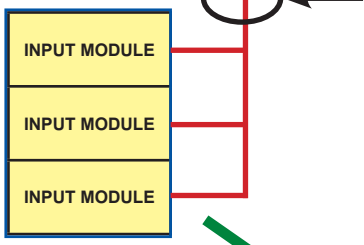




Optional PROFIBUS INTERFACE allows for monitoring of the system e.g. using a PLC.

Master Module

Safety Relay Module



2-wire connection only.

Input Modules are address programmable and are incorporated within the safety switches.

The Safety Relay will open the contacts if it does not receive a valid “input contact closed” signal from all the input modules which it has been configured to monitor.

Diagnostic information via PLC, PC or Text Display.

Up to 63 safety signals (switches) on one IdeSafe Bus.

PLe ISO13849-1 SIL3 EN61508 TUV Approved.

TÜV

Input Modules are incorporated within safety switches

2 Wire Safety Communication for Rope Switches - IdeSafe Bus System

MODE OF OPERATION:

The Safety Receiver is used to monitor the NC positively operated switch contacts. The status of the switch contact is continuously transmitted on the IdeSafe Bus using a dynamic signalling principle over two channels (wires). A Master Module (Channel Generator) is always used in conjunction with a Safety Receiver and can monitor up to 63 modules (switches) all connected to the same IdeBus. If one or more modules fail to send the "Safe State" signal then the Safety Receiver contacts will release and open.

ADDRESSING:

For addressing each module (switch) the hand held Programming Module is used to assign 3 pieces of information which identifies the individual address of the module (switch) - the Synchronisation Channel, Safety Transmit 1 and Safety Transmit 2. (Refer to operating manual for the Programming Module). The Synchronisation Channel is used by the Safety Receiver to send out a synchronisation signal to each input module on the IdeBus, therefore all modules and the Safety Receiver must be coded for the same synchronisation channel. Each module must be coded for a unique channel pair not used by any other switch.

The Safely Transmit 1 and Safety Transmit 2 channels are used by each module to transmit the switch status in such a dynamic way ensuring redundancy, diversity and continuous updating.

TERMINAL CONNECTIONS:

Terminal Connections inside Switch:

C - Switch Contact - positive break (internally pre-wired)

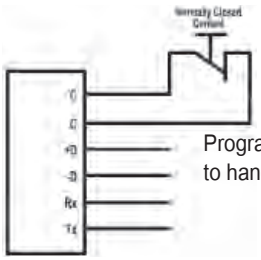
C - Switch Contact - positive break (internally pre-wired)

+D - IdeBUS Line - external connection

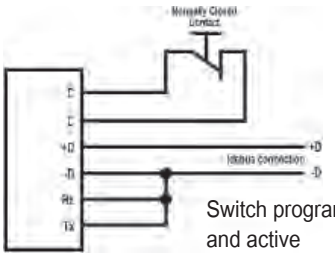
-D - IdeBUS Line - external connection

Rx - Connection for programming only - otherwise common with -D and Tx

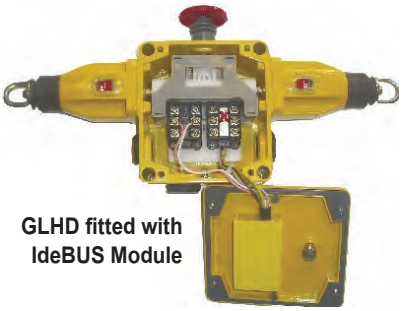
Tx - Connection for programming only - otherwise common with -D and Rx



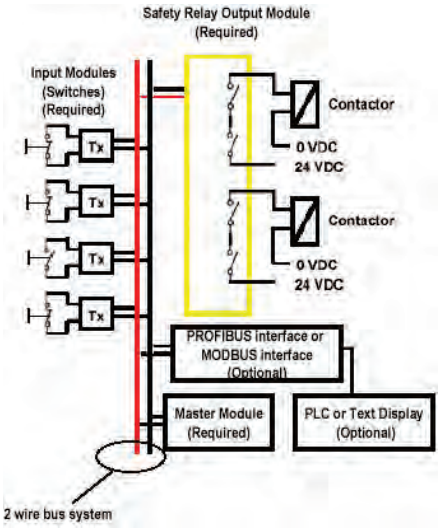
Programming connections to hand held programmer



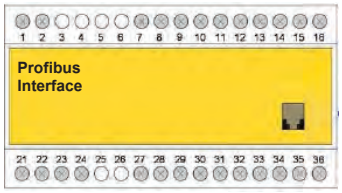
Switch programmed and active



GLHD fitted with IdeBUS Module



ACCESSORIES:



Profibus Interface

ModBus Gateway

Text Display

Standards:	IEC61508 EN62061
Supply	From master module
Current Consumption	1.0mA
Connection Cable Type	Any 2 core or twisted pair
Open Loop Voltage	2.5Vdc
Short Circuit Current	100 microamp
Dielectric Voltage	None
Power "ON" Delay	<5s
Degree of Protection	IP67
Operating Temperature	-25C +50C
Humidity (Non-Condensing)	20-80%
Safety Receiver (Relay Output)	
Power Supply 115Vac or 230Vac	+/-10%
Output Contact Switching Voltage	250Vac/dc
Switching Capacity	6A AC-1 at 230V 3A AC-15 at 230V 5A DC-13 at 24V
Status Ouputs	1 PNP transistor output 30Vdc 5mA max.
5 Status LEDs	Green - Power Yellow - IdeBus status positive Red - Relay status Red - Manual start ready All Flashing - configuration mode
Response Time Closed	600ms
Response Time Open	300ms

SALES NUMBER	TYPE	SUPPLY VOLTAGE
182001	Master Module - Channel Generator	24Vdc
182002	Master Module - Channel Generator	110V/230Vac
182003	Safety Relay Module (Receiver)	110V/230Vac
182004	ModBus Gateway Text Display Interface	
182005	Text Display	
182006	Profibus Interface	110V/230Vac
182007	Programming Module/Interface	
	SWITCHES WITH ADDRESS MODULES	
182101	GLHD Rope Switch M20	Die-Cast - Painted Yellow
182102	GLHD Rope Switch 1/2"NPT	Die-Cast - Painted Yellow
182103	GLHL Rope Switch M20	Die-Cast - Painted Yellow
182104	GLHL Rope Switch 1/2"NPT	Die-Cast - Painted Yellow
182105	GLHR Rope Switch M20	Die-Cast - Painted Yellow
182106	GLHR Rope Switch 1/2" NPT	Die-Cast - Painted Yellow
182107	GLHD-SS Rope Switch M20	Stainless Steel 316
182108	GLHD-SS Rope Switch 1/2"NPT	Stainless Steel 316
182109	GLHL-SS Rope Switch M20	Stainless Steel 316
182110	GLHL-SS Rope Switch 1/2"NPT	Stainless Steel 316
182111	GLHR-SS Rope Switch M20	Stainless Steel 316
182112	GLHR-SS Rope Switch 1/2"NPT	Stainless Steel 316

Safety Light Curtains

DESCRIPTION:

Idem's Safety Light Curtains for finger and hand protection offer the user maximum accessibility to a machine or production line by removing or complementing the requirement for mechanical guarding.

Manufacturing processes that require operator access to the dangerous area can be performed quickly and with the minimum of interruption to production flow. Machines of all sizes are well suited to guarding by light curtains since the high level of throughput requires the minimum of interruption when inserting and removing product.

Fork lift truck access to conveyor lines is also an ideal application allowing fast and efficient access whilst maintaining a high level of safety integrity.

OPERATING PRINCIPLE:

Idem's SLC-F, SLC-H Safety Light Curtains have been designed to ensure protection of operators working in hazardous areas.

They operate with infrared beams that are evenly spaced at specific intervals.
SLC-F (finger protection) beams spaced 14mm min. sensing.
SLC-H (hand protection) beams spaced 30mm min. sensing.

When the beam detects a finger or hand entering the defined hazardous area, the protective equipment immediately stops the machine with a 14ms response, or renders it harmless.

A high reliability is achieved by implementing a fail-safe system: The devices are Type 4 and PLe/Cat4 to ISO13849-1.

Internal failure immediately deactivates the output signals as does any intrusion into the protective field.

DESIGN FEATURES:

Non muting function to increase productivity and safety.

PNP or NPN selection by DIP switch.

Smart click connectors (voltage out are from connectors).

Advanced muting function automatically detects when a work space does not pass.

Sensing surface fully protected due to the design feature of narrowing and recessing the exposed area.

Fast response time of 14ms for all models regardless of number of beam channels or the number of units connected in series.

POSITIONING OF SAFETY LIGHT CURTAINS:

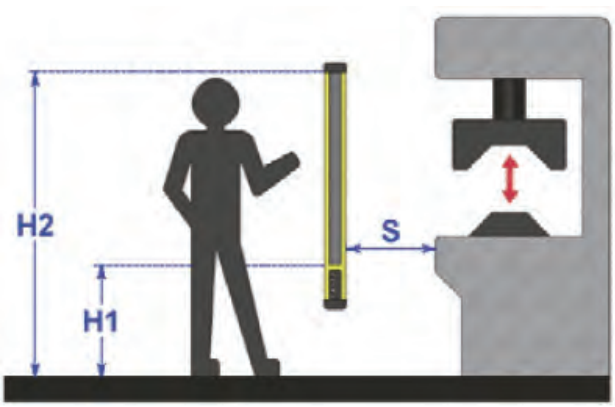
The Safety Distance is the minimum distance that must be maintained between the safety sensor and the hazardous part of the machine in order to stop the machine before someone or something reaches it.

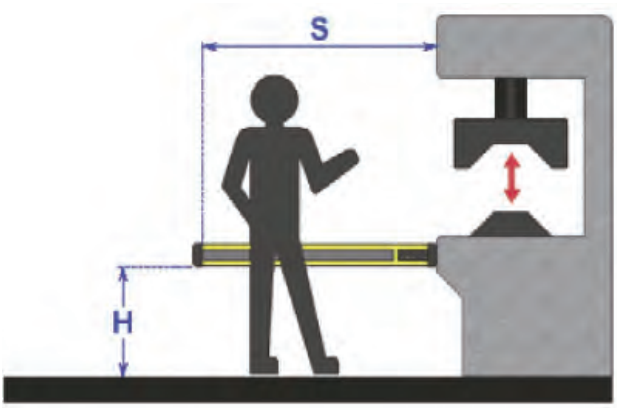
A full risk assessment should always be carried out prior to installing a safety light curtain.

The Safety Distance S can be calculated using the equation method provided by the standard EN999 (ISO14120).

Vertical Curtain: S = (K x T) + 8 x (R-14) where

S is the minimum safety distance in mm from the hazardous part of the machine to the detection point of the safety sensor.
K is the approach speed of the body or parts of the body in mm/s. (2000mm/s for calculated value of S<501mm or 1600mm/s for S>500mm).
T is the overall stopping performance in seconds, sum of safety sensor response time and machine response time.
R is the resolution of the SLC (safety light curtain) (mm).



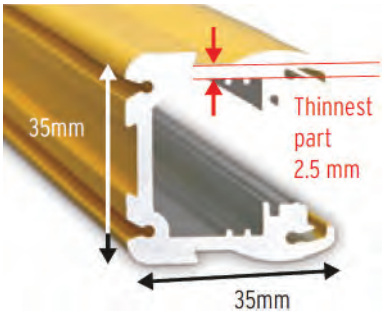


Safety Light Curtains

FEATURES:

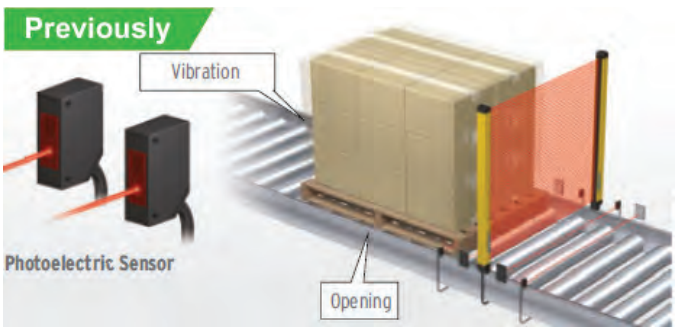
ROBUST AND COMPACT HOUSING:
Idem's SLC-F and SLC-H Safety Light Curtains are all equipped with a robust housing that can be used in harsh environments and withstand shocks caused by sudden human contact or a dropped tool. A scratch resistant material is used for the optical surface to prevent any unexpected machine stops.

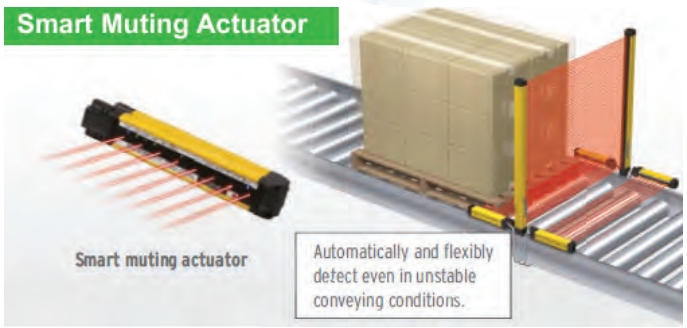
SLIM HOUSING:
The housing structure is significantly improved to enhance resistance against shock and vibration and to reduce the thickness of the thinnest part of the housing material from 3mm to 2.5mm.



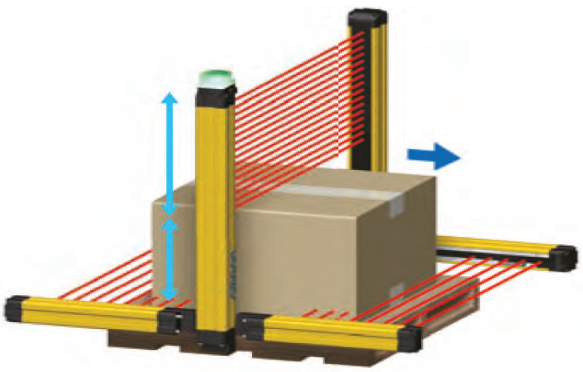
HARSH ENVIRONMENTS:
With an increased resistance to torsion the risk of optical axis misalignment due to external forces such as vibration or aging is reduced significantly.
With an IP67 rating IDEM's Safety Light Curtains are suitable for use in areas that are subject to water.

INCREASED PRODUCTIVITY AND SAFETY (Muting Function):
IDEM's Safety Light Curtains provide an advanced Muting function that detects the zone where work pieces pass or the position of a machine or robot and disable beams of the detected part. This increases both safety and productivity. By adding the smart muting actuator this provides stable operation even for the production lines where errors occur due to vibration caused by the passing work piece.





AUTO-CONFIGURATION OF MUTING ZONE (Dynamic Muting):
When work pieces with various heights are conveyed on the same line, partial muting is automatically performed based on the height of the work piece.
This advanced muting function can automatically perform normal detection at the zone where a work piece does not pass.
The only beams interrupted by the work piece are kept muted and other beams are released from the muting state three seconds after the work piece passes through the safety light curtain. Muting is disabled after the work-piece has passed.
Monitors human entry into the zone where a work piece does not pass (see picture opposite). Keeps only the zone muted where the work piece passes through.

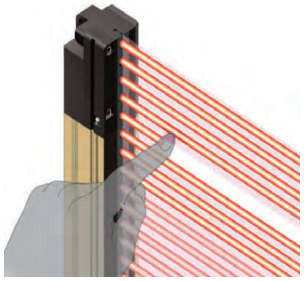


SELECTION:

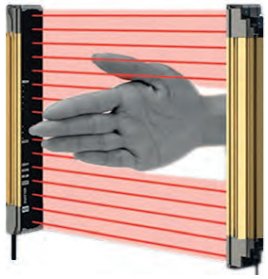
Idem's Safety Light Curtain range is perfectly suited for where finger and hand protection is required close to the hazardous area (point of operation).

Depending on the application, a resolution of either 14 mm (finger protection) or 30 mm (hand protection) is available.
Thanks to their type 4, Cat 4, PLe safety level, Idem's devices can be used on equipment requiring high protection reliability and this includes, but is not limited to, the following applications such as machine tools, robots, hydraulic presses, automated stock management, weaving looms, etc.

Finger Protection SLC-F:



Hand Protection SLC-H:



Safety Light Curtains **Type: SLC-F Finger (14mm)**

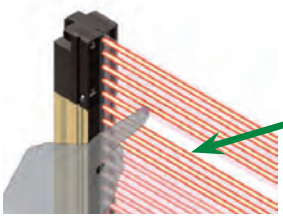
FEATURES:

- Resolution: 14mm
- Protective height: 160mm to 1040mm
- Type 4 according to IEC61496-1 and -2
- Operating range: 0.3m to 10m
- Category 4, PLe according to EN/ISO13849-1
- Ingress protection IP67

ORDERING INFORMATION:

SALES NUMBER	NUMBER OF BEAMS	PROTECTIVE HEIGHT (mm)
SLC-F-160	15	160
SLC-F-240	23	240
SLC-F-400	39	400
SLC-F-560	55	560
SLC-F-800	79	800
SLC-F-1040	103	1040

NOTE: Comes complete with SENDER, RECEIVER and STANDARD FIXING BRACKETS.



MINIMUM SENSING

14mm

SALES NUMBER	NUMBER OF BRACKETS
SLC-SB-2	2
STANDARD BRACKETS (Supplied)	
Side mounting and backside mounting possible. Pack of two brackets included in the SLC-F package	

SALES NUMBER	NUMBER OF BRACKETS
SLC-AB-2	2
ADJUSTABLE BRACKETS (Optional extra)	
Angle adjustment range is ±15 °. Side mounting and backside mounting possible.	

CONNECTOR CABLE (Single-Ended)

SENDER CABLE:
M12 Connector
5-Pin, 5 Wires, Grey
RECEIVER CABLE:
M12 Connector
8 Pin, 8 Wires, Black

SINGLE-ENDED CONNECTOR CABLE			
EMITTER		RECEIVER	
SLC-CC-S3	3m	SLC-CC-R3	3m
SLC-CC-S10	10m	SLC-CC-R10	10m
SLC-CC-S20	20m	SLC-CC-R20	20m

TECHNICAL SPECIFICATIONS:

SLC-F SAFETY LIGHT CURTAINS TECHNICAL DATA	
Performance:	
Object Resolution (Detection Capability)	14mm diameter
Beam Gap	10mm
Protective Height	160mm to 1040mm (6.3 inch to 41 inch)
Operating Range	300mm to 10.0m (1ft to 32.8ft)
Electrical:	
Power Supply Voltage (Vs)	SELV/PELV 24 VDC±20% (ripple p-p 10% maximum)
Supply Outputs (OSSD)	Two PNP or NPN transistor outputs (PNP or NPN is selectable by DIP Switch.) Load current of 300 mA max.,
Output Operation Mode - Safety Output	Light-ON (Safety output is enabled when the receiver receives an emitting signal.)
Over-voltage Category (IEC 60664-1)	II
Protective Circuit	Output short protection, Power supply reverse polarity protection
Insulation Resistance	20 MOhms or higher (500 VDC megger)
Dielectric Strength	1,000 VAC, 50/60 Hz (1 min)
Functional:	
Test Function	Self-test (at power-on, and during operation). External test (light emission stop function by test input)
Safety Related Functions	Interlock External device monitoring (EDM) Pre-reset Fixed blanking/Floating blanking Reduced resolution Muting/Override Scan code selection PNP/NPN selection Response time adjustment
Environmental:	
Ambient Temperature	Operating: -10 to 55°C (14 to 131°F) (non-icing) Storage: -25 to 70°C (-13 to 158°F)
Ambient Humidity	Operating: 35% to 85% (non-condensing) Storage: 35% to 95%
Ambient Illuminance	Incandescent lamp: 3,000 lx max. on receiver surface. Sunlight: 10,000 lx max. on receiver surface
Degree of Protection (IEC 60529)	IP65 and IP67
Vibration Resistance (IEC 61496-1)	10 to 55 Hz, Multiple amplitude of 0.7 mm, 20 sweeps for all 3 axes
Shock Resistance (IEC 61496-1)	100 m/s2, 1000 shocks for all 3 axes
Pollution Degree (IEC 60664-1)	Pollution Degree 3
Material:	Housing: AluminumCap: PBT Front window: PMMA Cable: Oil resistant PVC Mounting Bracket: ZDC2 FE plate: SUS
Conformity:	
Type of ESPE (IEC 61496-1)	Type 4
Performance Level (PL) Safety Category	Type 4: PL e/Category 4 (EN ISO 13849-1:2008)
PFHd	≤ 9.9 × 10-8 (IEC 61508)
Proof test interval TM	Every 20 years (IEC 61508)
SFF	99% (IEC 61508)
HFT	1 (IEC 61508)
Classification	Type B (IEC 61508-2)

Safety Light Curtains **Type: SLC-H Hand (30mm)**

FEATURES:

Resolution: 30mm

Protective height: 270mm to 1710mm

Type 4 according to IEC61496-1 and -2

Operating range: 0.3m to 20m

Category 4, PLe according to EN/ISO13849-1

Ingress protection IP67

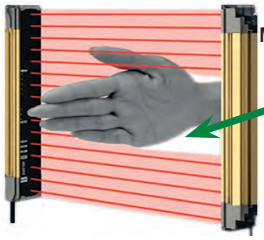
ORDERING INFORMATION:

SALES NUMBER	NUMBER OF BEAMS	PROTECTIVE HEIGHT (mm)
SLC-H-270	12	270
SLC-H-430	20	430
SLC-H-750	36	750
SLC-H-1070	52	1070
SLC-H-1470	72	1470
SLC-H-1710	84	1710

NOTE: Comes complete with SENDER, RECEIVER and STANDARD FIXING BRACKETS.

SALES NUMBER	NUMBER OF BRACKETS
SLC-SB-2	2
STANDARD BRACKETS (Supplied)	
Side mounting and backside mounting possible. Pack of two brackets included in the SLC-F package	

SALES NUMBER	NUMBER OF BRACKETS
SLC-AB-2	2
ADJUSTABLE BRACKETS (Optional extra)	
Angle adjustment range is ±15 °. Side mounting and backside mounting possible.	



CONNECTOR CABLE (Single-Ended)

SENDER CABLE:
M12 Connector
5-Pin, 5 Wires, Grey
RECEIVER CABLE:
M12 Connector
8 Pin, 8 Wires, Black

SINGLE-ENDED CONNECTOR CABLE			
EMITTER		RECEIVER	
SLC-CC-S3	3m	SLC-CC-R3	3m
SLC-CC-S10	10m	SLC-CC-R10	10m
SLC-CC-S20	20m	SLC-CC-R20	20m

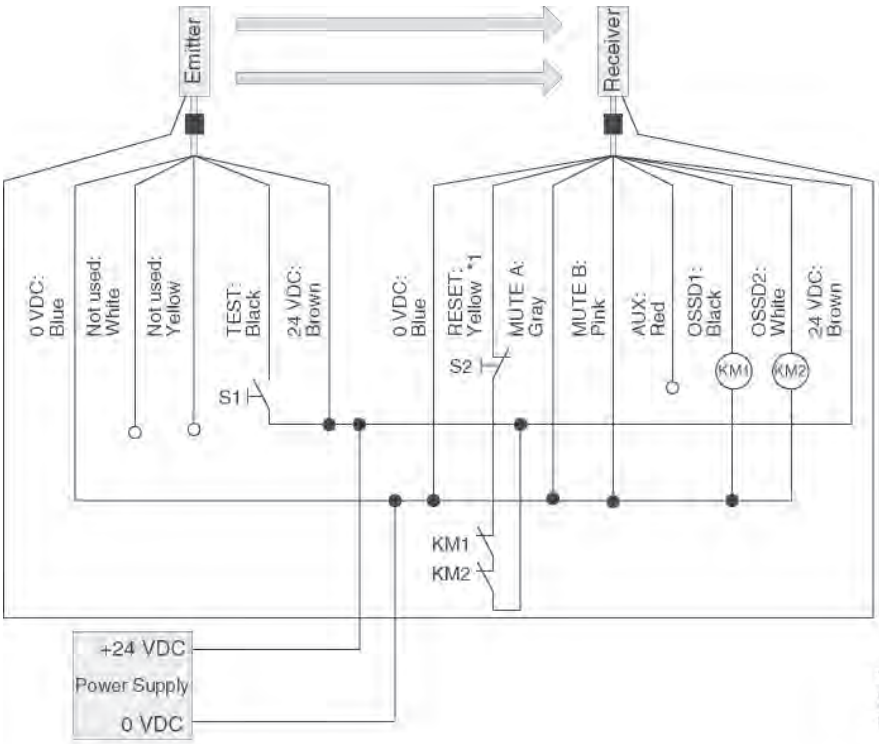
TECHNICAL SPECIFICATIONS:

SLC-F SAFETY LIGHT CURTAINS TECHNICAL DATA	
Performance:	
Object Resolution (Detection Capability)	30mm diameter
Beam Gap	20mm
Protective Height	270mm to 1710mm (10.5 inch to 68 inch)
Operating Range	300mm to 20.0m (1ft to 65ft)
Electrical:	
Power Supply Voltage (Vs)	SELV/PELV 24 VDC±20% (ripple p-p 10% maximum)
Supply Outputs (OSSD)	Two PNP or NPN transistor outputs (PNP or NPN is selectable by DIP Switch.) Load current of 300 mA max.,
Output Operation Mode - Safety Output	Light-ON (Safety output is enabled when the receiver receives an emitting signal.)
Over-voltage Category (IEC 60664-1)	II
Protective Circuit	Output short protection, Power supply reverse polarity protection
Insulation Resistance	20 MOhms or higher (500 VDC megger)
Dielectric Strength	1,000 VAC, 50/60 Hz (1 min)
Functional:	
Test Function	Self-test (at power-on, and during operation). External test (light emission stop function by test input)
Safety Related Functions	Interlock External device monitoring (EDM) Pre-reset Fixed blanking/Floating blanking Reduced resolution Muting/Override Scan code selection PNP/NPN selection Response time adjustment
Environmental:	
Ambient Temperature	Operating: -10 to 55°C (14 to 131°F) (non-icing) Storage: -25 to 70°C (-13 to 158°F)
Ambient Humidity	Operating: 35% to 85% (non-condensing) Storage: 35% to 95%
Ambient Illuminance	Incandescent lamp: 3,000 lx max. on receiver surface. Sunlight: 10,000 lx max. on receiver surface
Degree of Protection (IEC 60529)	IP65 and IP67
Vibration Resistance (IEC 61496-1)	10 to 55 Hz, Multiple amplitude of 0.7 mm, 20 sweeps for all 3 axes
Shock Resistance (IEC 61496-1)	100 m/s2, 1000 shocks for all 3 axes
Pollution Degree (IEC 60664-1)	Pollution Degree 3
Material:	Housing: AluminumCap: PBT Front window: PMMA Cable: Oil resistant PVC Mounting Bracket: ZDC2 FE plate: SUS
Conformity:	
Type of ESPE (IEC 61496-1)	Type 4
Performance Level (PL) Safety Category	Type 4: PL e/Category 4 (EN ISO 13849-1:2008)
PFHd	≤ 9.9 × 10-8 (IEC 61508)
Proof test interval TM	Every 20 years (IEC 61508)
SFF	99% (IEC 61508)
HFT	1 (IEC 61508)
Classification	Type B (IEC 61508-2)

Safety Light Curtains **Type: SLC-F and SLC-H**

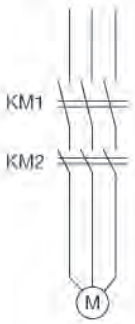
CONNECTIONS (Basic Wiring Diagrams):

STANDALONE SLC-F or SLC-H using PNP OUTPUTS:



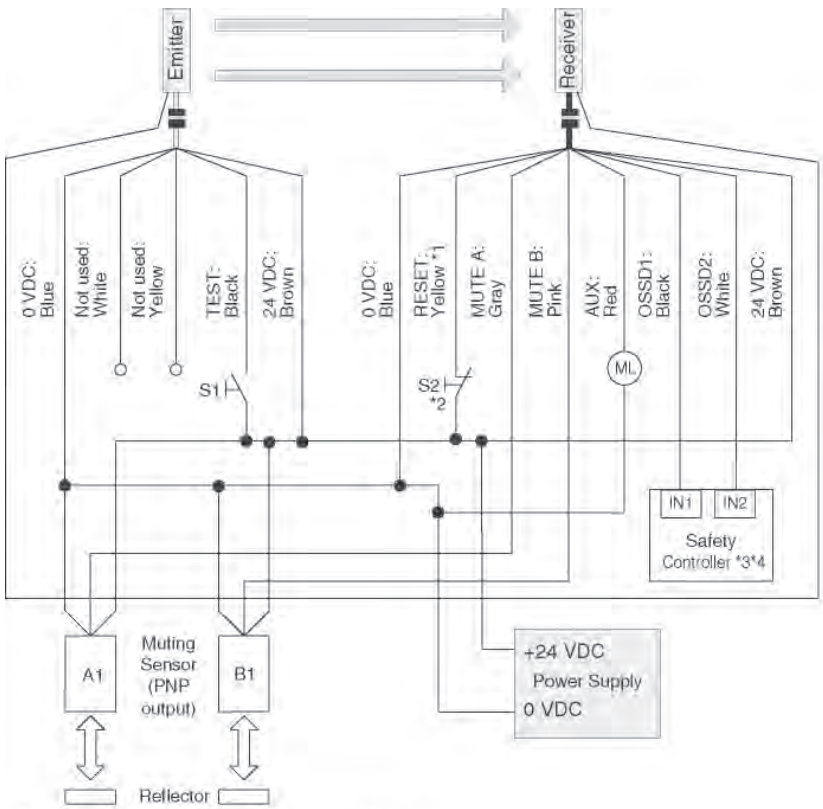
[DIP Switch settings]
Receiver:
- Manual Reset Mode
- EDM enabled
- PNP output

Emitter:
- 24 V Active



S1: Test Switch
S2: Lockout/Interlock Reset Switch
KM1, KM2: Safety relay with forcibly guided contacts
M: 3-phase motor
*1. Also used as EDM input line.

STANDARD MUTING MODE/EXIT-ONLY MUTING MODE WITH TWO MUTING SENSORS USING PNP OUTPUTS



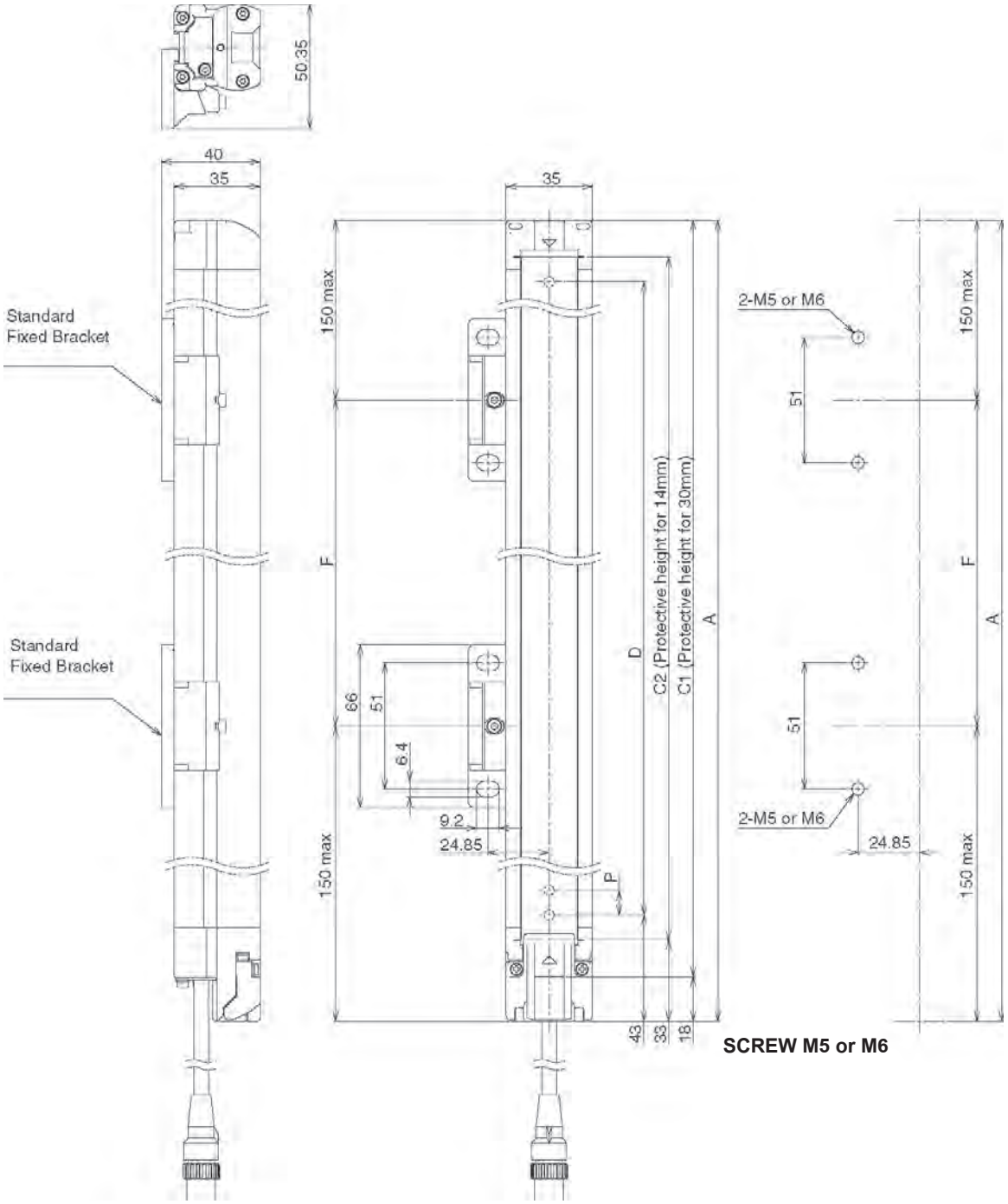
[DIP Switch settings]
Receiver:
- Auto Reset Mode
- EDM disabled
- PNP output

Emitter:
- 24 V Active

S1: Test Switch
S2: Lockout/Interlock Reset Switch,Override Switch or Override Cancel Switch
ML: Muting lamp
A1, B1: Muting sensor

DIMENSIONS:

MOUNTED WITH STANDARD FIXED BRACKETS (supplied in pack) BACKSIDE MOUNTING:



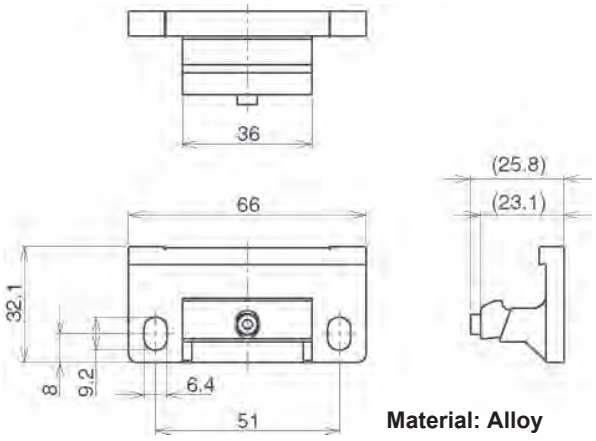
DIMENSIONS FOR SLC-H SERIES

DIMENSIONS SLC-H SERIES	
Dimension A	C1 + 18
Dimension C1	Protective Height (See pp221)
Dimension D	C1 - 50
Dimension P	20

DIMENSIONS FOR SLC-F SERIES

DIMENSIONS SLC-F SERIES	
Dimension A	C2 + 48
Dimension C2	Protective Height (See p220)
Dimension D	C1 - 20
Dimension P	10

STANDARD FIXED BRACKET DIMENSIONS (Supplied)



Material: Alloy

Safety Light Curtains **Type: SLC-F and SLC-H**

INDICATOR INFORMATION:

EMITTER:

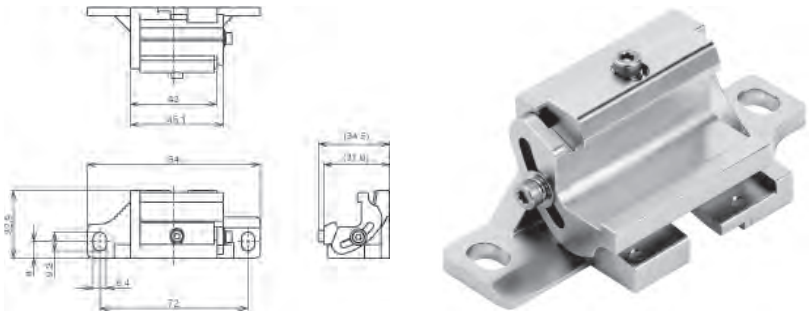
NAME OF INDICATOR		COLOUR	ILLUMINATED	BLINKING
Test	TEST	Green	-	External test is being performed.
Operating Range	LONG	Green	Long range mode is selected by DIP Switch.	Lockout state due to DIP Switch seeing error.
Power	POWER	Green	Power is ON.	-
Lockout	LOCKOUT	Red	-	Lockout state due to error in emitter.

RECEIVER:

NAME OF INDICATOR		COLOUR	ILLUMINATED	BLINKING
Top-beam-state	TOP	Blue	The top beam is unblocked	Muting/Override state, or Lockout state due to Cap error or other sensor error
PNP/NPN mode	NPN	Green	NPN mode is selected by DIP Switch	-
Response time	SLOW	Green	Response Time Adjustment is enabled	-
Sequence error	SEQ	Yellow	-	Sequence error in Muting or Pre-reset mode.
Blanking	BLANK	Green	Blanking, Warning Zone or Reduced Resolution is enabled.	Teach-in mode, or Blanking Monitoring error.
Configuration	CFG	Green	-	Teach-in mode, zone measurement being performed by Dynamic Muting, or Lockout state due to Parameter error or Cascading Configuration error.
Interlock	INT-LK	Yellow	Interlock state	Pre-reset mode.
External device monitoring	EDM	Green	RESET input is in ON state	Lockout state due to EDM error.
Internal error	INTERNAL	Red	-	Lockout state due to Internal error, or error due to abnormal power supply or noise.
Lockout	LOCKOUT	Red	-	Lockout state due to error in receiver.
Stable-state	STB	Green	Incident light level is 170% or higher of ON-threshold.	Safety output is instantaneously turned OFF due to ambient light or vibration.
ON/OFF	ON/OFF	Green	Safety output is in ON state.	-
		Red	Safety output is in OFF state, or the sensor is in Setting state.	Lockout state due to Safety Output error, or error due to abnormal power supply or noise.
Communication	COM	Green	Synchronization between emitter and receiver is maintained.	Lockout state due to Communication error, or error due to abnormal power supply or noise.
Bottom-beam-state	BTM	Blue	The bottom beam is unblocked	Muting/Override state, or Lockout state due to DIP Switch setting error.

Accessories: Brackets, Alignment Tool, Extension Cables

ADJUSTABLE MOUNTING BRACKET:



SALES NUMBER	NUMBER OF BRACKETS
SLC-AB-2	2
ADJUSTABLE BRACKETS (Optional extra)	
Angle adjustment range is ±15 °. Side mounting and backside mounting possible.	

SMART MUTING ACTUATOR:

ACCESSORY DESCRIPTION	MUTING TRIGGER BEAM GAP	SALES NUMBER
Smart Muting Actuator - 8 beams	100mm	SLC-SMA100
Smart Muting Actuator - 20 beams	300mm	SLC-SMA300

MUTING LAMP:

ACCESSORY DESCRIPTION	SALES NUMBER
Muting Lamp	SLC-ML1

EXTENSION CABLES:

TECHNICAL DATA:	
Rated Voltage	60V ac/dc max.
Rated Current	4A max. per contact
Electromagnetic Protection	Shielded
Sleeve Material	PUR
Wire Structure	5 x 0.34mm^2
Wire Insulation	PP
Outer Cable Diameter	6.3mm ± 5%
Temperature Range	-25C to +80C (-13F to +175F)
Degree of Protection	IP67
Certification	UL CSA

CABLE DESCRIPTION (M12 Male to Female)	SALES NUMBER
EMITTER:	
PUR Shielded M12 5-pole 3m length	SLC-CE3
PUR Shielded M12 5-pole 10m length	SLC-CE10
RECEIVER:	
PUR Shielded M12 8-pole 3m length	SLC-CR3
PUR Shielded M12 8-pole 10m length	SLC-CR10
NOTE: Cables are not supplied with Safety Light Curtains	

Safety Relay **Type: SCR-31P-i** (for use with Safety Light Curtains)

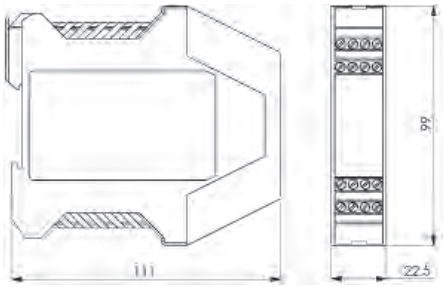
DESCRIPTION:

The SCR-31P-i safety relay from IDEM is designed to be compatible with devices offering OSSD outputs such as the IDEM range of safety light curtains.
They offer high current switching via force guided relays.

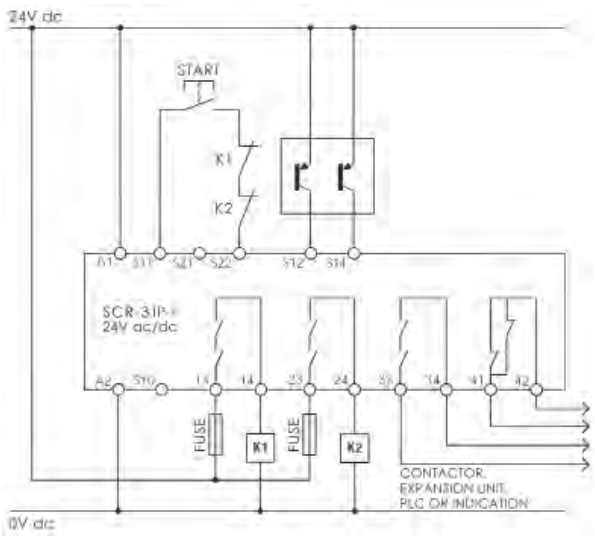
FEATURES:

- Outputs 3NC contacts and 1NO contact.
- Feedback circuit to monitor external contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 4.
- Monitored manual or automatic start.
- Up to 8A switching capability.

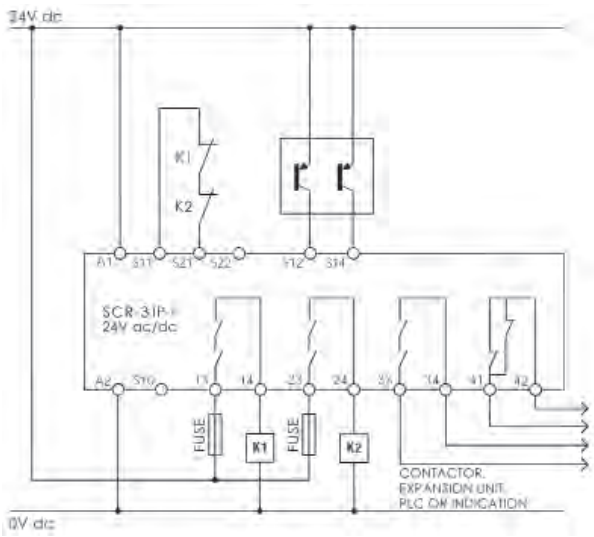
DIMENSIONS:



MANUAL RESTART MODE PNP INPUTS:



AUTOMATIC RESTART MODE PNP INPUTS:



SPECIFICATIONS:

STANDARDS	
EN ISO13849-1 EN62061 EN60204-1 EN ISO12100	
POWER SUPPLY CIRCUIT	
Operating Voltage	24V AC/DC
Operating Voltage Tolerance	85-110%
Rated Supply Frequency	50Hz-60Hz
Power Consumption	2W (24V DC)
CONTROL CIRCUITS	
Rated Output Voltage	24V DC (S11)
Output Current	100mA (S11)
Response Time	100ms
Release Time	25ms
Recovery Time	90ms
OUTPUT CIRCUITS	
Rated Output Voltage	250V AC
Maximum Current per Output	6A
Maximum Total Current all Outputs	8A
Safety Contact Breaking Capacity AC	250V, 1500V, 6A, Ohmic 230V, 4A for AC-15
DC	24V, 30W, 1.25A, Ohmic
Minimum Contact Load	10V 10mA
Minimum Contact Fuses	4A slow blow, 6A fast blow
Contact Material	$AgSnO_2$
Contact Service Life	10×10^6
GENERAL DATA	
Rated Impulse Withstand Voltage	4kV
Rated Insulation Voltage	250V
Degree of Protection	IP20
Temperature Range	-20C to +55C
Overvoltage Category	III
Weight	300gr (10.5 oz.)

SAFETY CHARACTERISTICS		
EN62061	SIL3	
ISO13849-1	Ple Category 4	
PFH	4.1E-10 1/h	(0.4% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	3.6E-05	(3.6% of SIL3 (1 E-03)
MTTFd	142a (High)	
DC Av.	99% (High)	

LED DIAGNOSTICS:

WHEN SAFETY RELAY IN OPERATION

Power	Power applied to device
Reset	Restart Circuit is closed.
CH1	External OSSD Output ON.
CH2	External OSSD Output ON.
K1	Internal relay safety output contacts closed.
K2	Internal relay safety output contacts closed.

ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	INPUT CIRCUITS	OUTPUT CONTACTS
280003	SCR-31P-i	Standard	24Vac/dc	2 x OSSD	3NC 1NO
280003-P	SCR-31P-i	Pluggable	24Vac/dc	2 x OSSD	3NC 1NO

Standard Duty Emergency Stops **Type: ES-P & ES-SS (3 pole)**

DESCRIPTION & FEATURES:

IDEM ES-P and ES-SS Standard Duty Emergency Stop Switches have been designed to provide robust emergency stop protection for machines or exposed conveyors and are suitable for use within virtually all industry sectors.

Plastic bodies (IP67) or Stainless Steel 316 (IP69K).
Conformance to ISO13850, EN60947-5-1 and EN60947-5-5.
A special lid safety trip mechanism means that the safety contacts will open if the lid is removed - this provides an extra degree of anti-tamper.
Button protection shroud versions with padlock holes to enable "Lock Off" in maintenance situations.
3 pole contact blocks provide positively operated switch contacts.

TYPE: ES-P (Plastic)
Knock out for plastic version

IP69K

TYPE: ES-SS
Stainless Steel 316

IP69K

TYPE: ES-SS(P) Stainless Steel 316
with button protection shroud
and padlock holes

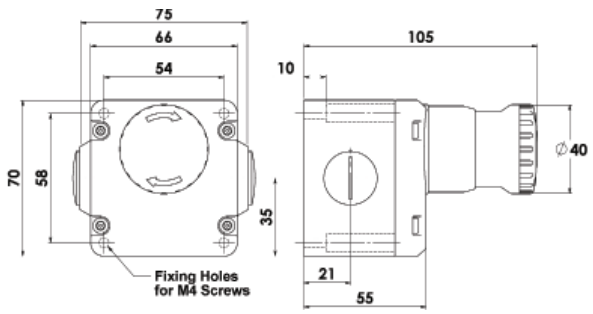
SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
230001	ES-P	Knockout M20 / 1/2"NPT	2NC 1NO
230002	ES-P	Knockout M20 / 1/2"NPT	3NC

SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
231001	ES-SS	M20	2NC 1NO
231002	ES-SS	1/2"NPT	2NC 1NO
231003	ES-SS	M20	3NC
231004	ES-SS	1/2"NPT	3NC
Replacement Lid quote Sales Number: 231100			

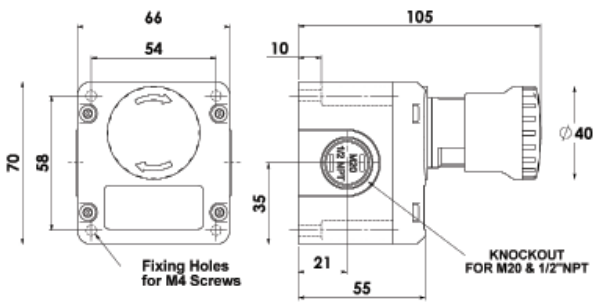
SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
231005	ES-SS(P)	M20	2NC 1NO
231006	ES-SS(P)	1/2"NPT	2NC 1NO
231007	ES-SS(P)	M20	3NC
231008	ES-SS(P)	1/2"NPT	3NC
Replacement Lid quote Sales Number: 231101			

Gold Plated Contacts available for low power circuits (5V 5mA). **Ordering: Add GC to Part Number e.g. 230001-GC**

DIMENSIONS:



TYPE: ES-SS (STAINLESS STEEL 316)



TYPE: ES-P (PLASTIC)

S/STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 214 years
Enclosure/Cover Material	Polyester/Stainless Steel 316
IP Rating	IP69K - Stainless Steel 316 IP67 - Plastic
Mounting	4 x M4
Mounting Position	Any
Conduit Entries	2 x M20 or 2 x 1/2" NPT (by Sales Number) Knock out for Plastic version (ES-P)
Tongue Settings	Mounting M4 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Weight	295g to 1000g
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 3NC (positive break) 1NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

Standard Duty Emergency Stops **Type: ESL-SS (4 pole)**

DESCRIPTION & FEATURES:

IDEM ESL-SS Standard Duty Emergency Stop Switches have been designed to provide robust emergency stop protection for machines or exposed conveyors, and are suitable for use within virtually all industry sectors.

Stainless Steel 316 (IP69K) can be high pressure hosed with detergents at high temperature.
Conformance to ISO13850, EN60947-5-1 and EN60947-5-5.
A special lid safety trip mechanism means that the safety contacts will open if the lid is removed.
Button protection shroud versions with padlock holes for "Lock Off" in maintenance situations.
Optional 2-colour LED.

TYPE: ESL-SS(LP) Stainless Steel 316 with 2-Colour LED and Protection Shroud

TYPE: ESL-SS (Stainless Steel 316)

TYPE: ESL-SS(P) Stainless Steel 316 with Protection Shroud and Padlock Holes

TYPE: ESL-SS(L) Stainless Steel 316 with 2-Colour LED

SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
232001	ESL-SS	M20	2NC 2NO
232002	ESL-SS	1/2"NPT	2NC 2NO
232003	ESL-SS	M20	3NC 1NO
232004	ESL-SS	1/2"NPT	3NC 1NO
232005	ESL-SS	M20	4NC
232006	ESL-SS	1/2"NPT	4NC
Replacement Lid quote Sales Number: 232100			

SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
232009	ESL-SS(P)	M20	2NC 2NO
232010	ESL-SS(P)	1/2"NPT	2NC 2NO
232011	ESL-SS(P)	M20	3NC 1NO
232012	ESL-SS(P)	1/2"NPT	3NC 1NO
232013	ESL-SS(P)	M20	4NC
232014	ESL-SS(P)	1/2"NPT	4NC
Replacement Lid quote Sales Number: 232101			

SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
232017	ESL-SS(L)	M20	2NC 2NO
232018	ESL-SS(L)	1/2"NPT	2NC 2NO
232019	ESL-SS(L)	M20	3NC 1NO
232020	ESL-SS(L)	1/2"NPT	3NC 1NO
232021	ESL-SS(L)	M20	4NC
232022	ESL-SS(L)	1/2"NPT	4NC
232023	ESL-SS(LP)	M20	2NC 2NO
232024	ESL-SS(LP)	1/2"NPT	2NC 2NO
232025	ESL-SS(LP)	M20	3NC 1NO
232026	ESL-SS(LP)	1/2"NPT	3NC 1NO
232027	ESL-SS(LP)	M20	4NC
232028	ESL-SS(LP)	1/2"NPT	4NC
For LED Models add Voltage Code to Sales Number			
ESL-SS(L) Replacement Lid: 232102- (A, B or C)			
ESL-SS(LP) Replacement Lid: 232103- (A, B or C)			
Steady Green/Flashing Red A - 24Vdc B - 110Vac C - 230Vac			
Steady Green/Steady Red AS - 24Vdc BS - 110Vac CS - 230Vac			

Gold Plated Contacts available for low power circuits (5V 5mA). Add GC to Part Number e.g. 232001-GC

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 232017-GC

EXPLOSION PROOF MODELS ALSO AVAILABLE.
PLEASE SEE PAGES 228 and 229.

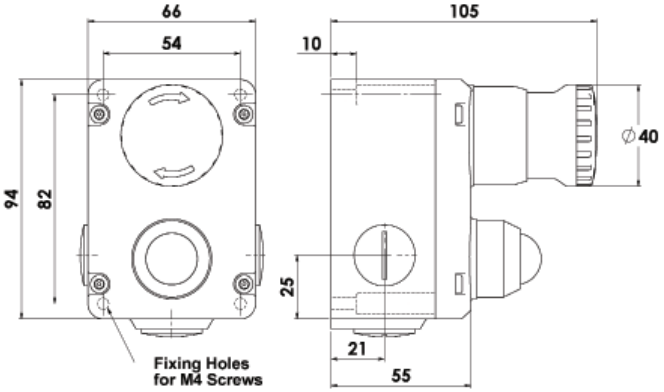
Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb **Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db**

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 214 years
Enclosure/Cover Material	Stainless Steel 316
IP Rating	IP67 IP69K
Mounting	4 x M4
Mounting Position	Any
Conduit Entries	3 x M20 or 3 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M4 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Weight	1060g to 1190g
Contact Type	EN60947-5-1 double break type Zb Snap Action up to 4NC (positive break) 2NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5mm^2 conductors
Rating	Utilisation category AC15
Operational Rating	240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage (U)	500V
Withstand Voltage (Uimp)	2500V
Short Circuit Overload Protection	Fuse externally 10A(FF)

IDEM recommend their Stainless Steel 316 Gland with this switch.

S/STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

DIMENSIONS:



TYPE: ESL-SS(L)

EXPLOSION PROOF Emergency Stops **Type: ESL-SS**

DESCRIPTION & FEATURES:

IDEM ESL-SS EXPLOSION PROOF Emergency Stop Switches have been designed to provide robust emergency stop protection for machines or exposed conveyors, and are suitable for use within virtually all industry sectors.

Stainless Steel 316 (IP69K) can be high pressure hosed with detergents at high temperature.
Conformance to ISO13850, EN60947-5-1, EN60947-5-5.
ATEX and IECEx certified for use in Zones 1, 21, 2 and 22 - Gas and Dust.
A special lid safety trip mechanism means that the safety contacts will open if the lid is removed.
Button protection shroud versions with padlock holes for “Lock Off” in maintenance situations.

TYPE: ESL-SS-Ex (Stainless Steel 316)

SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
232007	ESL-SS	EX 3m	1NC 1NO
232008	ESL-SS	EX 3m	2NC
232029	ESL-SS	EX 3m	2NC 2NO
Replacement Lid quote Sales Number: 232100			

TYPE: ESL-SS(P)-Ex Stainless Steel 316 with Protection Shroud and Padlock Holes

SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
232015	ESL-SS(P)	EX 3m	1NC 1NO
232016	ESL-SS(P)	EX 3m	2NC
232030	ESL-SS(P)	EX 3m	2NC 2NO
Replacement Lid quote Sales Number: 232101			

EX CLASSIFICATION:

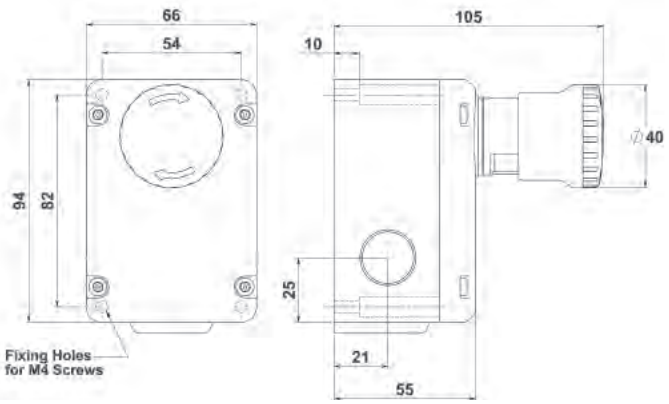
Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

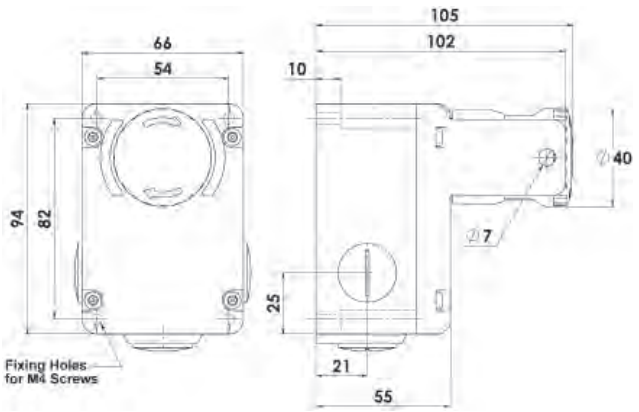
S/STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.

DIMENSIONS:



TYPE: ESL-SS



TYPE: ESL-SS(P)

TECHNICAL SPECIFICATIONS:

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 214 years
Enclosure/Cover Material	Stainless Steel 316
IP Rating	IP67 IP69K
Mounting	4 x M4
Mounting Position	Any
Conduit Entries	3 x M20 or 3 x 1/2” NPT (by Sales Number)
Tongue Settings	Mounting M4 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Weight	1060g to 1190g
EX Contact Type	230V 4A (4-core) 230V 2.5A (8-core)

Heavy Duty Emergency Stops **Type: GLES & GLES-SS**

DESCRIPTION & FEATURES:

IDEM GLES and GLES-SS Heavy Duty Emergency Stop Switches have been designed to provide robust emergency stop protection for machines or exposed conveyors, and are suitable for use within virtually all industry sectors.

Visual indication is available (large LEDs) to provide powerful indication of system and switch status from a distance, therefore enabling the rapid re-setting of the system. Optional LED indication - Steady Green: Machine Running and Flashing Red: Machine Stopped.

Contact blocks provide up to 4 positively operated switch contacts. An optional Explosion Proof ATEX certified contact block version is available for potentially explosive areas.

- Heavy duty rugged die-cast metal body (painted yellow) or Stainless Steel 316 (Food Industry compatible).
- Conformance to ISO13850, EN60947-5-1 and EN60947-5-5.
- LED visual indication of status.
- All internal and external screws and fittings are Stainless Steel.
- Enclosure protection to IP67 - washdown suitable.
- Easy to wire offering up to 4 conduit entry points for flexibility.

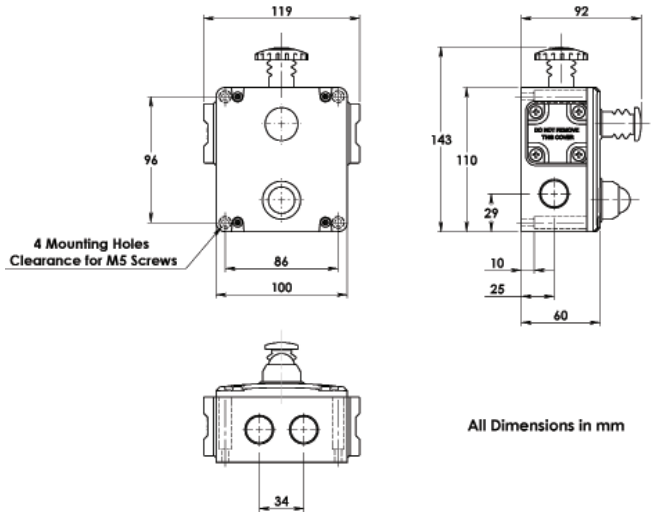
Type: GLES *not EX

Type: GLES-SS *not EX

Explosion Proof versions

Type: GLES-Ex **Type: GLES-SS-Ex**

DIMENSIONS:



All Dimensions in mm

SALES NUMBER	TYPE	CONDUIT ENTRY	CONTACTS
146001	GLES	M20	4NC 2NO
146002	GLES	1/2"NPT	4NC 2NO
146003	GLES-Ex	3m 4 core Ex	1NC 1NO
146004	GLES-Ex	3m 8 core Ex	3NC 1NO
146005	GLES-Ex	3m 4 core Ex	2NC
146006	GLES-Ex	3m 8 core Ex	2NC 2NO
147001	GLES-SS	M20	4NC 2NO
147002	GLES-SS	1/2"NPT	4NC 2NO
147003	GLES-SS-Ex	3m 4 core Ex	1NC 1NO
147004	GLES-SS-Ex	3m 8 core Ex	3NC 1NO
147005	GLES-SS-Ex	3m 4 core Ex	2NC
147006	GLES-SS-Ex	3m 8 core Ex	2NC 2NO

For LED Models add Voltage Code to Sales Number
A - 24Vdc B - 110Vac C - 230Vac (i.e. 146001 with 24Vdc LED: Order 146001-A

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 146001-A-GC

EX CLASSIFICATION:

Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

S/STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

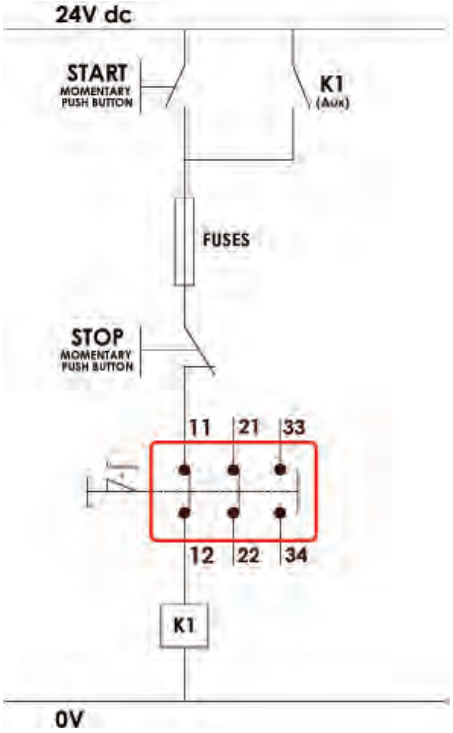
IDEM recommend using our Stainless Steel 316 Gland with this switch.

TECHNICAL SPECIFICATIONS:

Standards:	EN60947-5-1 EN60947-5-5 EN62061 UL508 ISO13850 ISO13849-1
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	1.5 x 10^6 operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 214 years
Enclosure/Cover Material	Die-cast (painted yellow) or Stainless Steel 316
IP Rating	IP67 IP69K
Mounting	4 x M5
Mounting Position	Any
Conduit Entries	4 x M20 or 4 x 1/2" NPT (by Sales Number)
Tongue Settings	Mounting M5 4.0Nm Lid T20 Torx M4 1.5Nm Terminals 1.0Nm
Ambient Temperature	-25C +80C
Vibration Resistance	10-500Hz 0.35mm
Shock Resistance	11ms 15g
Weight	765g to 2050g
EX Contact Type	230V 4A (4-core) 230V 2.5A (8-core)

Application Information **Emergency Stop Switches**

APPLICATION 1:



Application 1: Single Channel E Stop and Stop/Start Circuit.

Used in applications with a lower risk, pressing the E Stop will stop the machine. The E Stop will latch and needs re-setting before the machine Start Button can be effective.

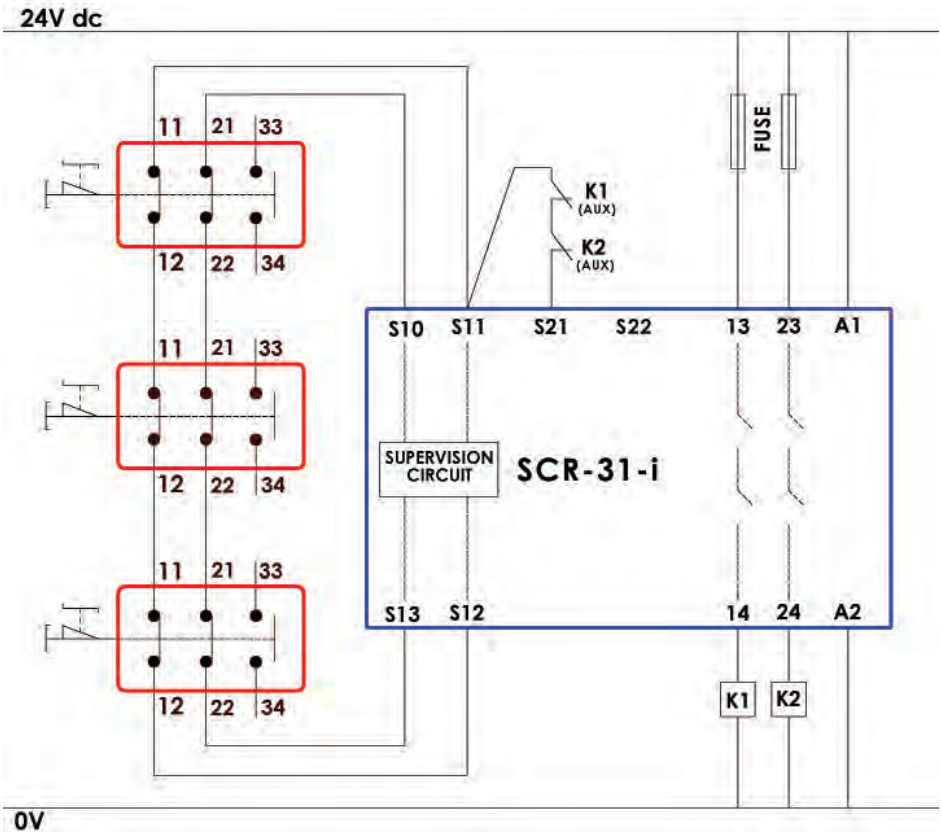
Pressing the Start button will cause the machine contactor K1 to close and latch via its own auxiliary contacts (K1 (Aux)).

No wiring cross monitoring, all wiring should be protected and the components chosen for correct durability and ratings.

Regular checks of the Safety Function is required.

Stop Category 0 EN60204-1

APPLICATION 2:



Application 2: Dual Channel E-Stops in Series with wiring cross-monitoring and auto reset.

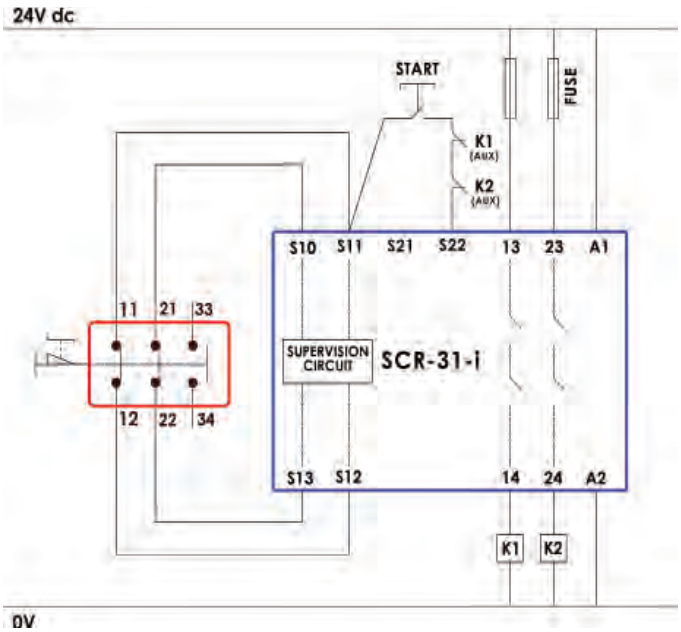
Multiple E-Stop switches connected dual circuit to a Safety Relay.

Generally used on machines with a medium risk. Activating any E Stop Switch will open the outputs from contactors K1 and K2 and stop the machine. The E Stop switch will latch. Re-setting the E Stop switch will enable the machine contactors K1 and K2 to close providing the feedback circuit check from both contactors (K1 K2 Aux) is closed. Due to series wiring and multiple devices, not all contact or wiring faults will be detected before the next start up.
Regular checks of the Safety Function is required.

Stop Category 0 EN60204-1

Application Information **Emergency Stop Switches**

APPLICATION 3:



Application 3: Dual Channel E Stop with wiring cross-monitoring and external manual reset.

Single E-Stop switch connected dual circuit to a Safety Relay.

Generally used on machines with a high risk.

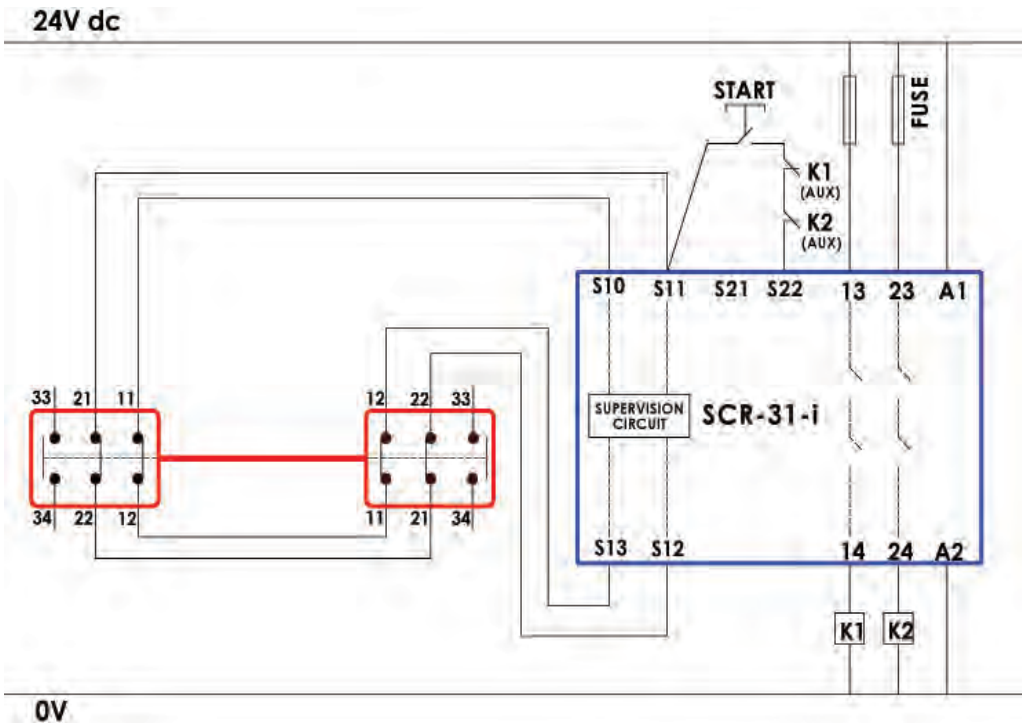
Activating the E Stop Switch will open contactors K1 and K2 and stop the machine.

The E Stop switch will latch and need to be reset before the Start Button can be effective.

Pressing the Start Button will cause the machine contactors K1 and K2 to close providing the feedback circuit check from both contactors (K1 K2 Aux) is closed. A failure of one of the switching elements of the E Stop switch or wiring short circuit will be detected at least before the next start up.

Stop Category 0 EN60204-1

APPLICATION 4:



Application 4: Dual Channel Rope Pull E-Stop Switches with wiring cross-monitoring and external manual reset.

Generally used on conveyor applications with a high risk.

Activating the Rope Pull Switch will open the Safety Relay outputs and stop the machine.

The Rope Pull Switches, (one or both}, will latch and need re-setting before the Start Button can be effective.

Pressing the Start button will cause the machine contactors K1 and K2 to close providing the feedback circuit check from both contactors (K1 K2 Aux) is closed. A failure of one of the switching elements of the E-Stop switch or wiring short circuit will be detected at least before the next start up.

Stop Category 0 EN60204-1

Safety Limit Switches **Type: HLM (Die-Cast)**

APPLICATIONS:

IDEM's HLM range of heavy duty Die Cast Safety Limit Switches have been designed to be mounted for position sensing of moving applications e.g. guard doors, conveyors, machine beds and elevators. They are available with an extensive range of actuator heads and can be supplied with either slow break or snap action contacts.

FEATURES:

- Heavy duty die cast bodies (painted red)
- Positive opening NC safety contact to EN60947-5-1
- High mechanical life over 5,000,000 cycles
- Industry standard mounting to EN50041
- Large choice of actuator heads available

OPERATION:

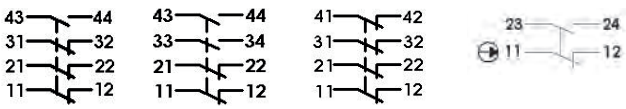
Operation of IDEM Safety Limit Switches is achieved by a sliding actuation of the moving object to cause deflection of the switch plungers, rollers or levers.

For safety applications it is important that the moving object does not pass completely over the switch actuators so as to either cause damage to the actuator or allow it to return to its original position.

HLM-RP | HLM-SRL | HLM-PP | HLM-AL | HLM-ARL | HLM-SL | HLM-TSL

CONTACT BLOCKS:

Contact blocks provide positively operated safety contacts to EN60947-5-1 with optional Explosion Proof versions available.

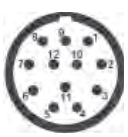


EXPLOSION PROOF MODELS ALSO AVAILABLE.
SEE MODELS/PART NUMBERS MARKED WITH EX

EX CLASSIFICATION:

Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db



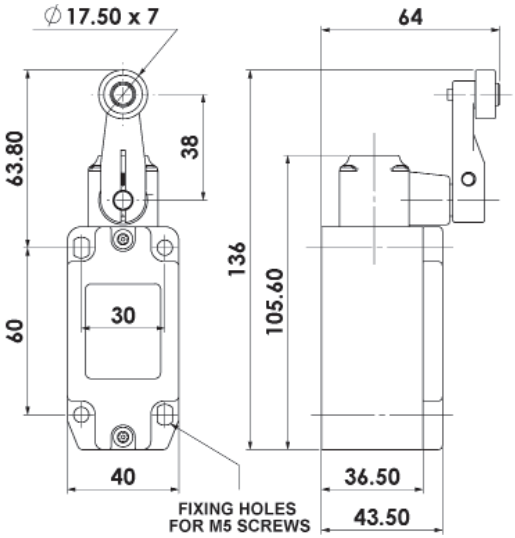
Quick Connect (QC) M23 12 Way Male (connector length 26mm) (pin view from switch)	Switch Circuit
1 3	11/12
4 6	21/22
7 8	33/34 or 31/32
9 10	41/42 or 43/44
12	Earth

TECHNICAL SPECIFICATIONS:

Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	$2.5x10^6$ operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data - Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Positive Opening Operation	NC contacts
Utilisation Category	AC15 A300 240V 3A
Minimum Current	5V 5mA dc
Thermal Current (Ith)	10A
Rated Insulation Voltage	300Vac
Rated Impulse Withstand	2500Vac
Maximum Switching Speed	250mm/sec
Maximum Switching Frequency	6,000 operations per hour
Case Material	Die cast metal - painted red
Enclosure Protection	IP67
Operating Temperature	-25C to +80C
Mechanical Life Expectancy	$5x10^{-6}$ cycle min.
Electrical Life Expectancy	100,000 cycle min (at full load)
Vibration	IEC68-2-6 10-55Hz 0.35mm
Conductor Size	$1.5mm^2$
Fixing	M5 bolts

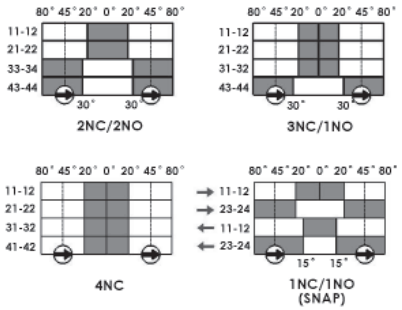
Safety Limit Switches **Type: HLM (Die-Cast)**

HLM SHORT ROLLER LEVER:

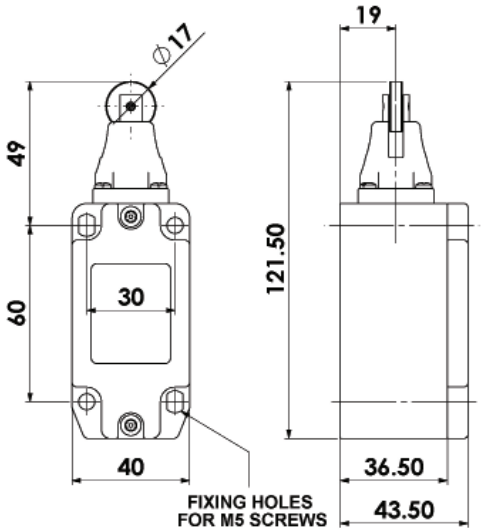


HLM SHORT ROLLER LEVER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174001	174002	174003
3NC 1NO	174004	174005	174006
4NC	174007	174008	174009
1NC 1NO Snap	174010	174011	174012
1NC 1NO EX	174013	3m 4 core Ex	
2NC EX	174014	3m 4 core Ex	
2NC 2NO EX	174015	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174001-GC

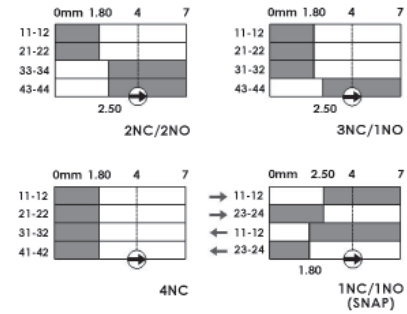


HLM ROLLER PLUNGER:

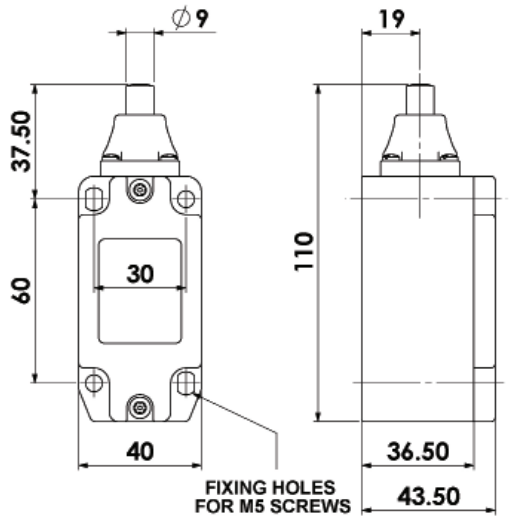


HLM ROLLER PLUNGER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174051	174052	174053
3NC 1NO	174054	174055	174056
4NC	174057	174058	174059
1NC 1NO Snap	174060	174061	174062
1NC 1NO EX	174063	3m 4 core Ex	
2NC EX	174064	3m 4 core Ex	
2NC 2NO EX	174065	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174051-GC

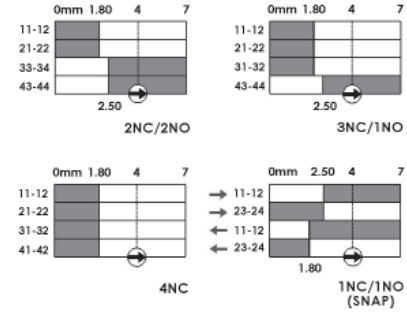


HLM PIN PLUNGER:



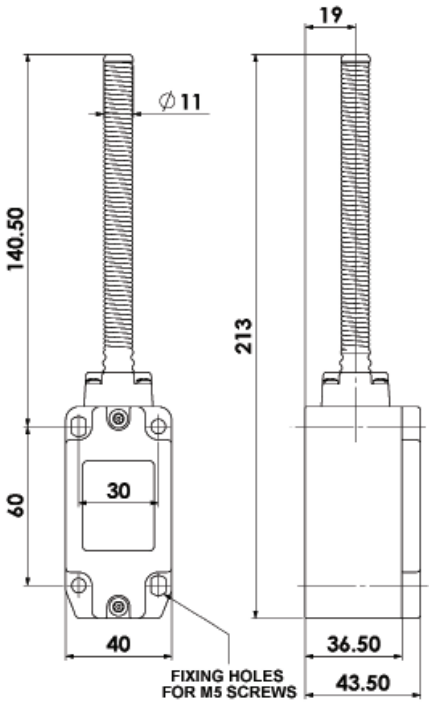
HLM PIN PLUNGER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174101	174102	174103
3NC 1NO	174104	174105	174106
4NC	174107	174108	174109
1NC 1NO Snap	174110	174111	174112
1NC 1NO EX	174113	3m 4 core Ex	
2NC EX	174114	3m 4 core Ex	
2NC 2NO EX	174115	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174101-GC



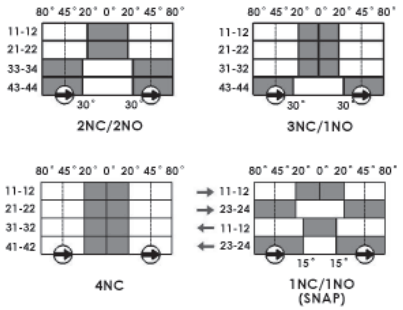
Safety Limit Switches **Type: HLM (Die-Cast)**

HLM SPRING LEVER:

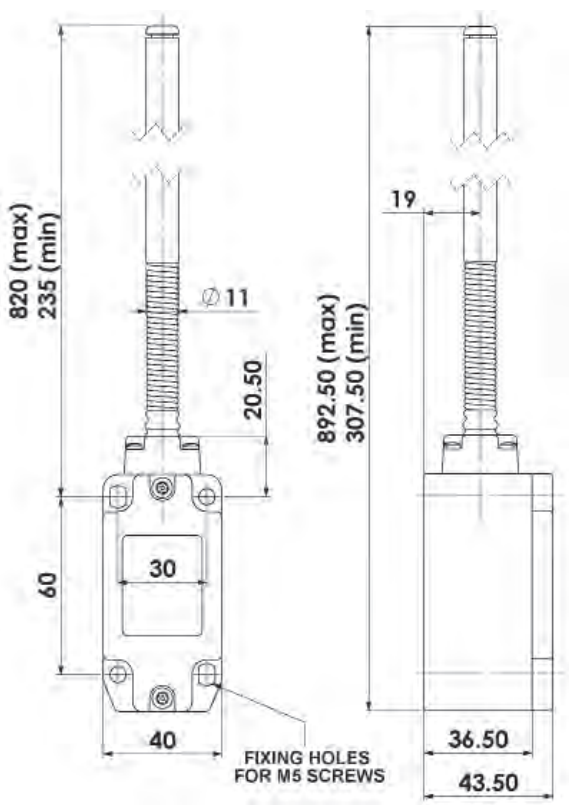


HLM SPRING LEVER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174151	174152	174153
3NC 1NO	174154	174155	174156
4NC	174157	174158	174159
1NC 1NO Snap	174160	174161	174162
1NC 1NO EX	174163	3m 4 core Ex	
2NC EX	174164	3m 4 core Ex	
2NC 2NO EX	174165	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174151-GC

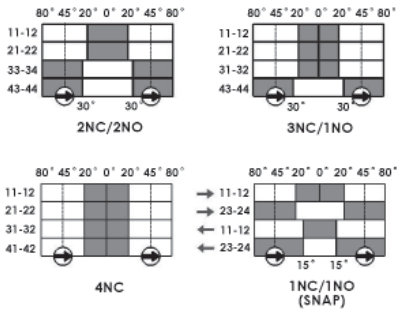


HLM TELESCOPIC SPRING LEVER:



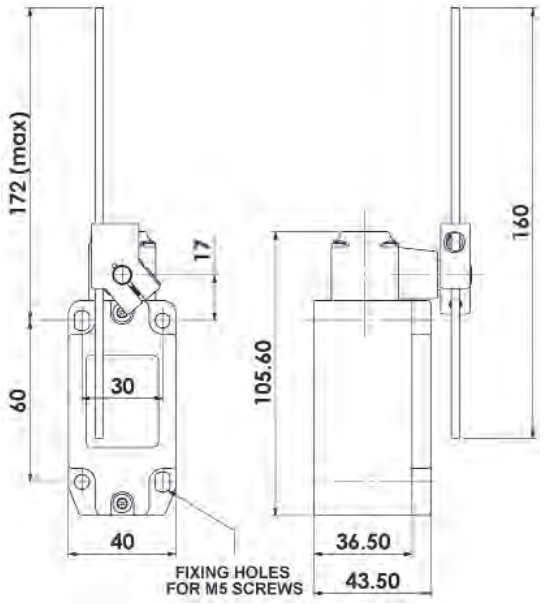
HLM TELESCOPIC SPRING LEVER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174201	174202	174203
3NC 1NO	174204	174205	174206
4NC	174207	174208	174209
1NC 1NO Snap	174210	174211	174212
1NC 1NO EX	174213	3m 4 core Ex	
2NC EX	174214	3m 4 core Ex	
2NC 2NO EX	174215	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174201-GC



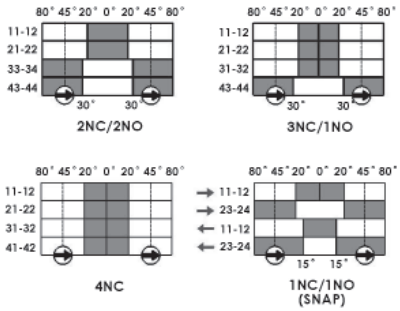
Safety Limit Switches **Type: HLM (Die-Cast)**

HLM LEVER ARM

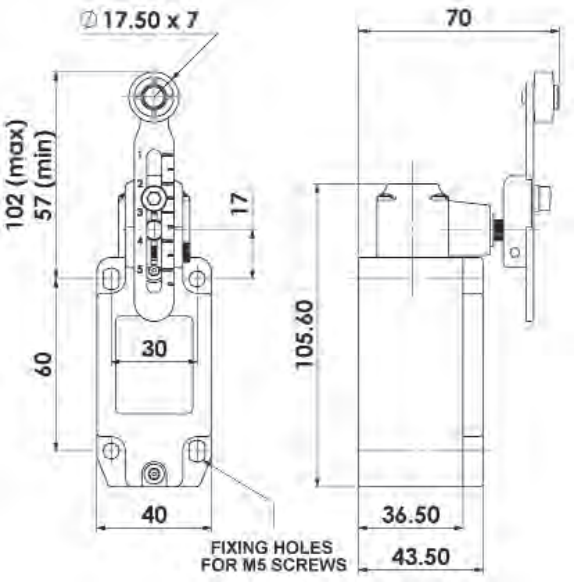


HLM LEVER ARM	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174251	174252	174253
3NC 1NO	174254	174255	174256
4NC	174257	174258	174259
1NC 1NO Snap	174260	174261	174262
1NC 1NO EX	174263	3m 4 core Ex	
2NC EX	174264	3m 4 core Ex	
2NC 2NO EX	174265	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174151-GC

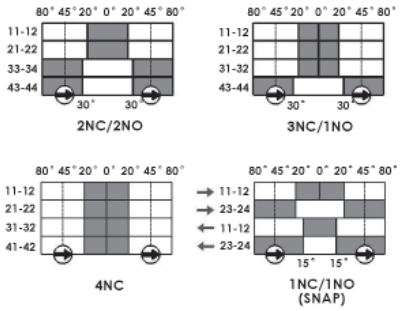


HLM ADJUSTABLE ROLLER LEVER:



HLM ADJUSTABLE ROLLER LEVER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	174301	174302	174303
3NC 1NO	174304	174305	174306
4NC	174307	174308	174309
1NC 1NO Snap	174310	174311	174312
1NC 1NO EX	174313	3m 4 core Ex	
2NC EX	174314	3m 4 core Ex	
2NC 2NO EX	174315	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174201-GC



Safety Limit Switches **Type: HLM-SS (S/Steel 316)**

APPLICATIONS:

IDEM's HLM-SS range of heavy duty Stainless Steel 316 Safety Limit Switches have been designed to be mounted for position sensing of moving applications e.g. guard doors, conveyors, machine beds and elevators. They are available with an extensive range of actuator heads and can be supplied with either slow break or snap action contacts. The full HLM-SS range is suitable for high temperature wash down at high temperature with detergent .

FEATURES:

- Heavy duty Stainless Steel 316 bodies
- Positive opening NC safety contact to EN60947-5-1
- High mechanical life over 5,000,000 cycles
- Industry standard mounting to EN50041
- Large choice of actuator heads available

OPERATION:

Operation of IDEM Safety Limit Switches is achieved by a sliding actuation of the moving object to cause deflection of the switch plungers, rollers or levers.

For safety applications it is important that the moving object does not pass completely over the switch actuators so as to either cause damage to the actuator or allow it to return to its original position.

HLM-SS-RP

HLM-SS-SRL

HLM-SS-PP

HLM-SS-AL

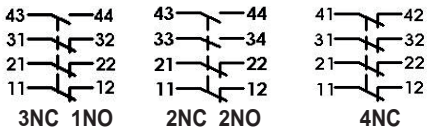
HLM-SS-ARL

HLM-SS-SL

HLM-SS-TSL

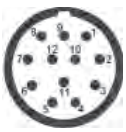
CONTACT BLOCKS:

Contact blocks provide positively operated safety contacts to EN60947-5-1 with optional Explosion Proof versions available.



S/STEEL 316 GLAND	SALES NUMBER
M20	140120
1/2" NPT	140121

IDEM recommend using our Stainless Steel 316 Gland with this switch.



Quick Connect (QC) M23 12 Way Male (connector length 26mm) (pin view from switch)	Switch Circuit
1 3	11/12
4 6	21/22
7 8	33/34 or 31/32
9 10	41/42 or 43/44
12	Earth

EX CLASSIFICATION:

Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

EXPLOSION PROOF MODELS ALSO AVAILABLE.
SEE MODELS/PART NUMBERS MARKED WITH EX

TECHNICAL SPECIFICATIONS:

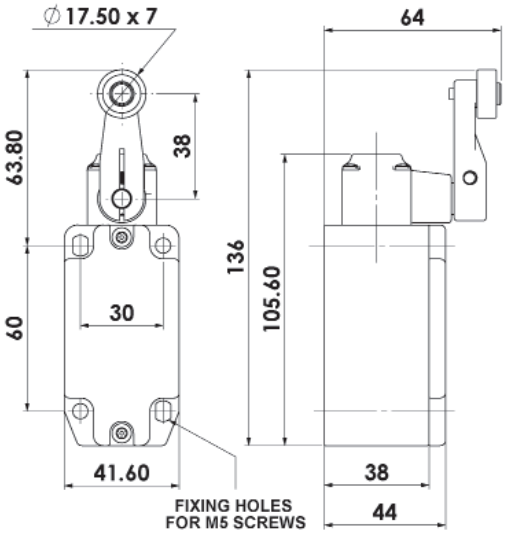
Standards: ISO14119 EN60947-5-1 EN60204-1
ISO13849-1 EN62061 UL508

Safety Classification and Reliability Data:

Mechanical Reliability B10d	$2.5x10^6$ operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data - Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Positive Opening Operation	NC contacts
Utilisation Category	AC15 A300 240V 3A
Minimum Current	5V 5mA dc
Thermal Current (Ith)	10A
Rated Insulation Voltage	300Vac
Rated Impulse Withstand	2500Vac
Maximum Switching Speed	250mm/sec
Maximum Switching Frequency	6,000 operations per hour
Case Material	Stainless Steel 316
Enclosure Protection	IP67/IP69K
Operating Temperature	-25C to +80C
Mechanical Life Expectancy	$5x10^{-6}$ cycle min.
Electrical Life Expectancy	100,000 cycle min (at full load)
Vibration	IEC68-2-6 10-55Hz 0.35mm
Conductor Size	$1.5mm^2$
Fixing	M5 bolts

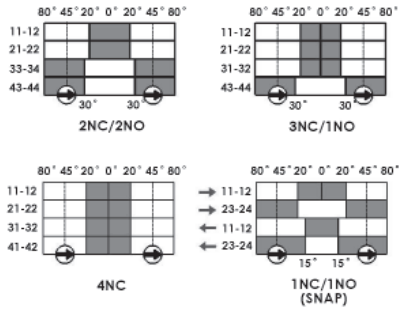
Safety Limit Switches **Type: HLM-SS (S/Steel 316)**

HLM-SS SHORT ROLLER LEVER:

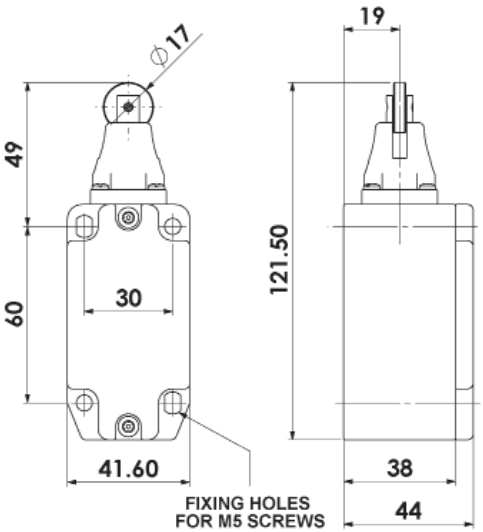


HLM-SS SHORT ROLLER LEVER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175001	175002	175003
3NC 1NO	175004	175005	175006
4NC	175007	175008	175009
1NC 1NO Snap	175010	175011	175012
1NC 1NO EX	175013	3m 4 core Ex	
2NC EX	175014	3m 4 core Ex	
2NC 2NO EX	175015	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 175001-GC

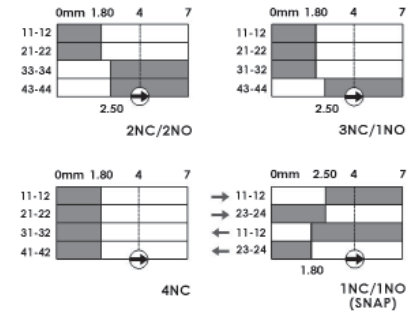


HLM-SS ROLLER PLUNGER:

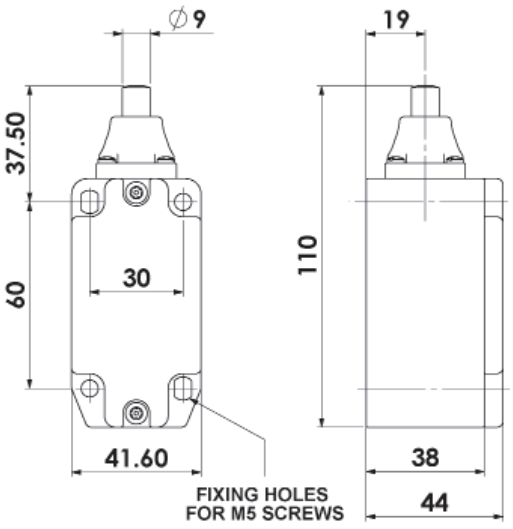


HLM-SS ROLLER PLUNGER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175051	175052	175053
3NC 1NO	175054	175055	175056
4NC	175057	175058	175059
1NC 1NO Snap	175060	175061	175062
1NC 1NO EX	175063	3m 4 core Ex	
2NC EX	175064	3m 4 core Ex	
2NC 2NO EX	175065	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 175051-GC

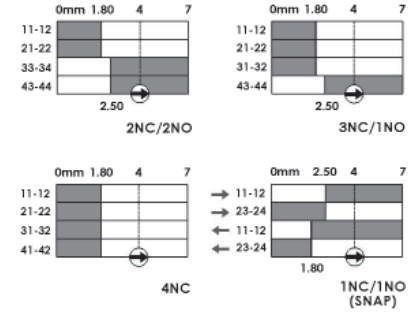


HLM-SS PIN PLUNGER:



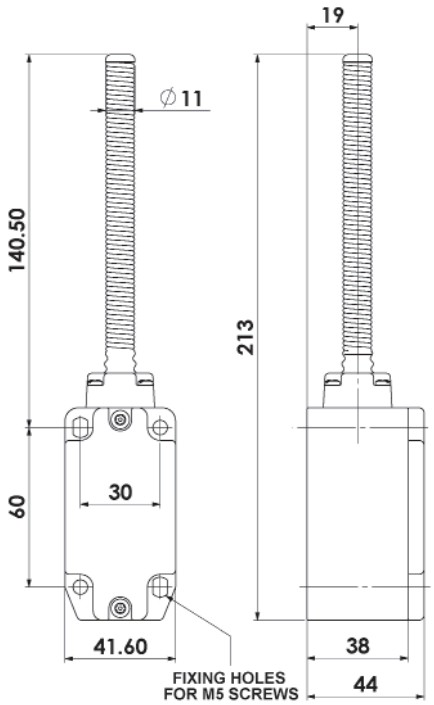
HLM-SS PIN PLUNGER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175101	175102	175103
3NC 1NO	175104	175105	175106
4NC	175107	175108	175109
1NC 1NO Snap	175110	175111	175112
1NC 1NO EX	175113	3m 4 core Ex	
2NC EX	175114	3m 4 core Ex	
2NC 2NO EX	175115	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 175101-GC



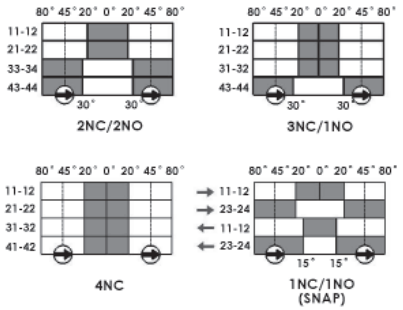
Safety Limit Switches **Type: HLM-SS (S/Steel 316)**

HLM-SS SPRING LEVER:

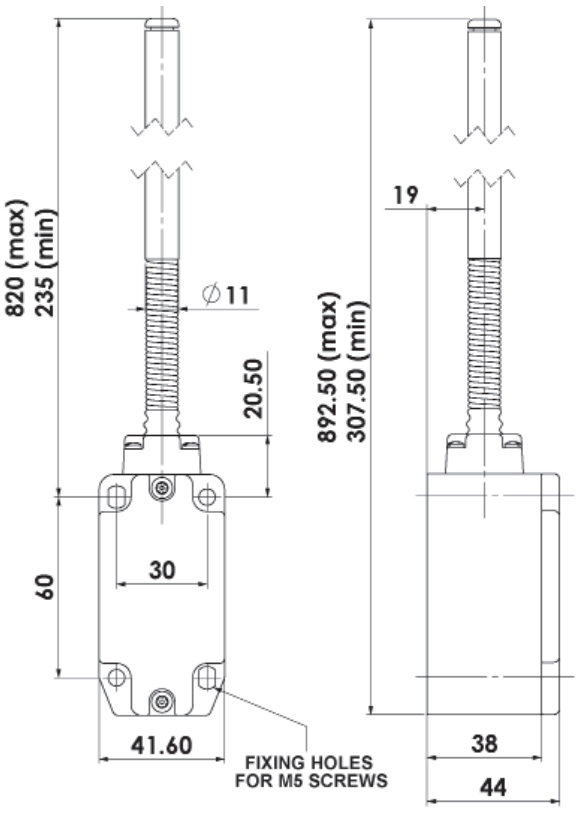


HLM-SS SPRING LEVER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175151	175152	175153
3NC 1NO	175154	175155	175156
4NC	175157	175158	175159
1NC 1NO Snap	175160	175161	175162
1NC 1NO EX	175163	3m 4 core Ex	
2NC EX	175164	3m 4 core Ex	
2NC 2NO EX	175165	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 175151-GC

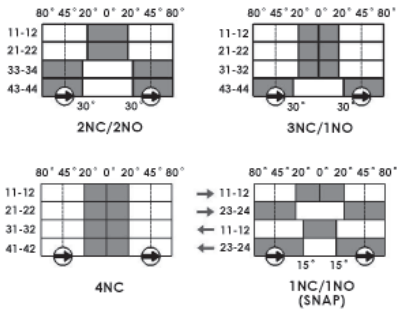


HLM-SS TELESCOPIC SPRING LEVER:



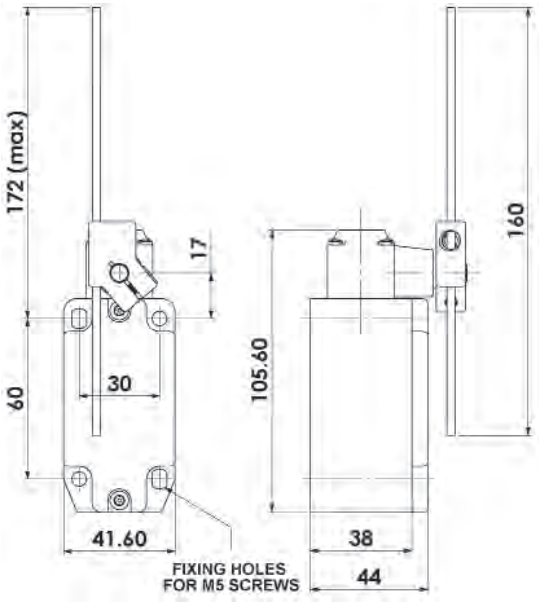
HLM-SS TELESCOPIC SPRING LEVER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175201	175202	175203
3NC 1NO	175204	175205	175206
4NC	175207	175208	175209
1NC 1NO Snap	175210	175211	175212
1NC 1NO EX	175213	3m 4 core Ex	
2NC EX	175214	3m 4 core Ex	
2NC 2NO EX	175215	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 175201-GC



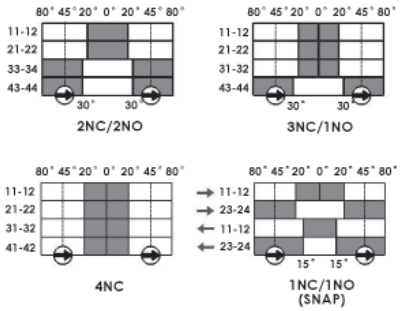
Safety Limit Switches **Type: HLM-SS (S/Steel 316)**

HLM-SS LEVER ARM

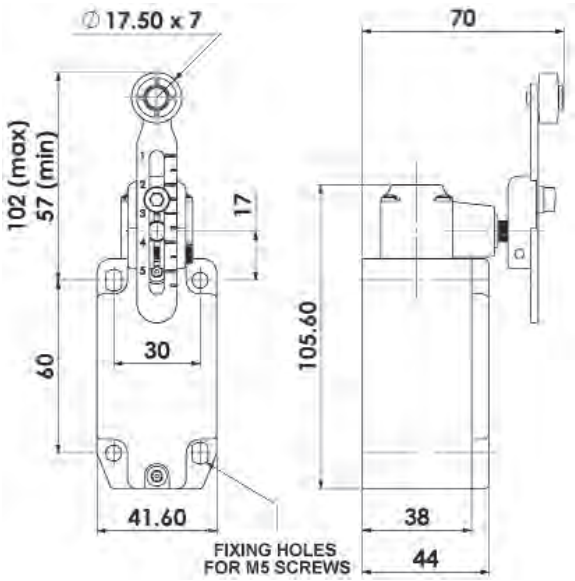


HLM-SS LEVER ARM	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175251	175252	175253
3NC 1NO	175254	175255	175256
4NC	175257	175258	175259
1NC 1NO Snap	175260	175261	175262
1NC 1NO EX	175263	3m 4 core Ex	
2NC EX	175264	3m 4 core Ex	
2NC 2NO EX	175265	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174151-GC

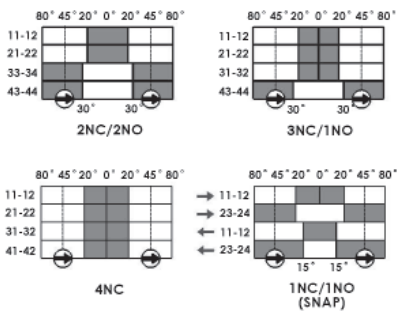


HLM-SS ADJUSTABLE ROLLER LEVER:



HLM-SS ADJUSTABLE ROLLER LEVER	SALES NUMBERS		
	M20	1/2"NPT	QC M23
2NC 2NO	175301	175302	175303
3NC 1NO	175304	175305	175306
4NC	175307	175308	175309
1NC 1NO Snap	175310	175311	175312
1NC 1NO EX	175313	3m 4 core Ex	
2NC EX	175314	3m 4 core Ex	
2NC 2NO EX	175315	3m 8 core Ex	

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 174201-GC



Safety Limit Switches **Type: LSPS (Plastic Body)**

APPLICATIONS:

IDEM's extensive range of LSPS Safety Limit Switches have been designed to be mounted for position sensing of moving applications e.g. guard doors, conveyors, machine beds and elevators. They are available with linear plungers, rotary levers, roller plungers or spring levers and are available with either slow break or snap action contacts.

FEATURES:

- Positive opening safety contact to EN60947-5-1
- High mechanical life over 5,000,000 cycles
- Enclosure protection to IP67 - suitable for washdown
- Extensive choice of 11 actuator heads - linear, rotary, roller or flexible actions
- Head position adjustment any of 4 positions
- Conduit entries available: M20, 1/2"NPT or Quick Connect option

OPERATION:

Operation of LSPS Safety Limit Switches is achieved by a sliding actuation of the moving object to cause deflection of the switch plungers, rollers, levers or flexible actuators.

For safety applications it is important that the moving object does not pass completely over the switch actuators so as to either cause damage to the actuator or allow it to return to its original position.

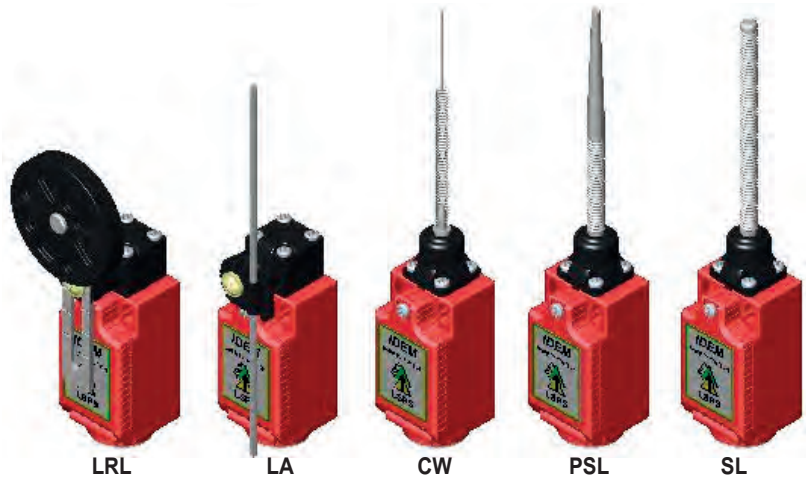
PP RP HL LHL RL ARL

CONTACT BLOCKS:

2NC	**1NO**	Slow Break
3NC		Slow Break
1NC	**1NO**	Snap Action

CONDUIT ENTRY:

M	M20 version
N	1/2" NPT version
Q	Quick Connect version



LRL LA CW PSL SL

ACTUATOR TYPES:

PP	Pin Plunger
RP	Roller Plunger
HL	Hinge Lever
LHL	Long Hinge Lever
RL	Roller Lever
ARL	Adjustable Roller Lever
LRL	Large Roller Lever
LA	Lever Arm
CW	Cats Whisker
PSL	Plastic Spring Lever
SL	Spring Lever

LSPS (all models) QUICK CONNECT:

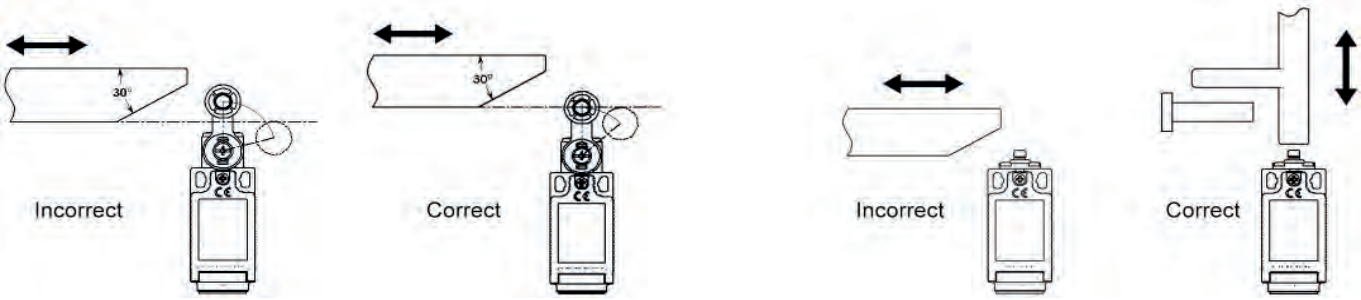
Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) (pin view from switch)	Switch Circuit
1 7	11/12
6 5	21/22
4 3	33/34 or 31/32

Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 171001-GC

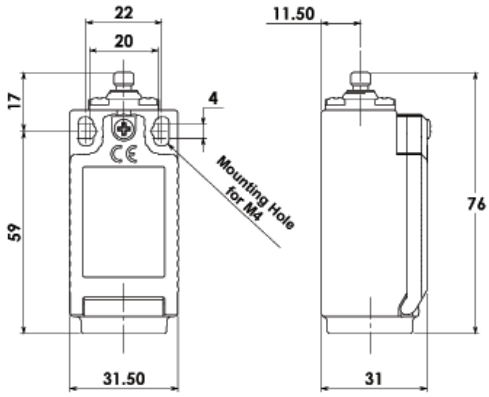
Standards:	ISO14119 EN60947-5-1 EN60204-1 ISO13849-1 EN62061 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	$2.5x10^6$ operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data - Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilisation Category	AC15 A300 240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage	300Vac
Rated Impulse Withstand	2500Vac
Insulation Resistance	100MΩ min.
Maximum Switching Speed	250mm/sec
Case Material	UL approved glass-filled polyester
Roller Material	Various polyesters
Enclosure Protection	IP67
Operating Temperature	-25C to +80C
Mechanical Life Expectancy	$5x10^{-6}$ cycle min.
Vibration	IEC68-2-6 10-55Hz 0.35mm 1octave/min
Conduit Entry	M20 or 1.2"NPT

Safety Limit Switches **Type: LSPS (Plastic Body)**

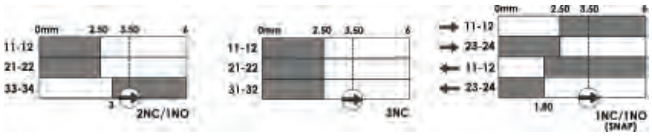
OPERATION:



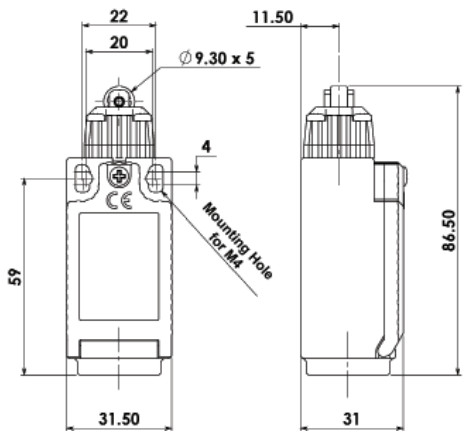
LSPS PIN PLUNGER:



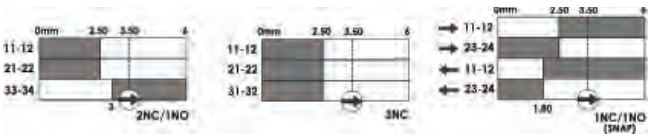
PIN PLUNGER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171001	171002	171003
3NC	171004	171005	171006
1NC 1NO Snap	171007	171008	171009



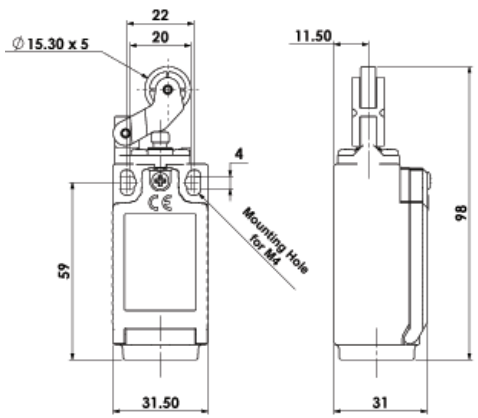
LSPS ROLLER PLUNGER:



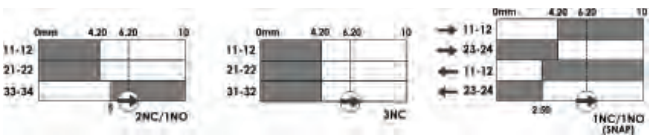
ROLLER PLUNGER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171010	171011	171012
3NC	171013	171014	171015
1NC 1NO Snap	171016	171017	171018



LSPS HINGE LEVER:



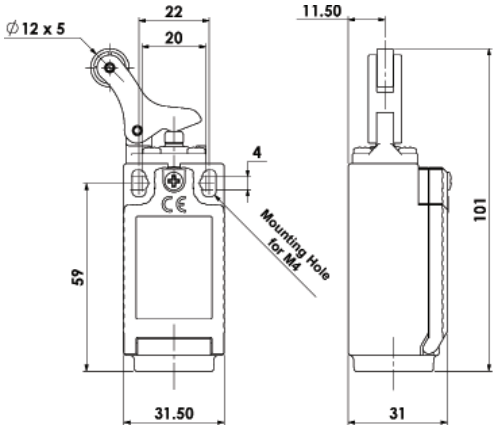
HINGE LEVER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171019	171020	171021
3NC	171022	171023	171024
1NC 1NO Snap	171025	171026	171027



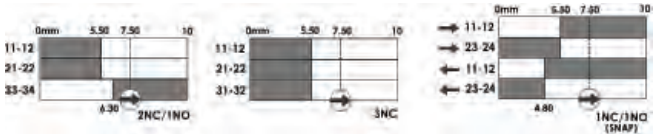
Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 171001-GC

Safety Limit Switches **Type: LSPS (Plastic Body)**

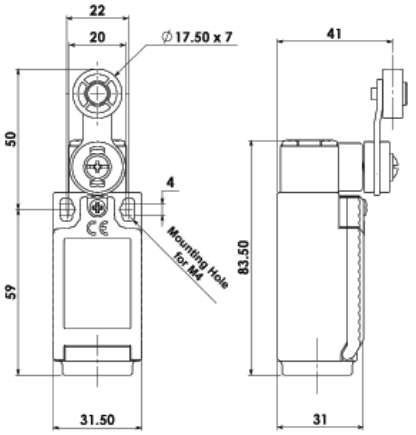
LSPS LONG HINGE LEVER:



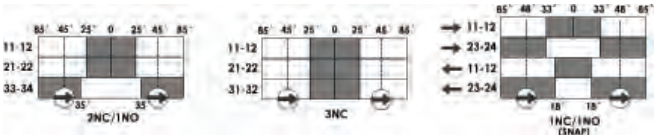
LONG HINGE LEVER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171028	171029	171030
3NC	171031	171032	171033
1NC 1NO Snap	171034	171035	171036



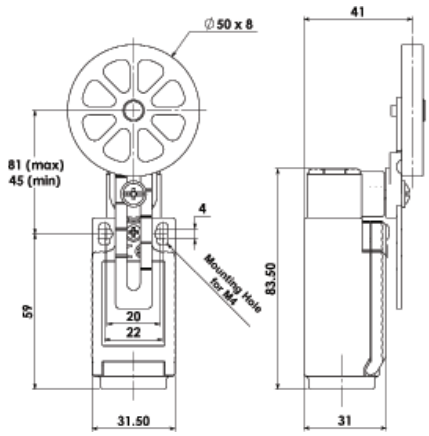
LSPS ROLLER LEVER:



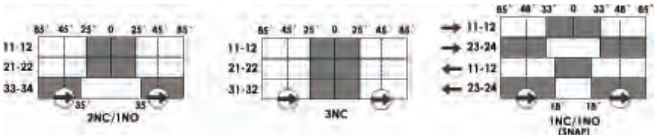
ROLLER LEVER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171037	171038	171039
3NC	171040	171041	171042
1NC 1NO Snap	171043	171044	171045



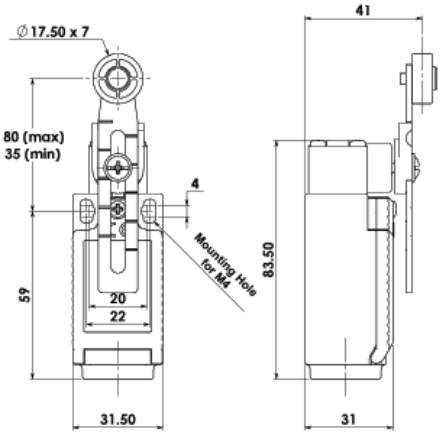
LSPS LARGE ROLLER LEVER:



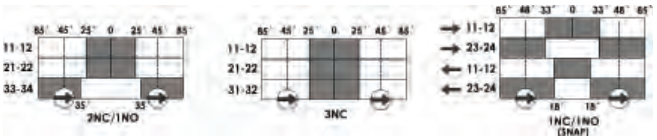
LARGE ROLLER LEVER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171046	171047	171048
3NC	171049	171050	171051
1NC 1NO Snap	171052	171053	171054



LSPS ADJUSTABLE ROLLER LEVER:



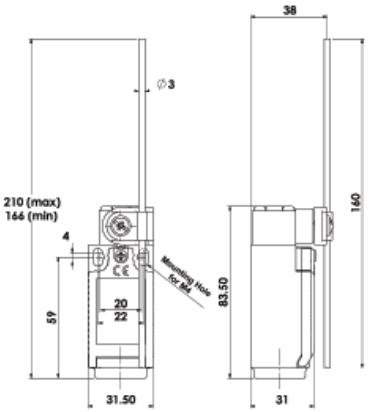
ADJUSTABLE ROLLER LEVER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171055	171056	171057
3NC	171058	171059	171060
1NC 1NO Snap	171061	171062	171063



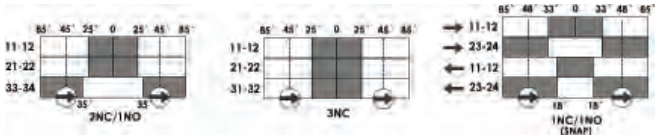
Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 171028-GC

Safety Limit Switches **Type: LSPS (Plastic Body)**

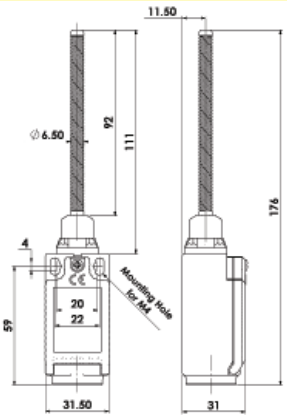
LSPS LEVER ARM:



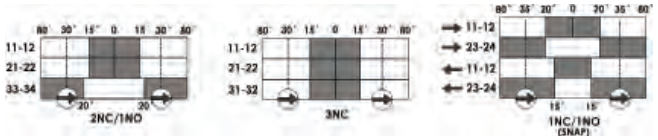
LEVER ARM	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171064	171065	171066
3NC	171067	171068	171069
1NC 1NO Snap	171070	171071	171072



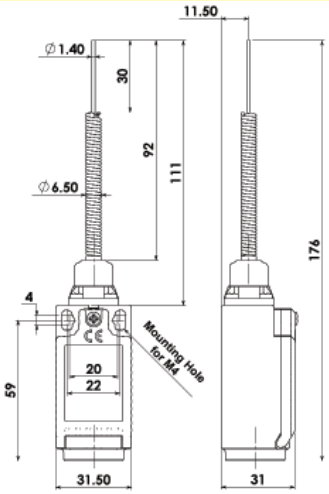
LSPS SPRING LEVER:



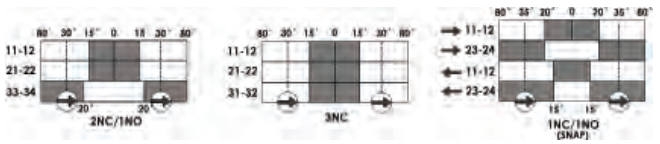
SPRING LEVER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171091	171092	171093
3NC	171094	171095	171096
1NC 1NO Snap	171097	171098	171099



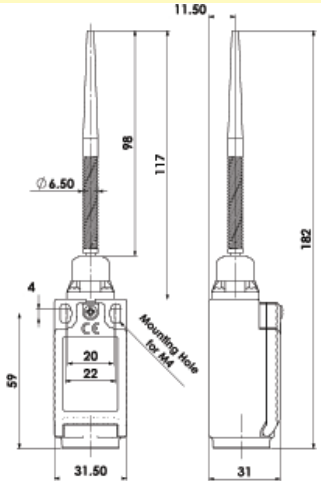
LSPS CATS WHISKER:



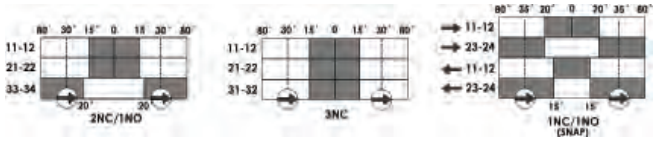
CATS WHISKER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171073	171074	171075
3NC	171076	171077	171078
1NC 1NO Snap	171079	171080	171081



LSPS PLASTIC SPRING LEVER:



PLASTIC SPRING LEVER	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	171082	171083	171084
3NC	171085	171086	171087
1NC 1NO Snap	171088	171089	171090



Gold Plated Contacts available for low power circuits (5V 5mA).
Ordering: Add GC to Part Number e.g. 171064-GC

Safety Limit Switches **Type: LSPS-R (Plastic Body with Reset)**

PP-R RP-R HL-R LHL-R RL-R ARL-R LRL-R LA-R

FEATURES:

- Lockable head mechanism
- Requires manual reset after the lock has been engaged
- Positive opening safety contacts to EN60947-5-1
- Extensive choice of 8 actuator heads - linear or rotary actions
- Head position adjustment any of 4 positions
- Enclosure protection to IP67 - suitable for washdown
- Conduit entries: M20, 1/2"NPT or QC (Quick Connect)

ACTUATOR TYPES:

PP-R	Pin Plunger
RP-R	Roller Plunger
HL-R	Hinge Lever
LHL-R	Long Hinge Lever
RL-R	Roller Lever
ARL-R	Adjustable Roller Lever
LRL-R	Large Roller Lever
LA-R	Lever Arm

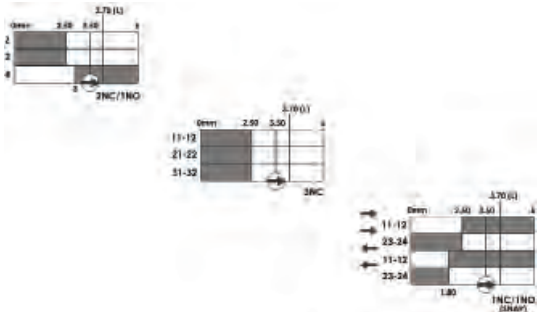
CONTACT BLOCKS:

2NC	**1NO**	Slow Break
3NC		Slow Break
1NC	**1NO**	Snap Action

CONDUIT ENTRY:

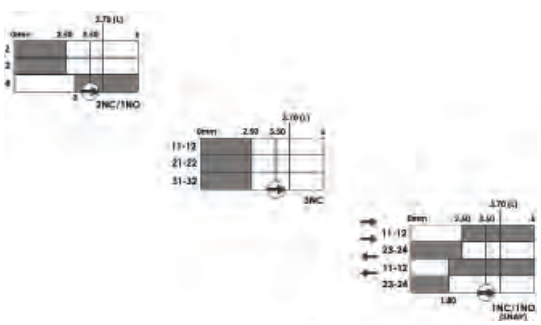
M	M20 version
N	1/2" NPT version
Q	Quick Connect version

LSPS-R PIN PLUNGER WITH RESET:



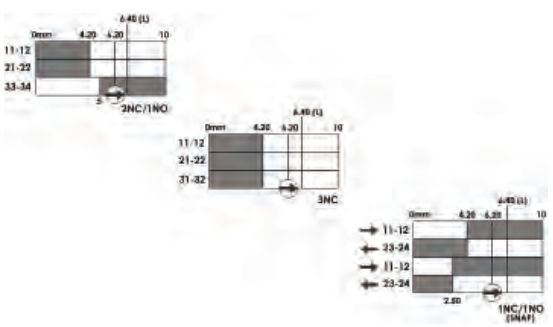
PIN PLUNGER WITH RESET	SALES NUMBERS		
Contacts	**M20**	**1/2"NPT**	**QC12**
2NC 1NO	173001	173002	173003
3NC	173004	173005	173006
1NC 1NO Snap	173007	173008	173009

LSPS-R ROLLER PLUNGER WITH RESET:



ROLLER PLUNGER WITH RESET	SALES NUMBERS		
Contacts	**M20**	**1/2"NPT**	**QC12**
2NC 1NO	173010	173011	173012
3NC	173013	173014	173015
1NC 1NO Snap	173016	173017	173018

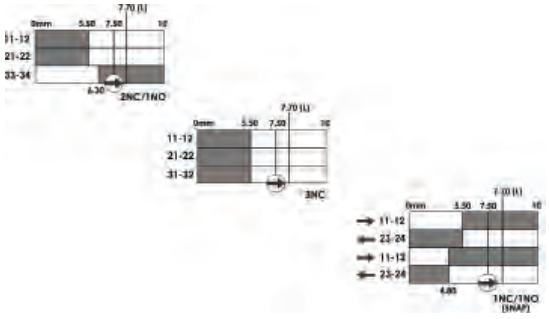
LSPS-R HINGE LEVER WITH RESET:



HINGE LEVER WITH RESET	SALES NUMBERS		
Contacts	**M20**	**1/2"NPT**	**QC12**
2NC 1NO	173019	173020	173021
3NC	173022	173023	173024
1NC 1NO Snap	173025	173026	173027

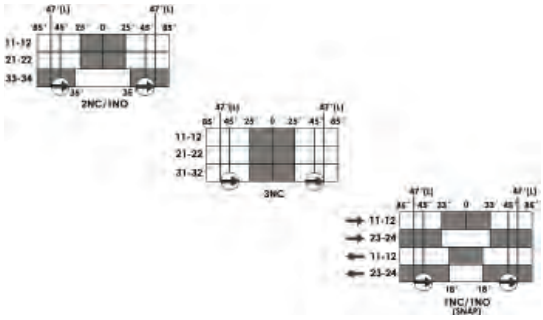
Safety Limit Switches **Type: LSPS-R (Plastic Body with Reset)**

LSPS-R LONG HINGE LEVER WITH RESET:



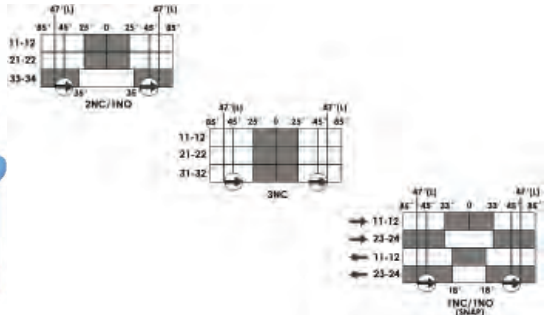
LONG HINGE LEVER WITH RESET	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	173028	173029	173030
3NC	173031	173032	173033
1NC 1NO Snap	173034	173035	173036

LSPS-R ROLLER LEVER WITH RESET:



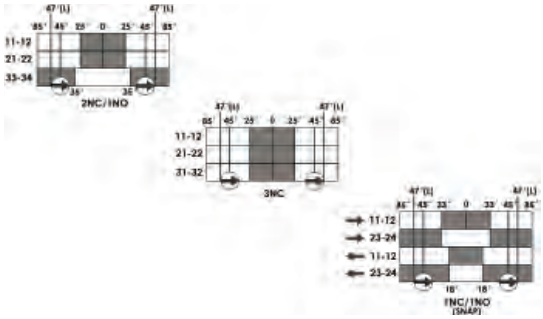
ROLLER LEVER WITH RESET	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	173037	173038	173039
3NC	173040	173041	173042
1NC 1NO Snap	173043	173044	173045

LSPS-R LARGE ROLLER LEVER WITH RESET:



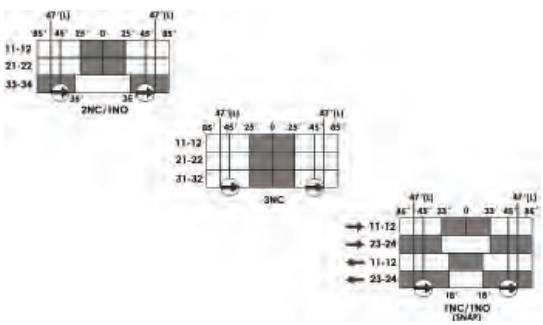
LARGE ROLLER LEVER RESET	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	173046	173047	173048
3NC	173049	173050	173051
1NC 1NO Snap	173052	173053	173054

LSPS-R ADJUSTABLE ROLLER LEVER WITH RESET:



ADJUSTABLE ROLLER LEVER RESET	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	173055	173056	173057
3NC	173058	173059	173060
1NC 1NO Snap	173061	173062	173063

LSPS-R LEVER ARM WITH RESET:

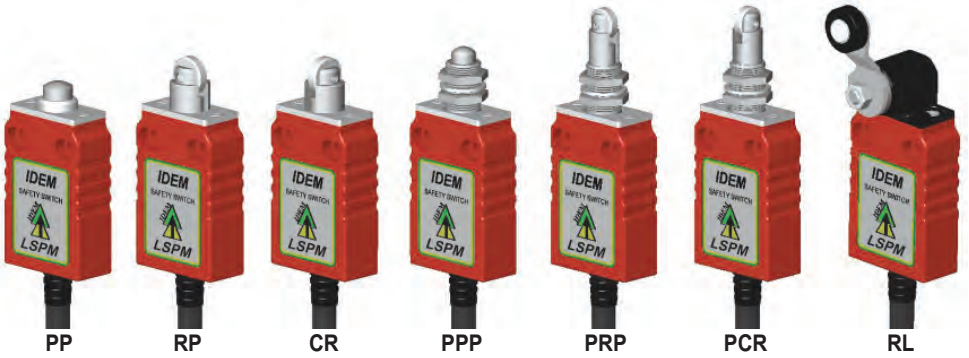


LEVER ARM RESET	SALES NUMBERS		
Contacts	M20	1/2"NPT	QC12
2NC 1NO	173064	173065	173066
3NC	173067	173068	173069
1NC 1NO Snap	173070	173071	173072

Safety Limit Switches **Type: LSPM (Plastic Body)**

APPLICATION:

IDEM's range of LSPM Safety Limit Switches are designed to be mounted for position sensing of moving applications e.g. guard doors, conveyors, machine beds and elevators. They are available with linear plungers, rotary levers or roller plungers with either slow break or snap action contacts.



FEATURES:

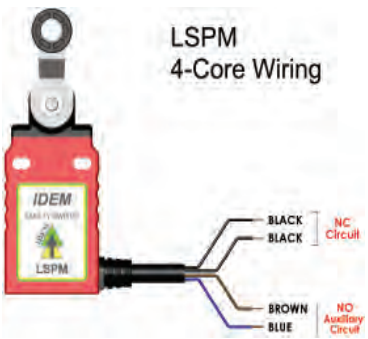
- Standard Duty with plastic body (red colour)
- Positive opening NC safety contacts to EN60947-5-1
- High mechanical life over 5,000,000 cycles
- Enclosure protection to IP67 - suitable for washdown
- Unique 3 pole positively operated contacts
- Extensive choice of 7 actuator heads - linear and rotary
- Side or end cable exit available to assist with fitting
- Wide operating temperature range from -25C up to +80C

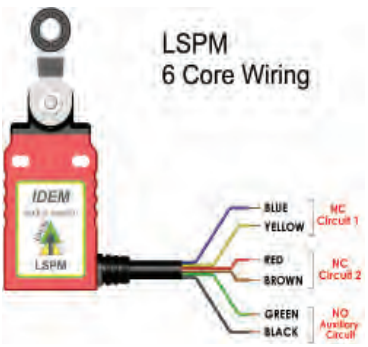
OPERATION:

Operation of LSPM Safety Limit Switches is achieved by a sliding actuation of the moving object to cause deflection of the switch plungers or levers.

For safety applications it is important that the moving object does not pass completely over the switch actuators so as to either cause damage to the actuator or allow it to return to its original position.

WIRING:





ACTUATOR TYPES:

PP	Pin Plunger
RP	Roller Plunger
CR	Cross Roller Plunger
RL	Roller Lever
PPP	Panel Mount Pin Plunger
PRP	Panel Mount Roller Plunger
PCR	Panel Mount Cross Roller Plunger

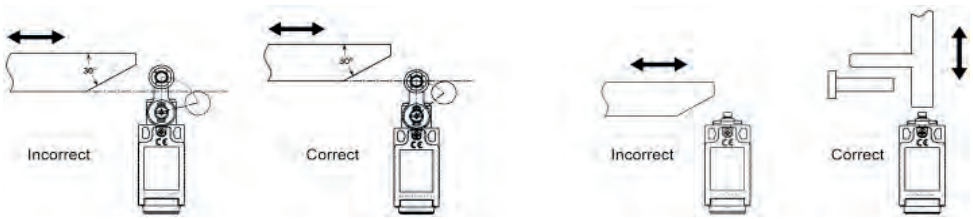
CONTACT BLOCKS:

2NC	**1NO**	Slow Break
1NC	**1NO**	Snap Action

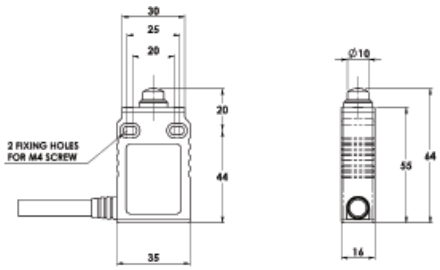
CONDUIT EXIT:

S	Side Exit version
E	End Exit version

Standards:	ISO14119 EN60947-5-1 UL508
Safety Classification and Reliability Data:	
Mechanical Reliability B10d	$2.5x10^6$ operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data - Annual Usage	8 cycles per hour/24 hours per day/365 days MTTFd 356 years
Utilisation Category	AC15 A300 240V 3A
Thermal Current (Ith)	10A
Rated Insulation Voltage	300Vac
Rated Impulse Withstand	2500Vac
Insulation Resistance	100MΩ min.
Max. Switching Speed	250mm/sec
Max. Switching Frequency	6,000 operations per hr.
Case Material	Plastic
Roller Material	Various polymers
Enclosure Protection	IP67
Operating Temperature	-25C to +80C
Mechanical Life Expectancy	5,000,000
Vibration	IEC68-2-6 10-55Hz 0.35mm 1octave/min
Conductor Size	$1.5mm^2$ 4 core or 6 core
Cable OD	8mm max.
Fixing	2xM4
Cable Length	2m



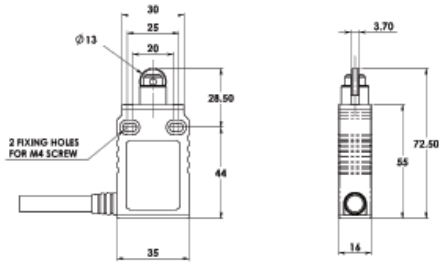
LSPM (Plastic Body) PIN PLUNGER:



LSPM PIN PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	170001	170003
1NC 1NO Snap	170002	170004

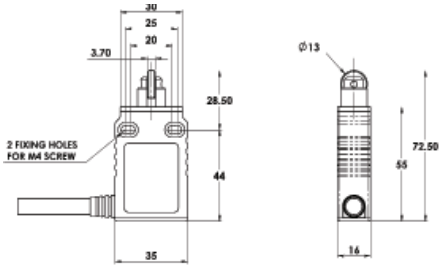
Safety Limit Switches **Type: LSPM (Plastic Body)**

LSPM (Plastic Body) ROLLER PLUNGER:



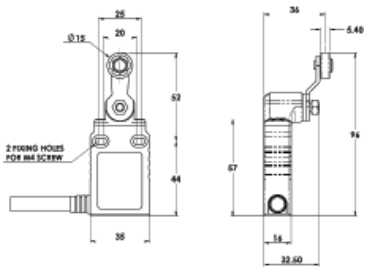
LSPM ROLLER PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	170005	170007
1NC 1NO Snap	170006	170008

LSPM (Plastic Body) CROSS ROLLER PLUNGER:



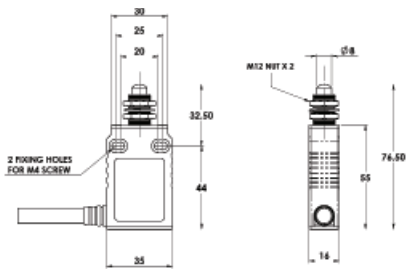
LSPM CROSS ROLLER PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	170009	170010
1NC 1NO Snap	170011	170012

LSPM (Plastic Body) ROLLER LEVER:



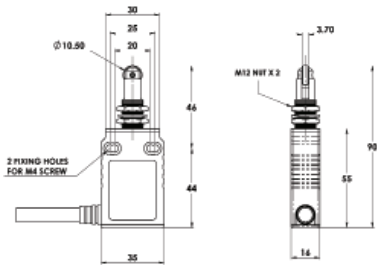
LSPM ROLLER LEVER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	170013	170014
1NC 1NO Snap	170015	170016

LSPM (Plastic Body) PANEL MOUNT PIN PLUNGER:



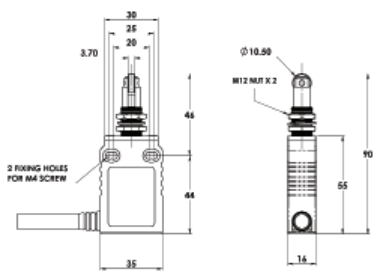
PANEL MOUNT PIN PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	170017	170018
1NC 1NO Snap	170019	170020

LSPM (Plastic Body) PANEL MOUNT ROLLER PLUNGER:



PANEL MOUNT ROLLER PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	170021	170022
1NC 1NO Snap	170023	170024

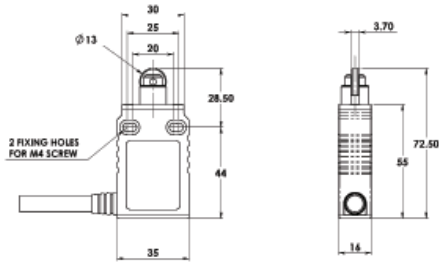
LSPM (Plastic Body) PANEL MOUNT CROSS ROLLER PLUNGER:



PANEL MOUNT CROSS ROLLER PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	170025	170026
1NC 1NO Snap	170027	170028

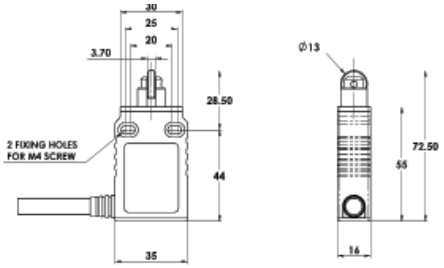
Safety Limit Switches **Type: LSMM (Metal Body)**

LSMM (Die-Cast Metal Body) ROLLER PLUNGER:



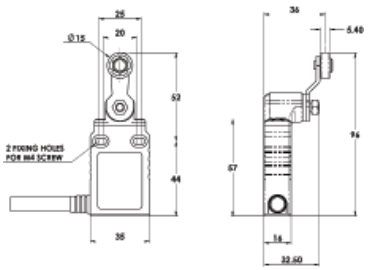
LSMM ROLLER PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	172005	172007
1NC 1NO Snap	172006	172008

LSMM (Die-Cast Metal Body) CROSS ROLLER PLUNGER:



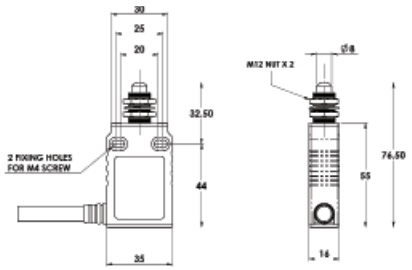
LSMM CROSS ROLLER PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	172009	172010
1NC 1NO Snap	172011	172012

LSMM (Die-Cast Metal Body) ROLLER LEVER:



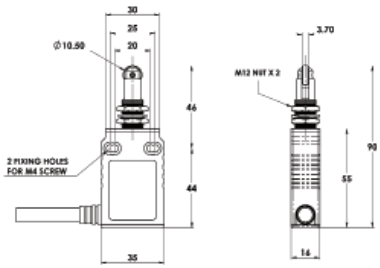
LSMM ROLLER LEVER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	172013	172014
1NC 1NO Snap	172015	172016

LSMM (Die-Cast Metal Body) PANEL MOUNT PIN PLUNGER:



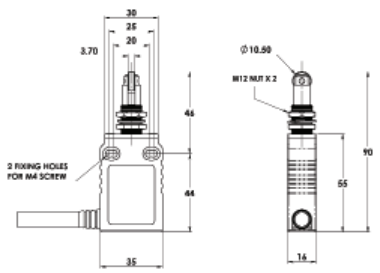
PANEL MOUNT PIN PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	172017	172018
1NC 1NO Snap	172019	172020

LSMM (Die-Cast Metal Body) PANEL MOUNT ROLLER PLUNGER:



PANEL MOUNT ROLLER PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	172021	172022
1NC 1NO Snap	172023	172024

LSMM (Die-Cast Metal Body) PANEL MOUNT CROSS ROLLER PLUNGER:



PANEL MOUNT CROSS ROLLER PLUNGER	SALES NUMBERS	
Contacts	Cable Side Exit	Cable End Exit
2NC 1NO	172025	172026
1NC 1NO Snap	172027	172028

MICRO SWITCHES (PLEASE NOTE THESE ARE NOT CLASSED AS SAFETY SWITCHES)

FEATURES:

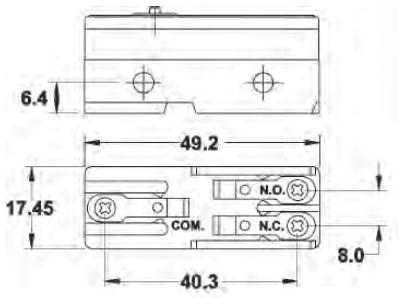
IDEM's range of Micro Switches provide the following features:

A high precision basic micro switch available in a wide variety of styles.

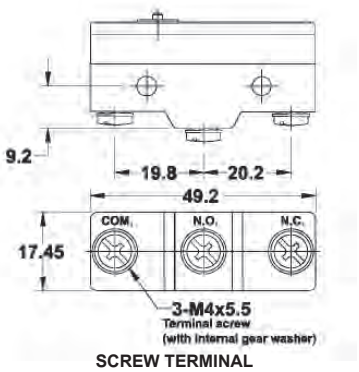
Available with a choice of actuator types: Solder Actuator or Screw Actuator.

Wide margins of operating conditions increase the operating speed range.

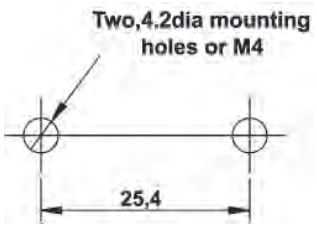
TERMINALS:



SOLDER TERMINAL



SCREW TERMINAL



MOUNTING HOLES

PRODUCT SELECTION (via Part Number):

SOLDER ACTUATOR TYPES:

Part Number	
176001	Pin Plunger
176002	Short Lever
176003	Roller Lever
176004	Slim Spring Plunger
176005	Short Spring Plunger
176006	Panel Mount Plunger
176007	Panel Mount Roller Plunger
176008	Panel Mount Cross Roller Plunger
176009	Long Hinge Lever
176010	Short Hinge Lever
176011	Long Hinge Roller Lever
176012	Short Hinge Roller Lever
176013	Uni-Directional Short Hinge Roller Lever
176014	IP67 Short Spring Plunger
176000	Terminal Enclosure

SCREW ACTUATOR TYPES:

Part Number	
176101	Pin Plunger
176102	Short Lever
176103	Roller Lever
176104	Slim Spring Plunger
176105	Short Spring Plunger
176106	Panel Mount Plunger
176107	Panel Mount Roller Plunger
176108	Panel Mount Cross Roller Plunger
176109	Long Hinge Lever
176110	Short Hinge Lever
176111	Long Hinge Roller Lever
176112	Short Hinge Roller Lever
171113	Uni-Directional Short Hinge Roller Lever
176114	IP67 Short Spring Plunger
176000	Terminal Enclosure

SPECIFICATIONS:

Standard:	20(4)A 250VAC EN61058-1
	15A 125VAC or 250VAC UL61058-1
Rating:	1/2A 125VDC 1/4A 250VDC
	1/8HP 125VAC 1/4HP 250VAC
Contact Resistance:	15m Ohms max. (initial)
Insulation Resistance:	100m Ohms min. (at 500VDC)
Dielectric Strength:	Between terminals of same polarity
	AC 100V (50/60Hz for 1 minute)
Electrical Life:	100,000 operations
Mechanical Life:	1,000,000 operations (minimum)


Pin Plunger


Short Lever


Roller Lever


Slim Spring Plunger


Short Spring Plunger


Panel Mount Plunger


Panel Mount Roller Plunger


Panel Mount Cross Roller Plunger


Long Hinge Lever


Short Hinge Lever


Long Hinge Roller Lever


Short Hinge Roller Lever


Uni-Directional Short Hinge Roller Lever


Short Spring Plunger (with dust protection


TERMINAL ENCLOSURE

MICRO SWITCHES (PLEASE NOTE THESE ARE NOT CLASSED AS SAFETY SWITCHES)

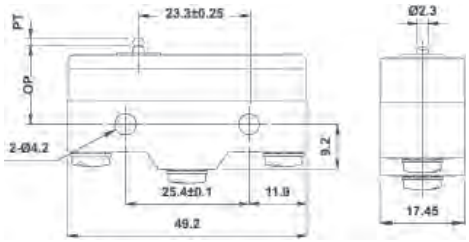
MICRO SWITCH - PIN PLUNGER:

OPERATION CHARACTERISTICS:

Operating Force:	250-350gr
Release Force (min):	114gr
Pre-Travel (max):	0.4mm
Over-Travel (min):	0.13mm
MD (max):	0.05mm
Operating Position:	15.9 ± 0.4mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176001	176101

DIMENSIONS:



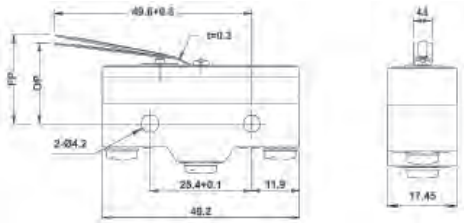
MICRO SWITCH - SHORT LEVER:

OPERATION CHARACTERISTICS:

Operating Force (max):	141gr
Release Force (min):	14gr
Pre-Travel (max):	4mm
Over-Travel (min):	1.6mm
MD (max):	1.3mm
FP (max):	20.6mm
Operating Position:	17.4 ± 0.8mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176002	176102

DIMENSIONS:



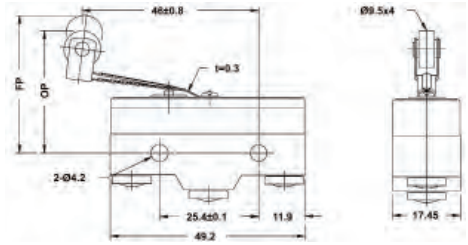
MICRO SWITCH - ROLLER LEVER:

OPERATION CHARACTERISTICS:

Operating Force (max):	141gr
Release Force (min):	14gr
Pre-Travel (max):	4mm
Over-Travel (min):	1.6mm
MD (max):	1.3mm
FP (max):	31.8mm
Operating Position:	28.6 ± 0.8mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176003	176103

DIMENSIONS:



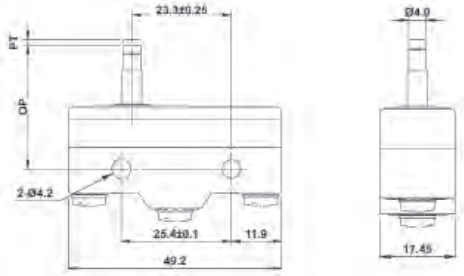
MICRO SWITCH - SLIM SPRING PLUNGER:

OPERATION CHARACTERISTICS:

Operating Force (max):	250-350gr
Release Force (min):	114gr
Pre-Travel (max):	0.4mm
Over-Travel (min):	1.6mm
MD (max):	0.5mm
Operating Position:	28.2 ± 0.5mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176004	176104

DIMENSIONS:



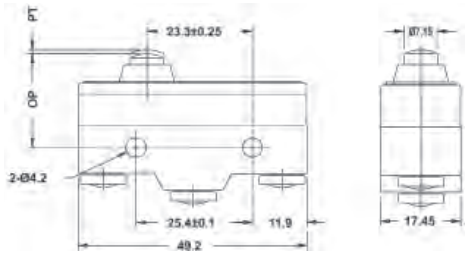
MICRO SWITCH - SHORT SPRING PLUNGER:

OPERATION CHARACTERISTICS:

Operating Force:	250-350gr
Release Force (min):	114gr
Pre-Travel (max):	0.4mm
Over-Travel (min):	1.6mm
MD (max):	0.05mm
Operating Position:	21.5 ± 0.5mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176005	176105

DIMENSIONS:



MICRO SWITCHES (PLEASE NOTE THESE ARE NOT CLASSED AS SAFETY SWITCHES)

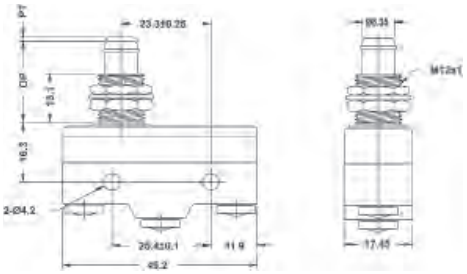
MICRO SWITCH - PANEL MOUNT PLUNGER:

OPERATION CHARACTERISTICS:

Operating Force:	250-350gr
Release Force (min):	114gr
Pre-Travel (max):	0.4mm
Over-Travel (min):	5.5mm
MD (max):	0.05mm
Operating Position:	21.8 ± 0.8mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176006	176106

DIMENSIONS:



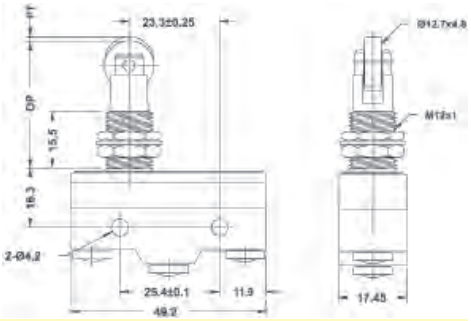
MICRO SWITCH - PANEL MOUNT ROLLER PLUNGER:

OPERATION CHARACTERISTICS:

Operating Force:	250-350gr
Release Force (min):	114gr
Pre-Travel (max):	0.4mm
Over-Travel (min):	3.58mm
MD (max):	0.05mm
Operating Position:	33.4 ± 1.2mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176007	176107

DIMENSIONS:



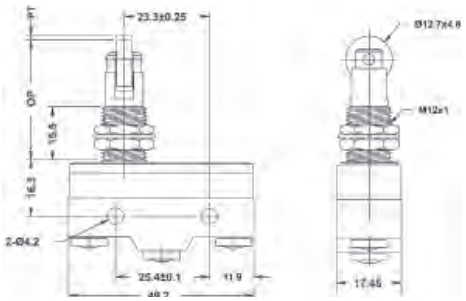
MICRO SWITCH - PANEL MOUNT CROSS ROLLER PLUNGER:

OPERATION CHARACTERISTICS:

Operating Force:	250-350gr
Release Force (min):	114gr
Pre-Travel (max):	0.4mm
Over-Travel (min):	3.58mm
MD (max):	0.05mm
Operating Position:	33.4 ± 1.2mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176008	176108

DIMENSIONS:



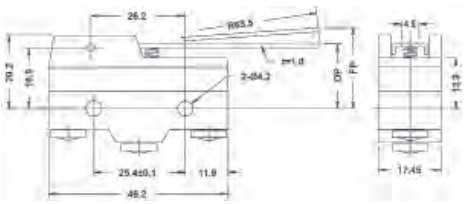
MICRO SWITCH - LONG HINGE LEVER:

OPERATION CHARACTERISTICS:

Operating Force (max):	70gr
Release Force (min):	14gr
Pre-Travel (max):	10mm
Over-Travel (min):	5.6mm
MD (max):	1.27mm
FP (max):	28.2mm
Operating Position:	19 ± 0.8mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176009	176109

DIMENSIONS:



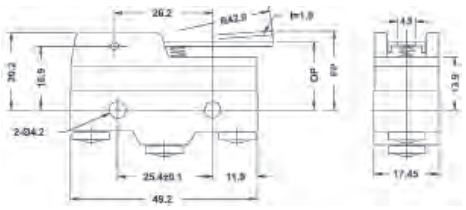
MICRO SWITCH - SHORT HINGE LEVER:

OPERATION CHARACTERISTICS:

Operating Force (max):	90gr
Release Force (min):	18gr
Pre-Travel (max):	7mm
Over-Travel (min):	3.5mm
MD (max):	1mm
FP (max):	26.2mm
Operating Position:	19.8 ± 0.8mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176010	176110

DIMENSIONS:



MICRO SWITCHES (PLEASE NOTE THESE ARE NOT CLASSED AS SAFETY SWITCHES)

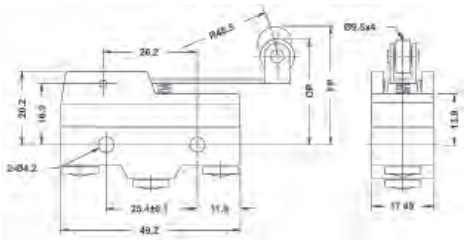
MICRO SWITCH - LONG HINGE ROLLER LEVER:

OPERATION CHARACTERISTICS:

Operating Force (max):	100gr
Release Force (min):	22gr
Pre-Travel (max):	7.1mm
Over-Travel (min):	4mm
MD (max):	1.02mm
FP (max):	36.5mm
Operating Position:	30.2 ± 0.8mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176011	176111

DIMENSIONS:



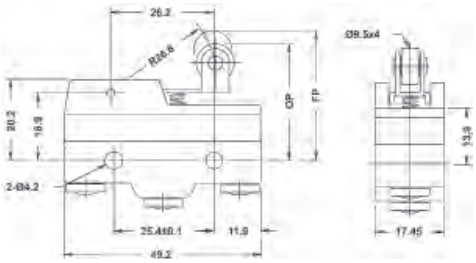
MICRO SWITCH - SHORT HINGE ROLLER LEVER:

OPERATION CHARACTERISTICS:

Operating Force (max):	160gr
Release Force (min):	42gr
Pre-Travel (max):	2.7mm
Over-Travel (min):	2.4mm
MD (max):	0.5mm
FP (max):	32.5mm
Operating Position:	30.2 ± 0.4mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176012	176112

DIMENSIONS:



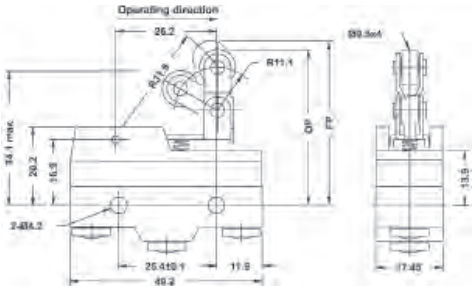
MICRO SWITCH - UNI-DIRECTIONAL SHORT HINGE ROLLER LEVER:

OPERATION CHARACTERISTICS:

Operating Force (max):	170gr
Release Force (min):	42gr
Pre-Travel (max):	2.7mm
Over-Travel (min):	2.4mm
MD (max):	0.51mm
FP (max):	43.6mm
Operating Position:	41.3 ± 0.8mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176013	176113

DIMENSIONS:



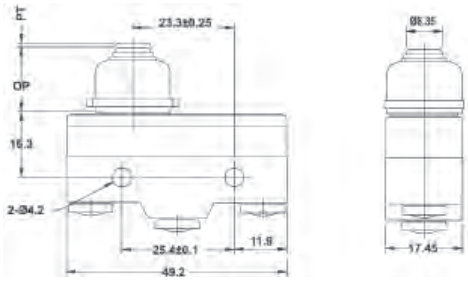
MICRO SWITCH - SHORT SPRING PLUNGER (with dust protection IP60):

OPERATION CHARACTERISTICS:

Operating Force (max):	540gr
Release Force (min):	114gr
Pre-Travel (max):	2.3mm
Over-Travel (min):	1.6mm
MD (max):	0.06mm
Operating Position:	28.2 ± 0.5mm

SALES NUMBERS	
SOLDER TERMINAL	SCREW TERMINAL
176014	176114

DIMENSIONS:



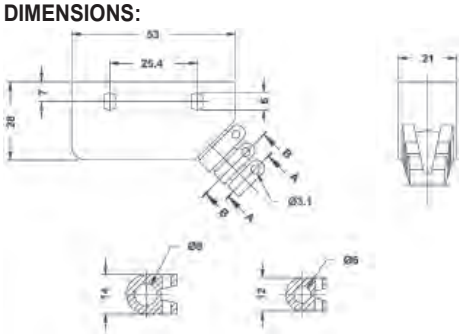
MICRO SWITCH - TERMINAL ENCLOSURE:

CHARACTERISTICS:

Designed to carry and protect all varieties of IDEM Micro Switches.

SALES NUMBERS
TERMINAL ENCLOSURE FOR ALL TYPES
176000

DIMENSIONS:



SKORPION Trapped Key Interlocking with Key Exchange

THE SKORPION RANGE - AVAILABLE IN **STAINLESS STEEL 316** OR **DIE CAST:**

ISOLATION

ISB1

KEY EXCHANGE

SS-KE-NS5 shown above
Available with up to 10 Keys

INTERLOCKING

SS-TS

PRODUCT OVERVIEW:

The SKORPION Trapped Key System has been developed to provide extremely robust mechanical coded key safeguarding and interlocking for hazardous machinery.

The system works on the principle of releasing factory coded mechanical keys in a pre-determined sequence to ensure machine power is isolated before any access can be gained to hazardous or dangerous machinery.

After the machine control has been isolated (first key turned in the system) the key from the isolator can then be used to release other trapped keys to enable access to the guarded areas.

After release of the first key (power isolation) safeguarding can be achieved without the need for electrical wiring, this makes the system ideal for use in harsh environments.

When used in conjunction with interlock sensing they can be used to achieve up to PLe/Cat4 to ISO13849-1.

SS-HS

APPLICATION:

A trapped-key guarding system relies upon the transfer of keys between a power isolation switch (or control switch) and a locking mechanism fixed on a guard.

The essential feature of the system is that a removable key is trapped either in the guard lock, or in the power isolation switch. The lock on the guard is arranged so that the key can be released only when the guard has been closed and locked. This allows transfer of the key from the guard to the power isolation switch.

Closing the switch traps the key, so that it cannot be removed while the switch is in the ON position.

If there is more than one source of power, and therefore more than one circuit breaking element to be actuated, then a key-exchange box is necessary, to which all keys have to be transferred and locked in before the access key, which is of a different coding, can be released for transfer to the guard lock.

Where there is more than one guard, the exchange box will accommodate an equivalent number of access keys.

Where a number of operations have to be carried out in a pre-determined definite sequence, then the transferable key is locked in and exchanged for a different one at each stage.

SS-BS

ADVANTAGES:

- No reduction of integrity due to the distance between movable guard and control system.
- High mechanical integrity, robust fixings and holdings suitable for all types of guards.
- Eliminates the need for electrical wiring to each movable guard.
- Fully Stainless Steel 316 version is suitable when the movable guard is placed in harsh or hostile environments.
- Suitable for CIP and SIP cleaning processes and can be high pressure hosed with detergents at high temperatures.
- Can be used where the movable guard requires to be removed completely.
- All keys are coded in the factory and it is virtually impossible to override the system.
- A trapped key system provides a quick yet safe and reliable access to machinery.
- Use of a trapped key system can also prevent shortcuts and enforce a logical set of procedures that need to be satisfied.
- Until the isolator key is returned to its original position within the lock, there is no way to enable the machinery to be re-started.

SKORPION Trapped Key Interlocking with Key Exchange

ISOLATION SWITCH BOX 1 - **ISB1:**

ISB1

Power "ON" = Key TRAPPED. Power "OFF" = Key can be RELEASED

STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH BOX 1 RATING**
SS-ISB1-25	25A 690V 4 pole
SS-ISB1-40	40A 690V 4 pole

DIE-CAST (Mirror Finish) BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH BOX 1 RATING**
M-ISB1-25	25A 690V 4 pole
M-ISB1-40	40A 690V 4 pole

ISOLATION SWITCH BOX 2 - **ISB2:**

ISB2

Power "ON" = Key TRAPPED. Power "OFF" = Key can be RELEASED

STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH BOX 2 RATING**
SS-ISB2-63	63A 690V 4 pole

DIE-CAST (Mirror Finish) BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH BOX 2 RATING**
M-ISB2-63	63A 690V 4 pole

IP69K CONTROL SWITCH - **ISB-CB-M with IP69K Rating:**

ISB-CB-M

Power "ON" = Key TRAPPED. Power "OFF" = Key can be RELEASED

STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH BOX WITH IP69K RATING**
SS-ISB-CB-22-M	2NC 2NO Contact Block 240V 3A max. M20
SS-ISB-CB-31-M	3NC 1NO Contact Block 240V 3A max. M20
SS-ISB-CB-40-M	4NC Contact Block 240V 3A max. M20

DIE CAST (Mirror Finish) BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH BOX WITH IP69K RATING**
M-ISB-CB-22-M	2NC 2NO Contact Block 240V 3A max. M20
M-ISB-CB-31-M	3NC 1NO Contact Block 240V 3A max. M20
M-ISB-CB-40-M	4NC Contact Block 240V 3A max. M20

EXPLOSION PROOF CONTROL SWITCH - **ISB-CB-EX (IECEx/ATEX Internal Switch):**

ISB-CB-EX

Exd IIC T6 (-20 ≤ Ta ≤ +60C)

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

The Explosion Proof contact blocks conform to European harmonized standard EN60079-0 and EN60079-1 and can be used in European Zone 1, 2, 21, 22 environments. (Gas and Dust).

Power "ON" = Key TRAPPED. Power "OFF" = Key can be RELEASED

STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH BOX WITH EXPLOSION PROOF CONTACT BLOCK**
SS-ISB-CB-22-EX	2NC 2NO (pre-wired 3m cable) 250V 2.5A max.
SS-ISB-CB-11-EX	1NC 1NO (pre-wired 3m cable) 250V 4.0A max.
SS-ISB-CB-20-EX	2NC (pre-wired 3m cable) 250V 4.0A max.

DIE CAST (Mirror Finish) BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH BOX WITH EXPLOSION PROOF CONTACT BLOCK**
M-ISB-CB-22-EX	2NC 2NO (pre-wired 3m cable) 250V 2.5A max.
M-ISB-CB-11-EX	1NC 1NO (pre-wired 3m cable) 250V 4.0A max.
M-ISB-CB-20-EX	2NC (pre-wired 3m cable) 250V 4.0A max.

SKORPION Trapped Key Interlocking with Key Exchange

ISOLATION SWITCH PANEL MOUNT - **ISP:**

ISP

Power "ON" = Key TRAPPED. Power "OFF" = Key can be RELEASED

STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH PANEL MOUNT RATING**
SS-ISP-25	25A 690V 4 pole
SS-ISP-40	40A 690V 4 pole
SS-ISP-63	63A 690V 4 pole

DIE CAST (Mirror Finish) BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH PANEL MOUNT RATING**
M-ISP-25	25A 690V 4 pole
M-ISP-40	40A 690V 4 pole
M-ISP-63	63A 690V 4 pole

Sales Number	**AUXILIARY SIGNAL CONTACT BLOCK**
AUX-ISP	1NC+1NO AC-15 6A 230V/4A 415V)

ISOLATION SWITCH WITH SOLENOID CONTROL (PANEL MOUNT) - **ISP-SKR:**

ISP-SKR

Fitted with RED/GREEN status lamps.

In addition to the 4 pole main Isolator Contacts, all models of the isolation switch ISP-SKR are supplied with:

RED lamp wired to indicate Solenoid energized.

GREEN lamp for end user designation.

2NC 1NO monitoring contact block.

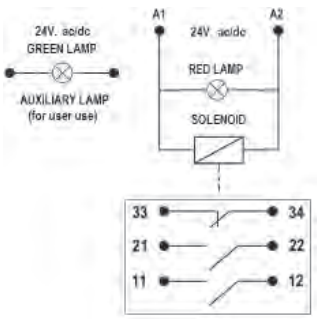
Solenoid energised to release key.

Power "ON" = Key TRAPPED. Power "OFF" = Key can be RELEASED

STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH PANEL MOUNT SOLENOID KEY RELEASE RATING**
SS-ISP-SKR-25	25A 690V 4 pole
SS-ISP-SKR-40	40A 690V 4 pole
SS-ISP-SKR-63	63A 690V 4 pole

DIE CAST (Mirror Finish) BARREL HOUSING AND DUST CAP	
Sales Number	**ISOLATION SWITCH PANEL MOUNT SOLENOID KEY RELEASE RATING**
M-ISP-SKR-25	25A 690V 4 pole
M-ISP-SKR-40	40A 690V 4 pole
M-ISP-SKR-63	63A 690V 4 pole

Monitoring Contacts:



MONITORING CONNECTION TERMINALS		
Terminals	**Description**	**RATING**
A1 A2	Solenoid voltage 24V ac/dc	-
11 12	Closed when key is trapped and solenoid de-energized. Open when solenoid is energized – trapped open if key removed.	230V 3A
21 22	Closed when key is trapped and solenoid de-energized. Open when solenoid is energized – trapped open if key removed.	230V 3A
33 34	Open when solenoid is key is trapped. Closed when solenoid is energized – trapped open if key removed.	230V 3A
24V Auxiliary Lamp	3mm spade terminal - GREEN (not connected).	-

ACCESSORY: AUXILIARY SIGNAL CONTACT BLOCK: **AUX-SP**

Optional Auxiliary Signal Contact Block to indicate isolator status.

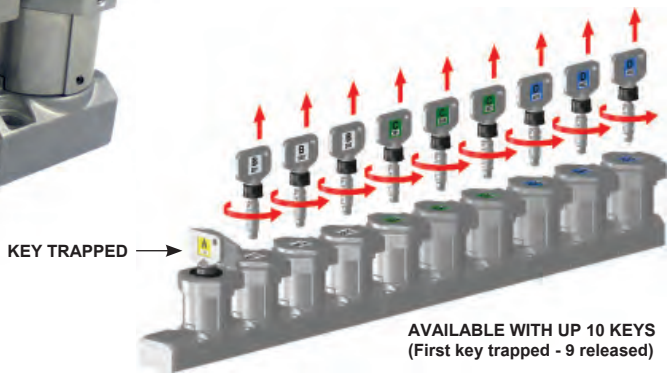
Fits to all ISP-SKR and ISP isolation switch panel mount.

AUXILIARY CONTACT BLOCK	
AUX-ISP	1NC+1NO AC-15 6A 230V/4A 415V)

SKORPION Trapped Key Interlocking with Key Exchange

KEY EXCHANGE STAINLESS STEEL 316 ORDERING:

SS-KE-NS4

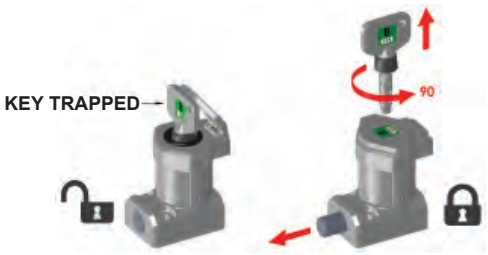


Sales Number	KEY EXCHANGE - STAINLESS STEEL 316	
SS-KE-NS2	2 Key	First key TRAPPED All remaining keys can be released non-sequentially.
SS-KE-NS3	3 Key	
SS-KE-NS4	4 Key	
SS-KE-NS5	5 Key	
SS-KE-S6	6 Key	First key TRAPPED All remaining keys are then released sequentially.
SS-KE-S7	7 Key	
SS-KE-S8	8 Key	
SS-KE-S9	9 Key	
SS-KE-S10	10 Key	

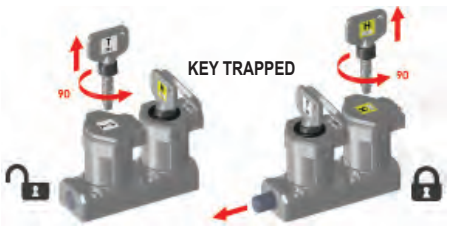
BOLT INTERLOCKS (not suitable for guard access) STAINLESS STEEL 316 ORDERING:

SS-BS

Sales Number	BOLT INTERLOCK SINGLE KEY STAINLESS STEEL 316
SS-BS	Key trapped - bolt retracted



SS-BD-11



Sales Number	BOLT INTERLOCK DUAL KEY STAINLESS STEEL 316
SS-BD-11	2 keys - 1 key trapped 1 key free - bolt retracted

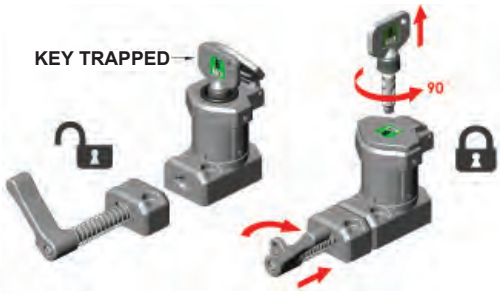
Sales Number	BOLT INTERLOCK DUAL KEY STAINLESS STEEL 316
SS-BD-20	2 keys trapped - bolt retracted

SKORPION Trapped Key Interlocking with Key Exchange

HANDLE INTERLOCKS (Single Key) STAINLESS STEEL 316 ORDERING:

SS-HS

Sales Number	HANDLE INTERLOCK SINGLE KEY STAINLESS STEEL 316
SS-HS	Key trapped - actuator unlocked (spring action handle)
SS-HS-C	Key trapped - actuator unlocked (chain fixed to handle)

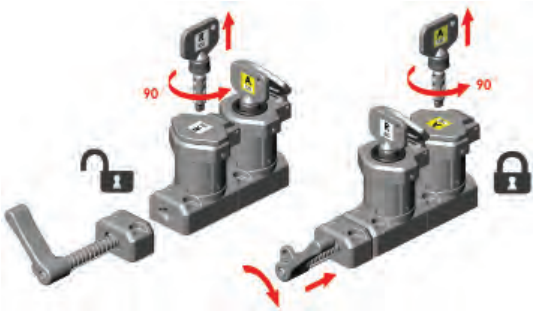


SS-HS-C

HANDLE INTERLOCKS (Dual Key) STAINLESS STEEL 316 ORDERING:

SS-HD-11

Sales Number	HANDLE INTERLOCK DUAL KEY STAINLESS STEEL 316
SS-HD-11	2 sequential keys - one key trapped one key free - actuator unlocked (spring action handle)
SS-HD-C-11	2 sequential keys - one key trapped one key free - actuator unlocked (chain fixed to handle)



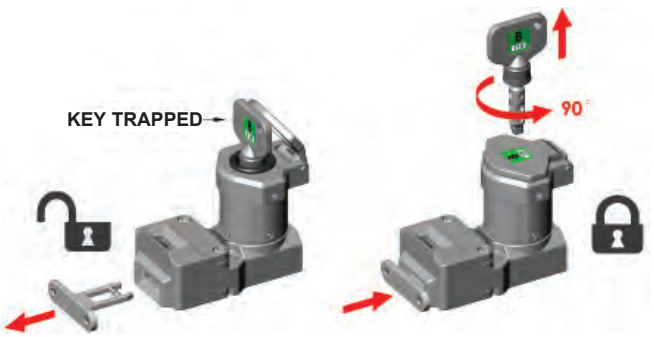
SS-HD-C-11

SKORPION Trapped Key Interlocking with Key Exchange

TONGUE INTERLOCKS (Single Key) STAINLESS STEEL 316 ORDERING:

SS-TS

*See below for Actuator options.

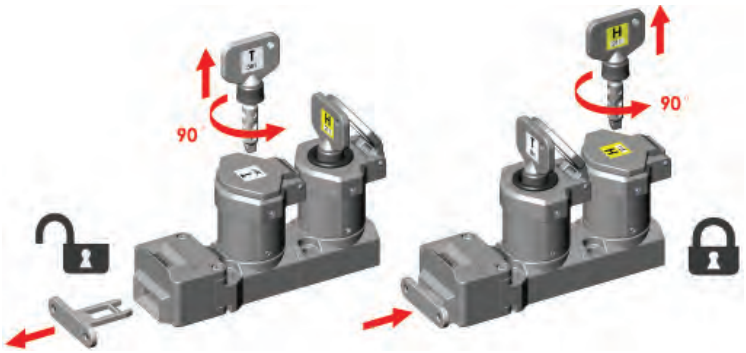


Sales Number	TONGUE INTERLOCK SINGLE KEY STAINLESS STEEL 316 **Holding Force** (ISO14119) F1 Max 3000N Fzh 2307N
SS-TS	Key trapped - actuator unlocked

TONGUE INTERLOCKS (Dual Key) STAINLESS STEEL 316 ORDERING:

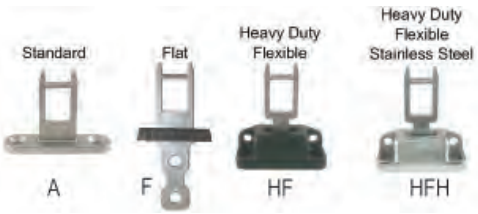
SS-TD-11

*See below for Actuator options.



Sales Number	TONGUE INTERLOCK DUAL KEY STAINLESS STEEL 316 **Holding Force** (ISO14119) F1 Max 3000N Fzh 2307N
SS-TD-11	2 sequential keys - one key trapped one key free - actuator unlocked

ACTUATORS FOR TONGUE INTERLOCK SWITCHES SELECTION CHART:



SALES NUMBER	ACTUATOR TYPE
140107	A = Standard Actuator Stainless Steel 316
140108	F = Flat Actuator Stainless Steel 316 with Plastic Cover
140110	HF = Heavy Duty Flexible Actuator Stainless Steel 316 and Die Cast
140111	HFH = Heavy Duty Flexible Actuator fully Stainless Steel 316

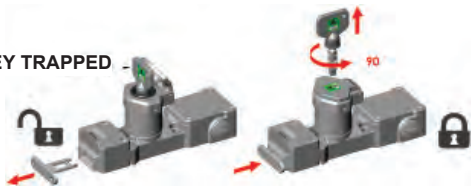
SKORPION Trapped Key Interlocking with Key Exchange

INTERLOCKING WITH CONTROL ISOLATION STAINLESS STEEL 316 ORDERING:

SS-TS-CB

*See below for Actuator options.

Holding Force (ISO14119) F1 Max 3000N Fzh 2307N



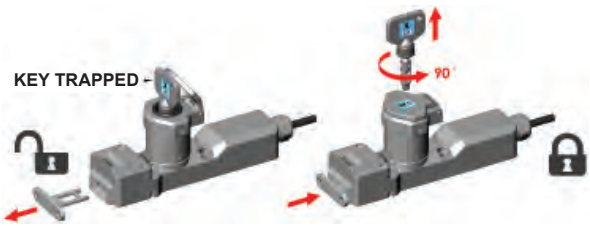
Sales Number	TONGUE INTERLOCK SINGLE KEY WITH CONTACT BLOCK STAINLESS STEEL 316 Key Trapped - Actuator Unlocked - NC safety Contacts Open
SS-TS-CB-22-N	Single Tongue Interlock with 2NC 2NO Contact Block - **1/2" NPT**
SS-TS-CB-31-N	Single Tongue Interlock with 3NC 1NO Contact Block - **1/2" NPT**
SS-TS-CB-22-M	Single Tongue Interlock with 2NC 2NO Contact Block - **M20**
SS-TS-CB-31-M	Single Tongue Interlock with 3NC 1NO Contact Block - **M20**

Sales Number	TONGUE INTERLOCK SINGLE KEY WITH CONTACT BLOCK STAINLESS STEEL 316 Key Free - Actuator Unlocked - NC Safety Contacts Open
SS-TSR-CB-22-N	Single Tongue Interlock with 2NC 2NO Contact Block - **1/2" NPT**
SS-TSR-CB-31-N	Single Tongue Interlock with 3NC 1NO Contact Block - **1/2" NPT**
SS-TSR-CB-22-M	Single Tongue Interlock with 2NC 2NO Contact Block - **M20**
SS-TSR-CB-31-M	Single Tongue Interlock with 3NC 1NO Contact Block - **M20**

EXPLOSION PROOF INTERLOCKING WITH CONTROL ISOLATION S/STEEL 316 ORDERING:

SS-TS-CB EX

*See below for Actuator options.



Trapped Key with ATEX EExd IIC T6 certified explosion proof contact blocks.
The explosion proof contact blocks conform to European harmonized standard EN60079-0 and EN60079-1 and can be used in European Zone 1, 2, 21, 22 environments. (Gas and Dust).
Designed for use in oil, petro-chemical, pharmaceutical, food processing and packaging applications where the potential for explosive atmospheres are present.

Exd IIC T6 (-20 ≤ Ta ≤ +60C)

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

Sales Number	TONGUE INTERLOCK SINGLE KEY WITH EXPLOSION PROOF CONTACT BLOCK STAINLESS STEEL 316 **Holding Force** (ISO14119) F1 Max 3000N Fzh 2307N
SS-TS-CB-22-EX	Single Tongue Interlock with 2NC 2NO Pre-wired EX Block
SS-TS-CB-11-EX	Single Tongue Interlock with 1NC 1NO Pre-wired EX Block

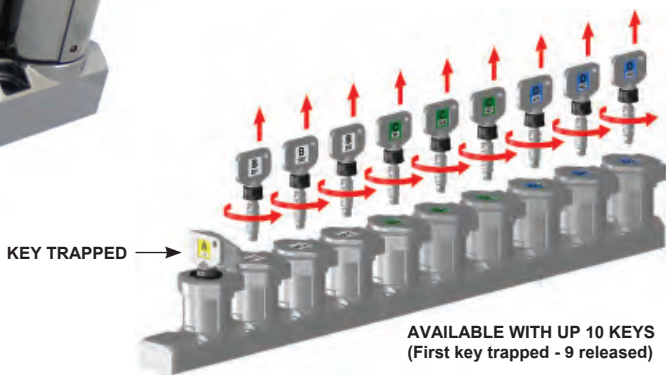
ACTUATORS FOR TONGUE INTERLOCK SWITCHES SELECTION CHART:

SALES NUMBER	ACTUATOR TYPE
140107	A = Standard Actuator Stainless Steel 316
140108	F = Flat Actuator Stainless Steel 316 with Plastic Cover
140110	HF = Heavy Duty Flexible Actuator Stainless Steel 316 and Die Cast
140111	HFH = Heavy Duty Flexible Actuator fully Stainless Steel 316

SKORPION Trapped Key Interlocking with Key Exchange

KEY EXCHANGE DIE CAST METAL ORDERING:

M-KE-NS4

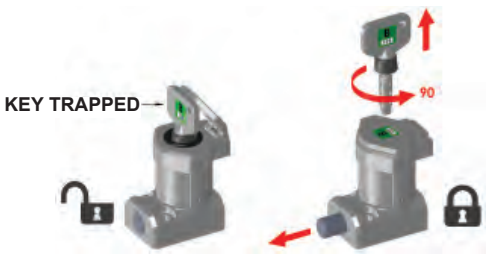


Sales Number	KEY EXCHANGE - DIE CAST METAL (Mirror Finish)	
M-KE-NS2	2 Key	First key TRAPPED All remaining keys can be released non-sequentially.
M-KE-NS3	3 Key	
M-KE-NS4	4 Key	
M-KE-NS5	5 Key	
M-KE-S6	6 Key	First key TRAPPED All remaining keys are then released sequentially.
M-KE-S7	7 Key	
M-KE-S8	8 Key	
M-KE-S9	9 Key	
M-KE-S10	10 Key	

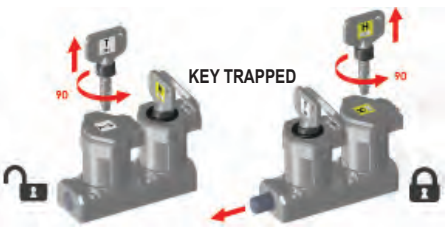
BOLT INTERLOCKS (not suitable for guard access) DIE CAST METAL ORDERING:

M-BS

Sales Number	BOLT INTERLOCK SINGLE KEY DIE CAST METAL (Mirror Finish)
M-BS	Key trapped - bolt retracted



M-BD-11



Sales Number	BOLT INTERLOCK DUAL KEY DIE CAST METAL (Mirror Finish)
M-BD-11	2 keys - 1 key trapped 1 key free - bolt retracted

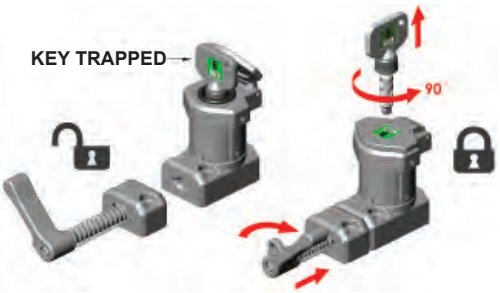
Sales Number	BOLT INTERLOCK DUAL KEY DIE CAST METAL (Mirror Finish)
M-BD-20	2 keys trapped - bolt retracted

SKORPION Trapped Key Interlocking with Key Exchange

HANDLE INTERLOCKS DIE CAST METAL ORDERING:

M-HS

Sales Number	HANDLE INTERLOCK SINGLE KEY DIE CAST METAIL (Mirror Finish)
M-HS	Key trapped - actuator unlocked (spring action handle)
M-HS-C	Key trapped - actuator unlocked (chain fixed to handle)



M-HS-C

M-HD-11

Sales Number	HANDLE INTERLOCK DUAL KEY DIE CAST METAL (Mirror Finish)
M-HD-11	2 sequential keys - one key trapped one key free - actuator unlocked (spring action handle)
M-HD-C-11	2 sequential keys - one key trapped one key free - actuator unlocked (chain fixed to handle)

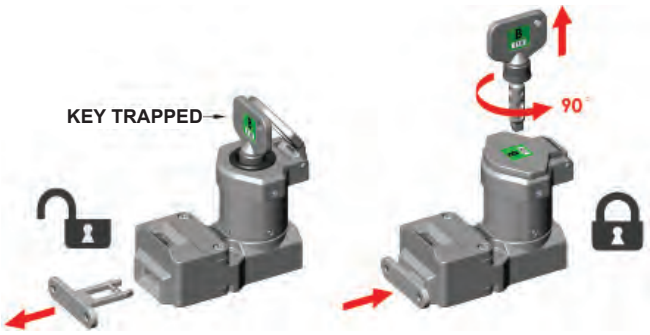
M-HD-C-11

SKORPION Trapped Key Interlocking with Key Exchange

TONGUE INTERLOCKS (Single Key) DIE CAST METAL ORDERING:

M-TS

***See below for Actuator options.**

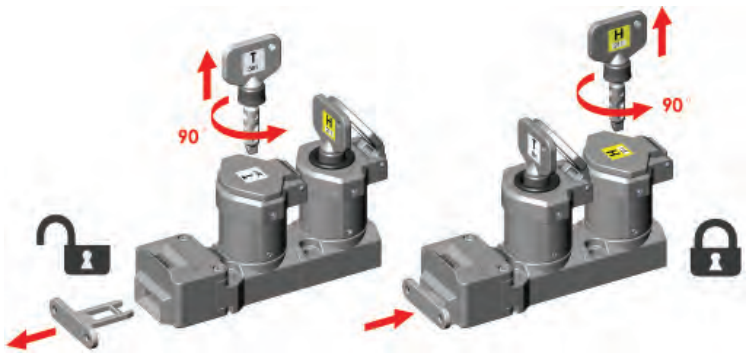


Sales Number	TONGUE INTERLOCK SINGLE KEY DIE CAST METAL (Mirror Finish) **Holding Force** (ISO14119) F1 Max 3000N Fzh 2307N
M-TS	Key trapped - actuator unlocked

TONGUE INTERLOCKS (Dual Key) DIE CAST METAL ORDERING:

M-TD-11

***See below for Actuator options.**



Sales Number	TONGUE INTERLOCK DUAL KEY DIE CAST METAL (Mirror Finish) **Holding Force** (ISO14119) F1 Max 3000N Fzh 2307N
M-TD-11	2 sequential keys - one key trapped one key free - actuator unlocked

ACTUATORS FOR TONGUE INTERLOCK SWITCHES SELECTION CHART:

SALES NUMBER	ACTUATOR TYPE
140107	A = Standard Actuator Stainless Steel 316
140108	F = Flat Actuator Stainless Steel 316 with Plastic Cover
140110	HF = Heavy Duty Flexible Actuator Stainless Steel 316 and Die Cast
140111	HFH = Heavy Duty Flexible Actuator fully Stainless Steel 316

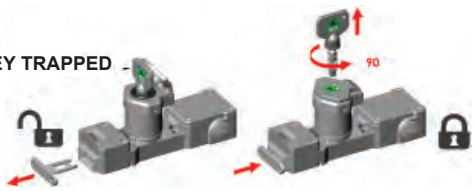
SKORPION Trapped Key Interlocking with Key Exchange

INTERLOCKING WITH CONTROL ISOLATION DIE CAST METAL ORDERING:

M-TS-CB

*See below for Actuator options.

Holding Force (ISO14119) F1 Max 3000N Fzh 2307N



Sales Number	TONGUE INTERLOCK SINGLE KEY WITH CONTACT BLOCK DIE CAST METAL (Mirror Finish) Key Trapped - Actuator Unlocked - NC safety Contacts Open
M-TS-CB-22-N	Single Tongue Interlock with 2NC 2NO Contact Block - **1/2" NPT**
M-TS-CB-31-N	Single Tongue Interlock with 3NC 1NO Contact Block - **1/2" NPT**
M-TS-CB-22-M	Single Tongue Interlock with 2NC 2NO Contact Block - **M20**
M-TS-CB-31-M	Single Tongue Interlock with 3NC 1NO Contact Block - **M20**

Sales Number	TONGUE INTERLOCK SINGLE KEY WITH CONTACT BLOCK DIE CAST METAL (Mirror Finish) Key Free - Actuator Unlocked - NC Safety Contacts Open
M-TSR-CB-22-N	Single Tongue Interlock with 2NC 2NO Contact Block - **1/2" NPT**
M-TSR-CB-31-N	Single Tongue Interlock with 3NC 1NO Contact Block - **1/2" NPT**
M-TSR-CB-22-M	Single Tongue Interlock with 2NC 2NO Contact Block - **M20**
M-TSR-CB-31-M	Single Tongue Interlock with 3NC 1NO Contact Block - **M20**

EXPLOSION PROOF INTERLOCKING WITH CONTROL ISOLATION DIE CAST METAL ORDERING:

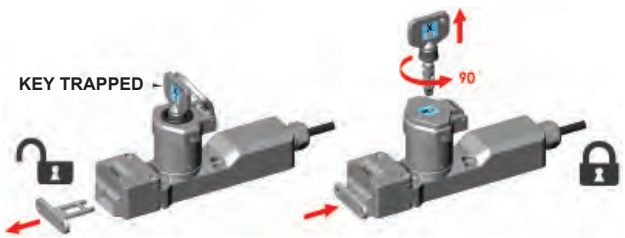
M-TS-CB EX

*See below for Actuator options.

Trapped Key with ATEX EExd IIC T6 certified explosion proof contact blocks.
The explosion proof contact blocks conform to European harmonized standard EN60079-0 and EN60079-1 and can be used in European Zone 1, 2, 21, 22 environments. (Gas and Dust).
Designed for use in oil, petro-chemical, pharmaceutical, food processing and packaging applications where the potential for explosive atmospheres are present.

Exd IIC T6 (-20 ≤ Ta ≤ +60C)

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db



Sales Number	TONGUE INTERLOCK SINGLE KEY WITH EXPLOSION PROOF CONTACT BLOCK DIE CAST (Mirror Finish) **Holding Force** (ISO14119) F1 Max 3000N Fzh 2307N
M-TS-CB-22-EX	Single Tongue Interlock with 2NC 2NO Pre-wired EX Block
M-TS-CB-11-EX	Single Tongue Interlock with 1NC 1NO Pre-wired EX Block

SALES NUMBER	ACTUATOR TYPE
140107	A = Standard Actuator Stainless Steel 316
140108	F = Flat Actuator Stainless Steel 316 with Plastic Cover
140110	HF = Heavy Duty Flexible Actuator Stainless Steel 316 and Die Cast
140111	HFH = Heavy Duty Flexible Actuator fully Stainless Steel 316

SKORPION Trapped Key Interlocking with Key Exchange

KEY CODE SELECTION & ORDERING:

IDEM offer a unique range of KEY CODE variants that number in the tens of thousands.

To assist in the process of ordering we offer a range of 48 STANDARD KEY CODES which are shown in the table below (other KEY CODES are available to the customer upon request).

Note: Different KEY FOB colours are available dependent upon the code chosen. This is a customer option to provide the end-user with an easily seen visual aid e.g. the First Key (Primary Key) could be chosen in a different colour to the colour chosen for the Released Keys - therefore easily distinguishing the Primary Key from the other keys in the system.

Please see Order Form TK1 available either from www.idemsafety.com or by contacting IDEM at sales@idemsafety.com.

KEY FOB COLOUR	YELLOW Key Fob	WHITE Key Fob
	A	B
Key Code	A101	B201
	A102	B202
	A103	B203
	A104	B204
	A105	B205
	A106	B206
	A107	B207
	A108	B208
	A109	B209
	A110	B210
	A111	B211
	A112	B212
KEY FOB COLOUR	GREEN Key Fob	BLUE Key Fob
	C	D
Key Code	C301	D401
	C302	D402
	C303	D403
	C304	D404
	C305	D405
	C306	D406
	C307	D407
	C308	D408
	C309	D409
	C310	D410
	C311	D411
	C312	D412

ORDERING:

Please see Order Form TK1 available either from www.idemsafety.com or by contacting IDEM at sales@idemsafety.com.
Tens of thousands of codes are possible. It is the responsibility of the customer to select the key code from the standard list above or contact IDEM to discuss other key code options available.

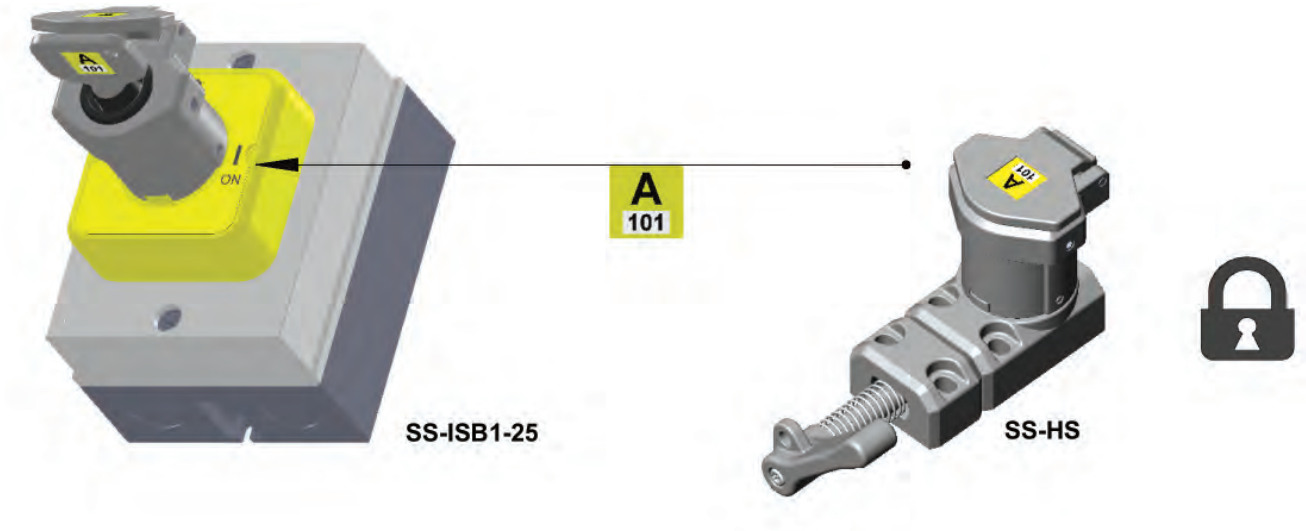
ORDER FORM TK1: (See examples on next two pages)

SKORPION TRAPPED KEY ORDER FORM/TEMPLATE - TK1 (for Example 2)					
ORDER	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Part Number					
	CODE	CODE	CODE	CODE	CODE
Key Fob Code					
Key Status					

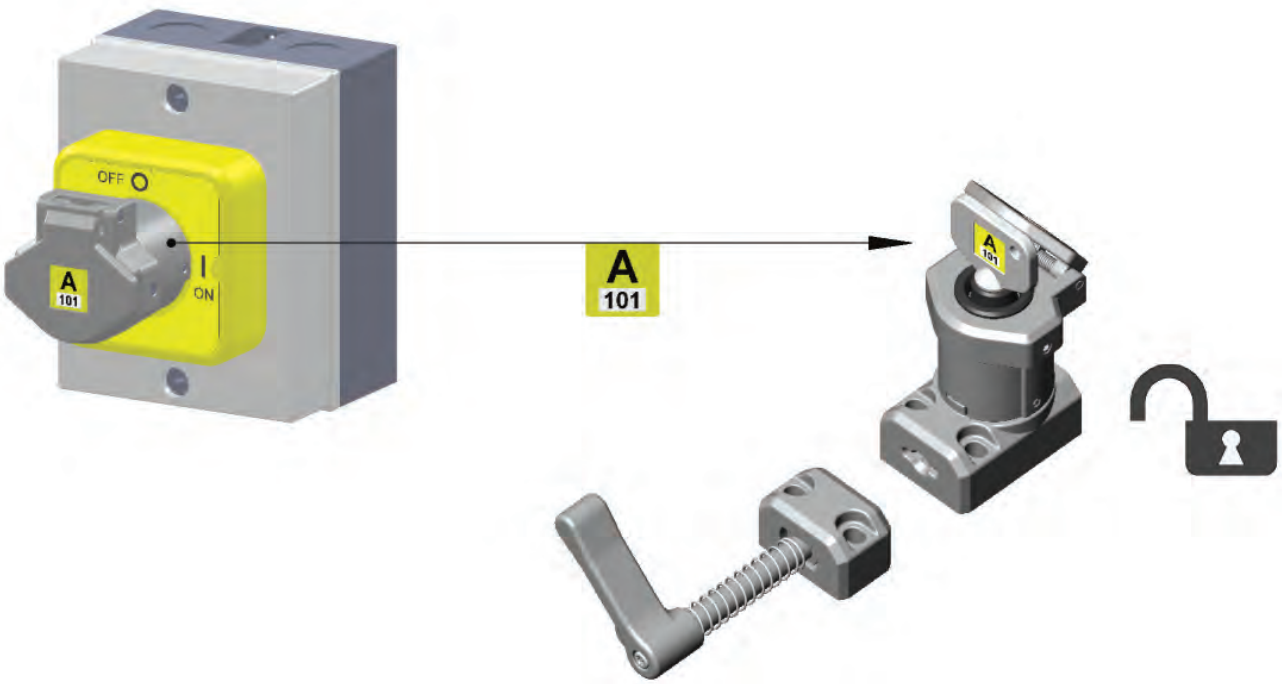
ACTUATOR TYPES				
	140107 (A Standard)	140108 (F Flat)	140110 (HF Flexible)	140111 (HFH S/Steel Flexible)
Quantity				

SKORPION Trapped Key Interlocking with Key Exchange

BASIC SYSTEM EXAMPLE:



POSITION 1: MACHINE POWER ON - GUARD LOCKED (ACCESS IS DENIED TO OPERATOR)



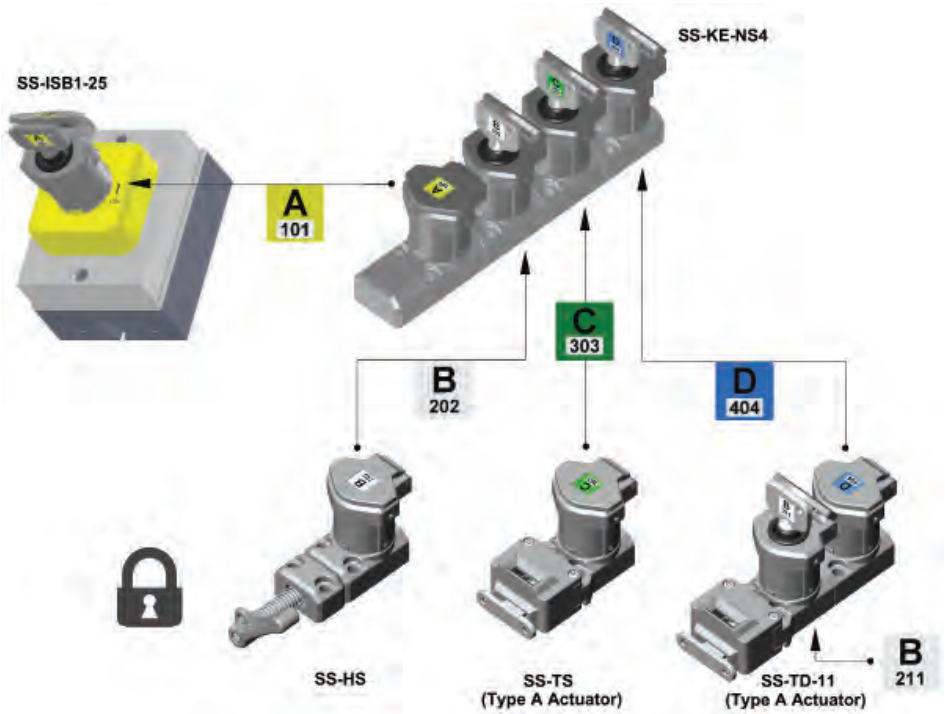
POSITION 2: MACHINE POWER OFF - GUARDS UNLOCKED (ACCESS AVAILABLE TO OPERATOR)

SKORPION TRAPPED KEY ORDER FORM/TEMPLATE - TK1 (for Example 2)					
ORDER	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Part Number	SS-ISB1-25	SS-HS			
	CODE	CODE	CODE	CODE	CODE
Key Fob Code	A101				
Key Status	Out	Trapped			

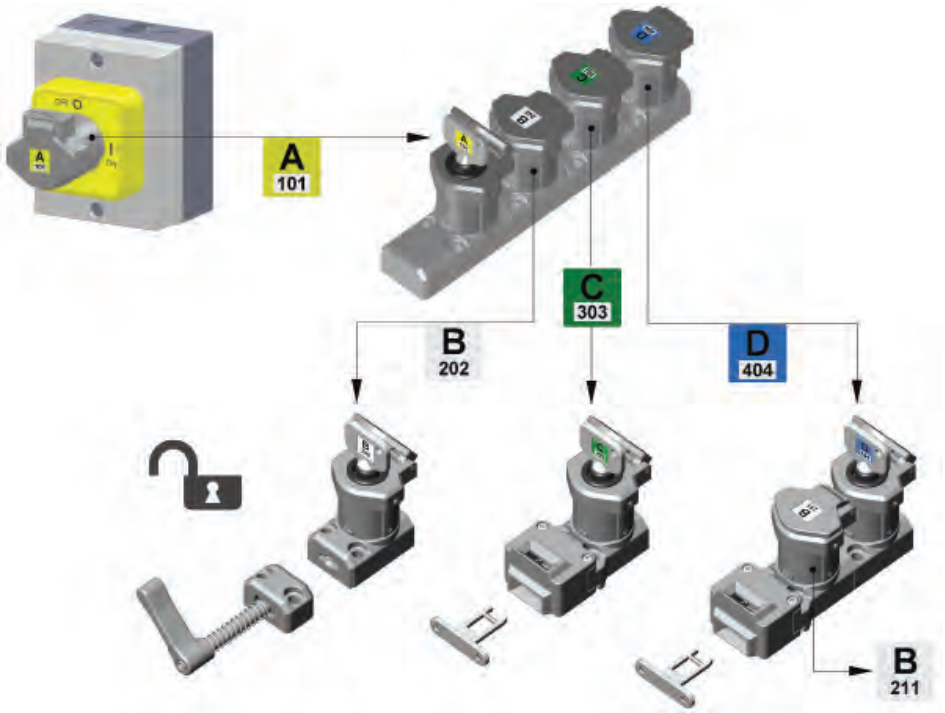
ACTUATOR TYPES				
	140107 (A Standard)	140108 (F Flat)	140110 (HF Flexible)	140111 (HFH S/Steel Flexible)
Quantity	0	0	0	0

SKORPION Trapped Key Interlocking with Key Exchange

EXAMPLE 2: COMPLEX SYSTEM



POSITION 1: MACHINE POWER ON - GUARDS LOCKED (ACCESS IS DENIED TO OPERATOR)



POSITION 2: MACHINE POWER OFF - GUARDS UNLOCKED (ACCESS AVAILABLE TO OPERATOR)

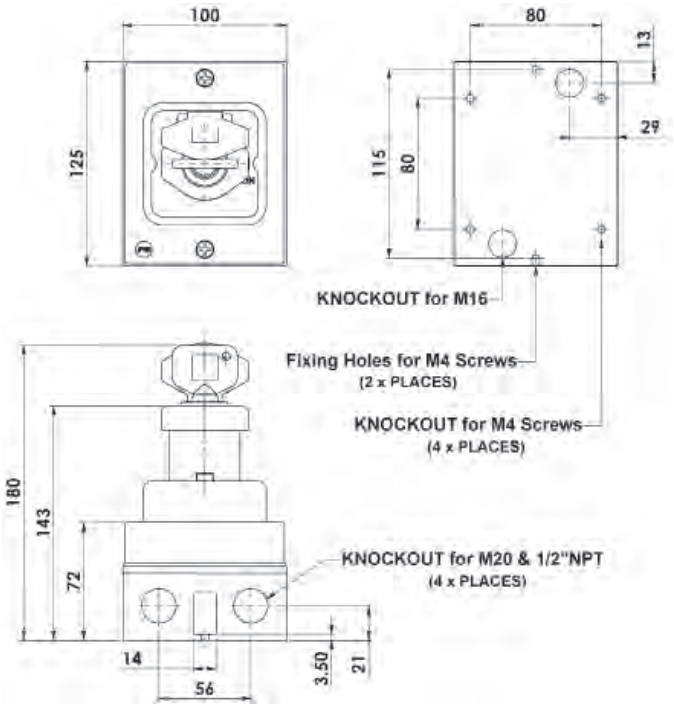
SKORPION TRAPPED KEY ORDER FORM/TEMPLATE - TK1 (for Example 2)					
ORDER	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Part Number	SS-ISB1-25	SS-KE-NS4	SS-HS	SS-TS	SS-TD-11
	CODE	CODE	CODE	CODE	CODE
Key Fob Code	A101	A101 B202 C303 D404	B202	C303	D404 B211
Key Status	Out	Trapped / Out / Out / Out	Trapped	Trapped	Trapped / Out

ACTUATOR TYPES				
	140107 (A Standard)	140108 (F Flat)	140110 (HF Flexible)	140111 (HFH S/Steel Flexible)
Quantity	2	0	0	0

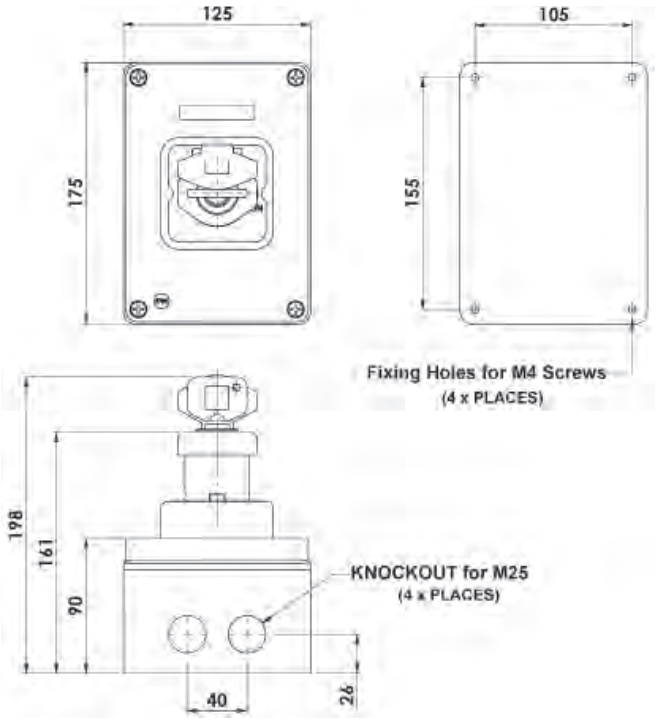
SKORPION Trapped Key Interlocking with Key Exchange

PRODUCT DIMENSIONS:

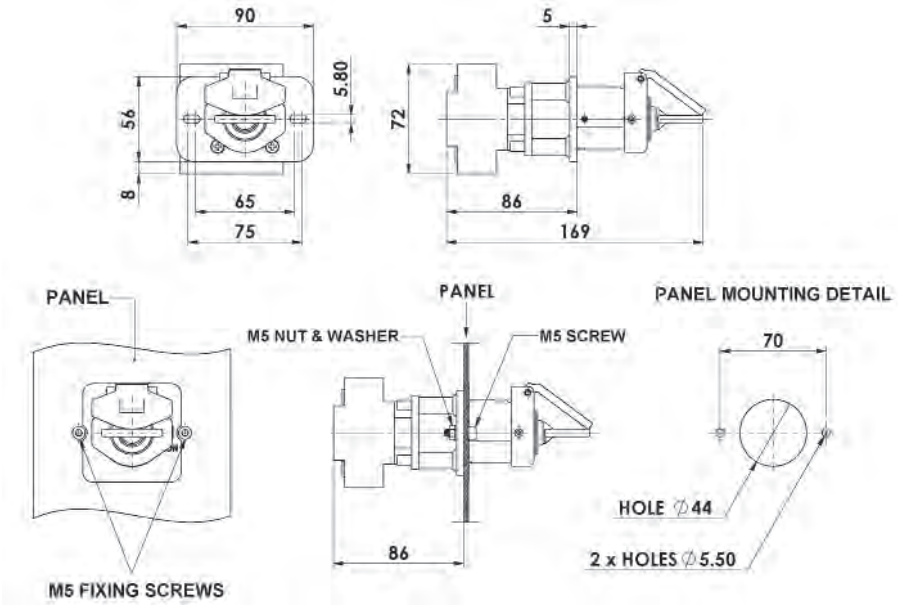
Isolation Switch Boxes Models ISB1-25 and ISB1-40



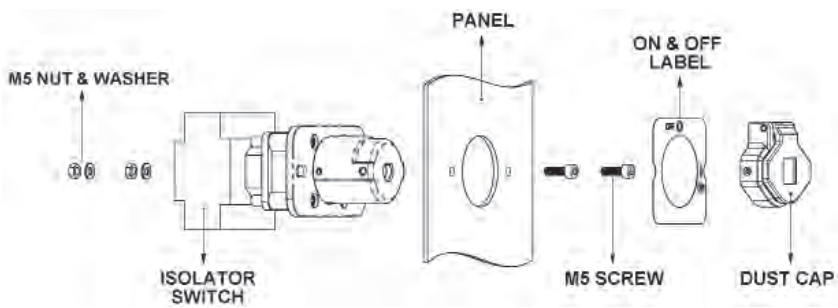
Isolation Switch Box Model ISB2-63



Isolation Switch Panel Models ISP-25, ISP-40 and ISP-63



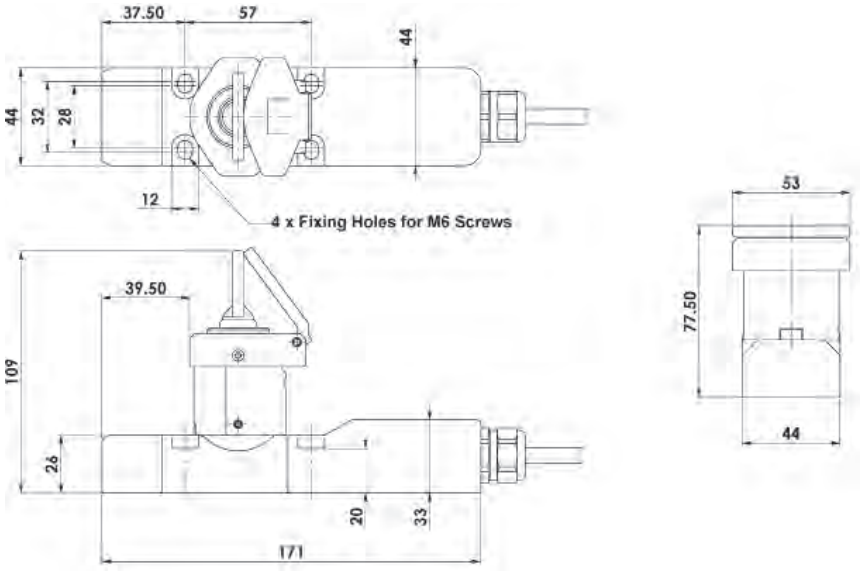
Isolation Switch Panel Mount ISP-25, ISP-40 and ISP-63 Fitting Diagram



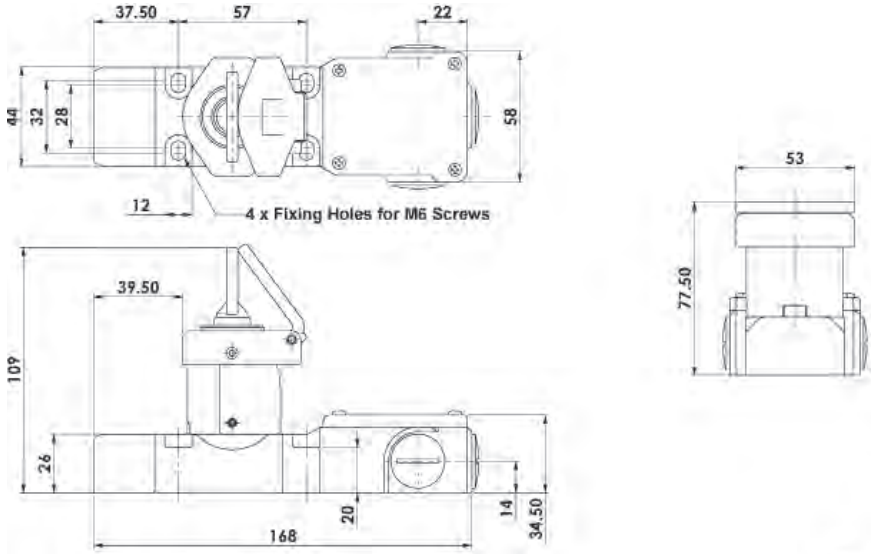
SKORPION Trapped Key Interlocking with Key Exchange

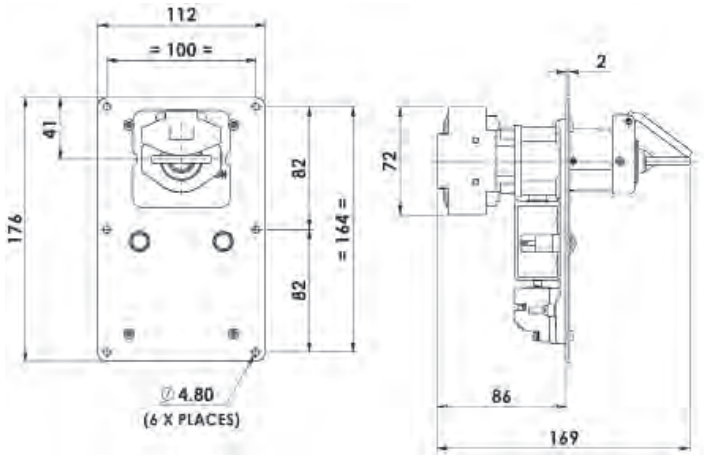
PRODUCT DIMENSIONS:

Control Switch Model ISB-CB-EX

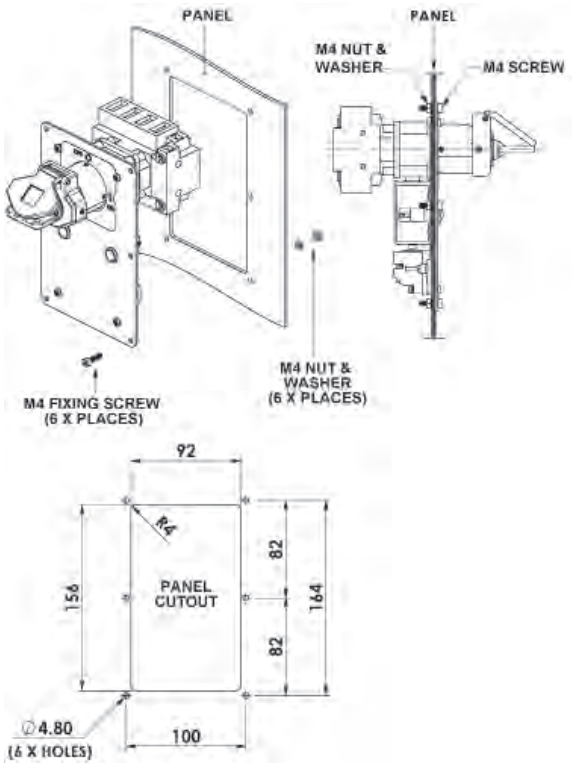


Control Switch Model ISB-CB-M





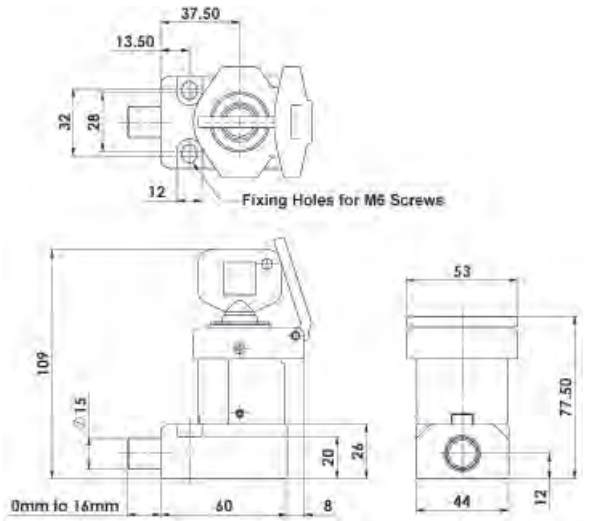
Isolation Switch Panel Model ISP-SKR



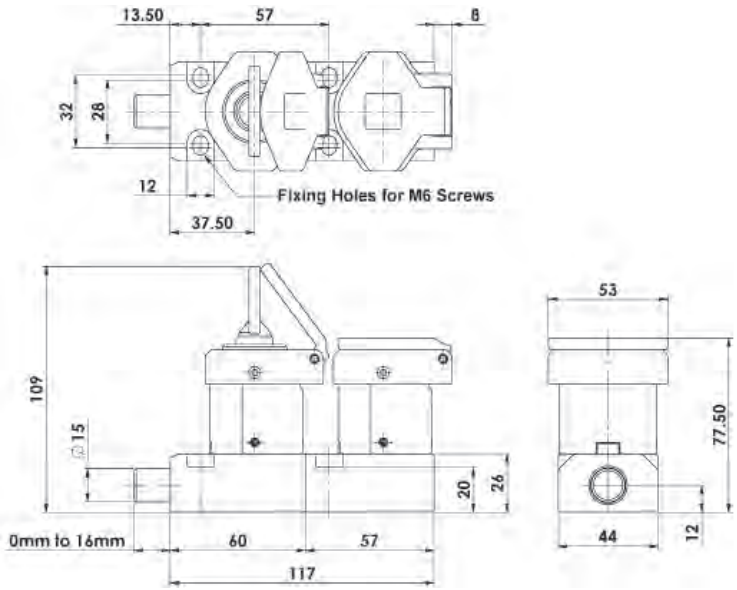
Isolation Switch Panel Mount ISP-SKR - Fitting Diagram

PRODUCT DIMENSIONS:

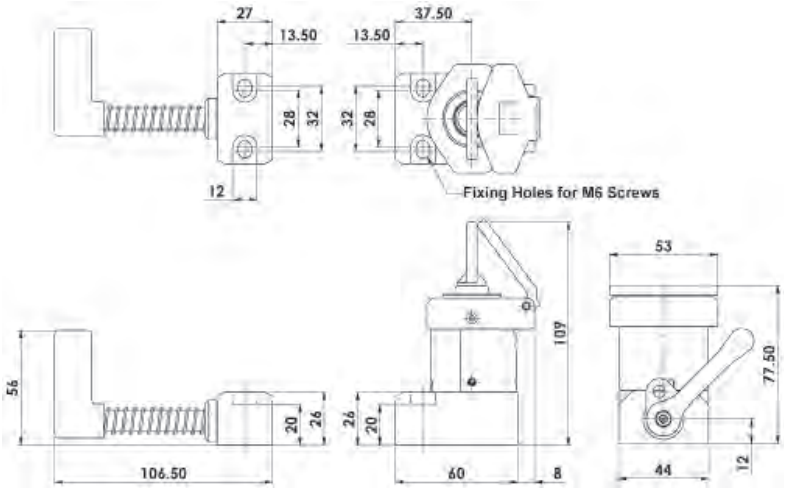
Bolt Interlock Model BS



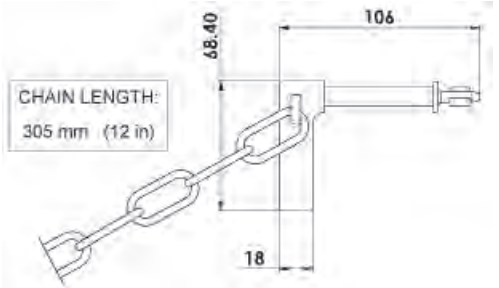
Bolt Interlock Dual Key Model BD



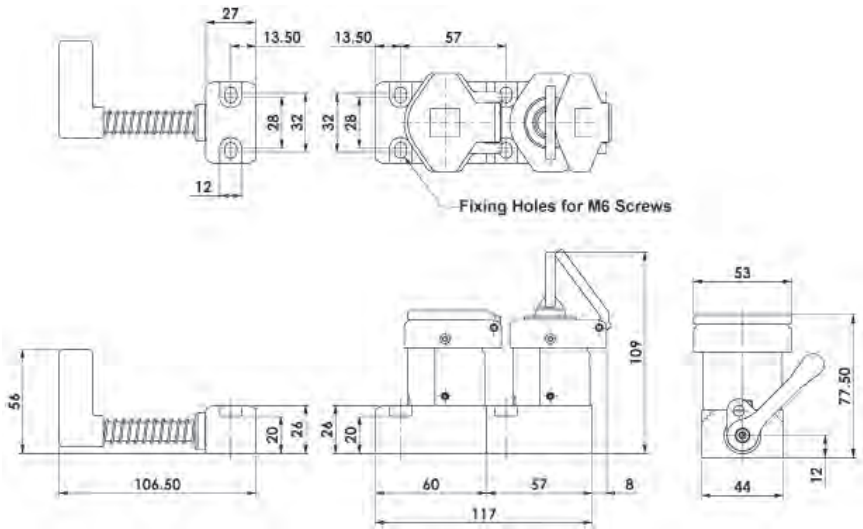
Handle Interlock Model HS



Handle with Chain



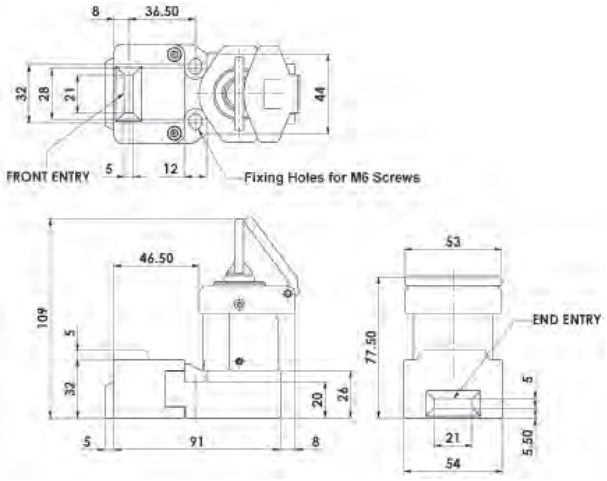
Handle Interlock Dual Key Model HS-11



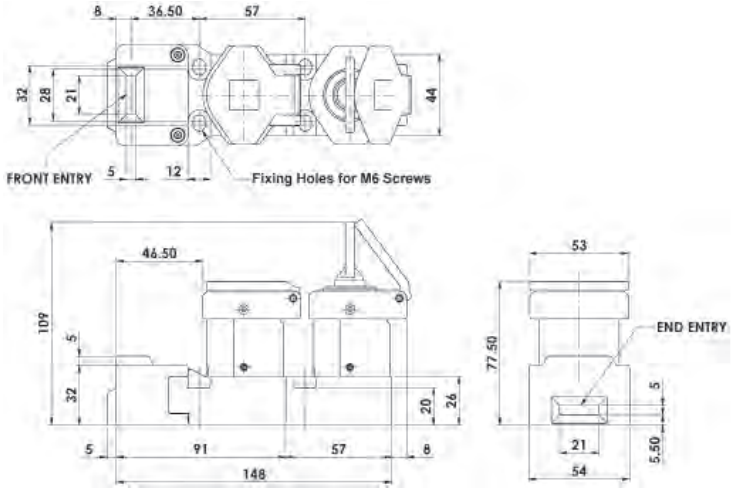
SKORPION Trapped Key Interlocking with Key Exchange

PRODUCT DIMENSIONS:

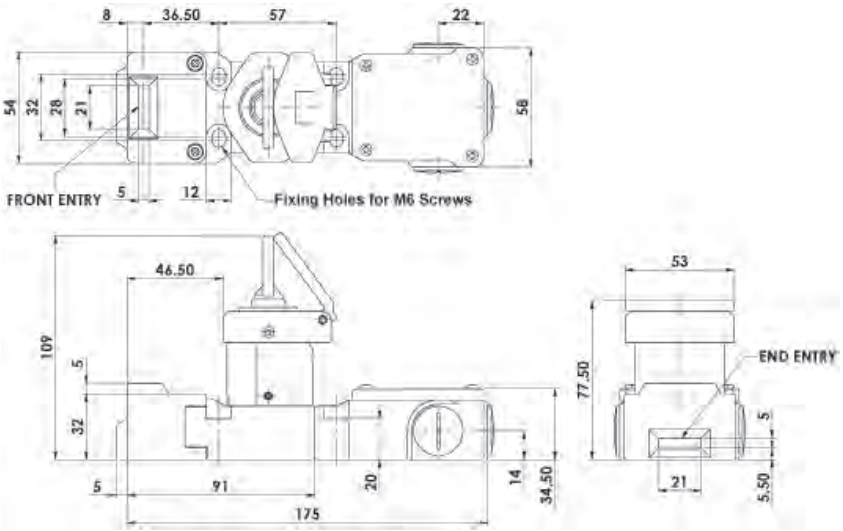
Tongue Interlock Model TS



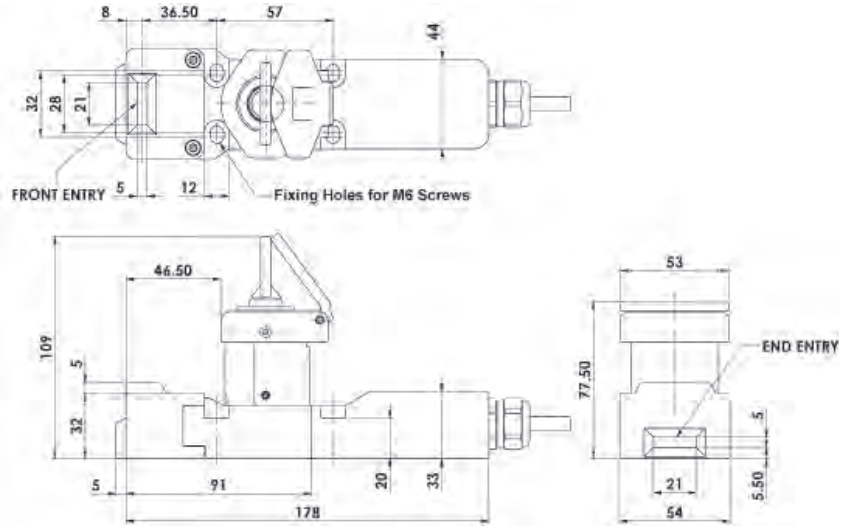
Tongue Interlock Model TD-11



Tongue Interlock with Contact Block Model TS-CB



Explosion Proof Tongue Interlock with EX Proof Contact Block Model TS-CB-EX



Product Weights

EXPLOSION PROOF SAFETY SWITCHES:

SWITCH NAME	WEIGHT OF SWITCH	WEIGHT OF SWITCH FITTED WITH 5M CABLE	WEIGHT OF SWITCH FITTED WITH 10M CABLE	WEIGHT OF SWITCH FITTED WITH 3M 4-CORE CABLE	WEIGHT OF SWITCH FITTED WITH 3M 8-CORE CABLE
CM1-Ex		610gr 1.35lbs	840gr 1.85lbs		
CM2-Ex		570gr 1.25lbs	800gr 1.75lbs		
CM3-Ex		520gr 1.15lbs	750gr 1.65lbs		
LM-Ex		415gr 0.90lbs	645gr 1.45lbs		
WM1-Ex		615gr 1.35lbs	845gr 1.85lbs		
WM2-Ex		615gr 1.35lbs	845gr 1.85lbs		
RM-Ex		445gr 1.00lbs	675gr 1.50lbs		
ESL-SS-Ex 3m	1285gr 2.85lbs				
ESL-SS(P)-Ex 3m	1395gr 3.10lbs				
GLES_Ex 3m	950gr 2.10lbs				
GLES-SS-Ex 3m	2250gr 4.95lbs				
GLHD-Ex 3m	1550gr 3.40lbs				
GLHR-Ex 3m	1230gr 2.70lbs				
GLHL-Ex 3m	1230gr 2.70lbs				
GLHD-SS-Ex 3m	3050gr 6.70lbs				
GLHR-SS-Ex 3m	2650gr 5.85lbs				
GLHL-SS-Ex 3m	2650gr 5.85lbs				
GLS-Ex 3m	970gr 2.10lbs				
GLS-SS-Ex 3m	2045gr 4.50lbs				
KP-Ex				375gr 0.85lbs	475gr 1.05lbs
K-SS-Ex				850gr 1.90lbs	950gr 2.10lbs
KM-Ex				550gr 1.15lbs	650gr 1.45lbs
KM-SS-Ex				890gr 1.95lbs	990gr 2.15lbs

*All weights are approximate.

TONGUE OPERATED SAFETY INTERLOCK SWITCHES:

SWITCH NAME	WEIGHT OF SWITCH	WEIGHT WITH ANGLED ACTUATOR	WEIGHT WITH STANDARD ACTUATOR	WEIGHT WITH FLAT ACTUATOR	WEIGHT WITH PLASTIC FLEXIBLE ACTUATOR	WEIGHT WITH HEAVY DUTY FLEXIBLE ACTUATOR	WEIGHT WITH HEAVY DUTY STAINLESS STEEL ACTUATOR
INCH-1	110gr 0.24lbs	122gr 0.27lbs		122gr 0.27lbs	127gr 0.28lbs		
INCH-3	120gr 0.26lbs	132gr 0.29lbs		132gr 0.29lbs	137gr 0.30lbs		
IDIS-1	95gr 0.21lbs	107gr 0.23lbs		107gr 0.23lbs	112gr 0.25lbs		
IDIS-2 with Actuator	110gr 0.24lbs						
K-15	145gr 0.32lbs		175gr 0.36lbs	175gr 0.36lbs	190gr 0.42lbs	120gr 0.26lbs	225gr 0.50lbs
K-15 (with S/Steel Head)	280gr 0.62lbs		310gr 0.68lbs	310gr 0.68lbs	325gr 0.67lbs	345gr 0.76lbs	360gr 0.79lbs
KP	160gr 0.35lbs		195gr 0.43lbs	195gr 0.43lbs	205gr 0.45lbs	225gr 0.50lbs	240gr 0.53lbs
KP (with S/Steel Head)	290gr 0.64lbs		320gr 0.70lbs	320gr 0.70lbs	335gr 0.74lbs	355gr 0.78lbs	370gr 0.82lbs
KM	340gr 0.75lbs		370gr 0.81lbs	370gr 0.81lbs	385gr 0.85lbs	405gr 0.89lbs	420gr 0.93lbs
KM (with S/Steel Head)	420gr 0.93lbs		450gr 0.99lbs	450gr 0.99lbs	465gr 1.02lbs	485gr 1.07lbs	500gr 1.10lbs
MK1-SS	305gr 0.67lbs	317gr 0.70lbs		317gr 0.70lbs	322gr 0.71lbs		
K-SS	635gr 1.40lbs		665gr 1.47lbs	665gr 1.47lbs	680gr 1.50lbs	700gr 1.54lbs	715gr 1.58lbs
KM-SS	695gr 1.53lbs		725gr 1.56lbs	725gr 1.56lbs	740gr 1.63lbs	760gr 1.68lbs	775gr 1.71lbs

*All weights are approximate.

GUARD LOCKING SAFETY INTERLOCK SWITCHES:

SWITCH NAME	WEIGHT OF SWITCH	WEIGHT WITH STANDARD ACTUATOR	WEIGHT WITH FLAT ACTUATOR	WEIGHT WITH HEAVY DUTY FLEXIBLE ACTUATOR	WEIGHT WITH HEAVY DUTY S/STEEL ACTUATOR	WEIGHT WITH 5M CABLE	WEIGHT WITH 10M CABLE	WEIGHT WITH QC CABLE
KL1-P	570gr 1.25lbs	600gr 1.30lbs	600gr 1.30lbs	635gr 1.40lbs	650gr 1.45lbs			
KLP	575gr 1.30lbs	605gr 1.35lbs	605gr 1.35lbs	640gr 1.40lbs	655gr 1.45lbs			
KLM	770gr 1.70lbs	800gr 1.80lbs	800gr 1.80lbs	835gr 1.85lbs	850gr 1.85lbs			
KLM (with S/Steel head)	795gr 1.75lbs	825gr 1.85lbs	825gr 1.85lbs	860gr 1.90lbs	875gr 1.95lbs			
KLP-P2L	585gr 1.30lbs	615gr 1.35lbs	615gr 1.35lbs	650gr 1.45lbs	665gr 1.45lbs			
KLM-P2L	780gr 1.70lbs	810gr 1.80lbs	810gr 1.80lbs	845gr 1.85lbs	860gr 1.90lbs			
KLM-P2L (with S/Steel Head)	805gr 1.80lbs	835gr 1.85lbs	835gr 1.85lbs	870gr 1.90lbs	885gr 1.95lbs			
KLTM	1100gr 2.40lbs	1130gr 2.50lbs	1130gr 2.50lbs	1165gr 2.60lbs	1180gr 2.60lbs			
KLTM-RFID (with Actuator)	1170gr 2.60lbs							
KL1-SS	875gr 1.95lbs	905gr 2.00lbs	905gr 2.00lbs	940gr 2.10lbs	965gr 2.10lbs			
KL3-SS	1290gr 2.85lbs	1320gr 2.90lbs	1320gr 2.90lbs	1350gr 3.00lbs	1370gr 3.00lbs			
KL4-SS	1350gr 3.00lbs	1380gr 3.05lbs	1380gr 3.05lbs	1405gr 3.10lbs	1410gr 2.90lbs			
KLT-SS	2030gr 4.50lbs	2060gr 4.55lbs	2060gr 4.55lbs	2095gr 4.60lbs	2110gr 4.65lbs			
KLT-SS-RFID (with Actuator)	2100gr 4.65lbs							
KL3-SS-P2L	1300gr 2.70lbs	1330gr 2.95lbs	1330gr 2.95lbs	1365gr 3.05lbs	1380gr 2.85lbs			
KLM-RR	890gr 1.95lbs	920gr 2.00lbs	920gr 2.05lbs	955gr 2.10lbs	970gr 2.15lbs			
KL3-SS-RR	1410gr 2.90lbs	1440gr 3.20lbs	1440gr 3.20lbs	1475gr 3.05lbs	1490gr 3.30lbs			
KLTM-RR	1220gr 2.70lbs	1250gr 2.75lbs	1250gr 2.75lbs	1285gr 2.85lbs	1300gr 2.70lbs			
KLT-SS-RR	2150gr 4.75lbs	2180gr 4.80lbs	2180gr 4.80lbs	2215gr 4.90lbs	2230gr 4.90lbs			
MGL-1P						1975gr 4.05lbs	2240gr 4.60lbs	1740gr 3.85lbs
MGL-2P						1260gr 2.60lbs	1525gr 3.35lbs	1020gr 2.25lbs
MGL-1SS						2600gr 5.75lbs	2865gr 6.30lbs	2360gr 5.20lbs
MGL-2SS						1740gr 3.85lbs	2005gr 4.40lbs	1500gr 3.30lbs

*All weights are approximate.

Product Weights

CODED NON CONTACT SAFETY SWITCHES (all weights include Switch & Actuator):

SWITCH NAME	WEIGHT OF SWITCH & ACTUATOR FITTED WITH 2M CABLE	WEIGHT OF SWITCH & ACTUATOR FITTED WITH 5M CABLE	WEIGHT OF SWITCH & ACTUATOR FITTED WITH 10M CABLE	WEIGHT OF SWITCH & ACTUATOR FITTED WITH QC M12 CABLE
MPC (Idecode)	145gr 0.32lbs	395gr 0.87lbs	645gr 1.42lbs	65gr 0.14lbs
LPC (Eurocode)	185gr 0.38lbs	325gr 0.72lbs	575gr 1.27lbs	105gr 0.23lbs
SPC (Idecode)	165gr 0.34lbs	305gr 0.63lbs	555gr 1.22lbs	85gr 0.19lbs
CPC (Idecode)	185gr 0.38lbs	325gr 0.72lbs	575gr 1.27lbs	105gr 0.23lbs
WPC (Idecode)	215gr 0.47lbs	255gr 0.56lbs	605gr 1.33lbs	135gr 0.30lbs
RPC (Idecode)	190gr 0.42lbs	330gr 0.73lbs	580gr 1.28lbs	110gr 0.24lbs
KPC (Kobracode)	240gr 0.52lbs	380gr 0.84lbs	630gr 1.39lbs	160gr 0.35lbs
MMC-H (Hygiecode)	220gr 0.48lbs	360gr 0.80lbs	610gr 1.35lbs	140gr 0.31lbs
SMC (Hygiecode)	230gr 0.51lbs	370gr 0.82lbs	620gr 1.37lbs	150gr 0.33lbs
SMC-F (Hygiecode)	230gr 0.51lbs	370gr 0.82lbs	620gr 1.37lbs	150gr 0.33lbs
SMC-H (Hygiecode)	230gr 0.51lbs	370gr 0.82lbs	620gr 1.37lbs	150gr 0.33lbs
LMC (Hygiecode)	290gr 0.64lbs	430gr 0.95lbs	680gr 1.50lbs	210gr 0.46lbs
CMC (Hygiecode)	340gr 0.75lbs	480gr 1.05lbs	730gr 1.61lbs	260gr 0.57lbs
CMC-F (Hygiecode)	340gr 0.75lbs	480gr 1.05lbs	730gr 1.61lbs	260gr 0.57lbs
WMC (Hygiecode)	415gr 0.92lbs	555gr 1.22lbs	805gr 1.78lbs	335gr 074lbs
RMC (Hygiecode)	300gr 0.66lbs	440gr 0.97lbs	690gr 1.52lbs	220gr 0.48lbs

*All weights are approximate.

MAGNETIC NON CONTACT SAFETY SWITCHES (all weights include Switch & Actuator):

SWITCH NAME	WEIGHT OF SWITCH & ACTUATOR FITTED WITH 2M CABLE	WEIGHT OF SWITCH & ACTUATOR FITTED WITH 5M CABLE	WEIGHT OF SWITCH & ACTUATOR FITTED WITH 10M CABLE	WEIGHT OF SWITCH & ACTUATOR FITTED WITH QC M12 CABLE
MPR (Idemag)	150gr 0.33lbs	290gr 0.64lbs	540gr 1.19lbs	70gr 0.15lbs
SPR (Idemag)	170gr 0.37lbs	310gr 0.68lbs	560gr 1.23lbs	90gr 0.20lbs
LPR (Euromag)	190gr 0.42lbs	330gr 0.73lbs	580gr 1.28lbs	110gr 0.24lbs
LPR (LED) (Euromag)	190gr 0.42lbs	330gr 0.73lbs	580gr 1.28lbs	110gr 0.24lbs
CPR (Idemag)	190gr 0.42lbs	330gr 0.73lbs	580gr 1.28lbs	110gr 0.24lbs
WPR (Idemag)	220gr 0.49lbs	360gr 0.79lbs	610gr 1.35lbs	140gr 0.31lbs
RPR (Idemag)	195gr 0.43lbs	335gr 0.74lbs	585gr 1.30lbs	115gr 0.25lbs
MMR-H (Hygiemag)	230gr 0.51lbs	370gr 0.81lbs	620gr 1.37lbs	150gr 0.33lbs
SMR (Hygiemag)	240gr 0.53lbs	380gr 0.84lbs	630gr 1.39lbs	160gr 0.35lbs
SMR-H (Hygiemag)	240gr 0.53lbs	380gr 0.84lbs	630gr 1.39lbs	160gr 0.35lbs
SMR-F (Hygiemag)	240gr 0.53lbs	380gr 0.84lbs	630gr 1.39lbs	160gr 0.35lbs
LMR (Hygiemag)	295gr 0.65lbs	435gr 0.96lbs	685gr 1.51lbs	215gr 0.47lbs
LMR (LED) (Hygiemag)	295gr 0.65lbs	435gr 0.96lbs	685gr 1.51lbs	215gr 0.47lbs
CMR (Hygiemag)	370gr 0.82lbs	510gr 1.12lbs	760gr 1.68lbs	290gr 0.64lbs
CMR-F (Hygiemag)	370gr 0.82lbs	510gr 1.12lbs	760gr 1.68lbs	290gr 0.64lbs
WMR (Hygiemag)	415gr 0.92lbs	565gr 1.25lbs	815gr 1.80lbs	345gr 0.76lbs
RMR (Hygiemag)	315gr 0.70lbs	455gr 1.00lbs	705gr 1.55lbs	235gr 0.52lbs
PSA (Standalone)	245gr 0.54lbs	385gr 0.85lbs	635gr 1.40lbs	165gr 0.36lbs
MSA (Standlaone)	530gr 1.17lbs	670gr 1.48lbs	920gr 2.03lbs	450gr 0.99lbs
LPF-RFID	200gr 0.44lbs	340gr 0.75lbs	590gr 1.30lbs	120gr 0.26lbs
SPF-RFID	175gr 0.39lbs	315gr 0.70lbs	565gr 1.24lbs	95gr 0.21lbs
LP-SEN (RFID)	200gr 0.44lbs	340gr 0.75lbs	590gr 1.31lbs	120gr 0.26lbs

*All weights are approximate.

GUARDIAN LINE ROPE PULL SAFETY SWITCHES:

SWITCH NAME	WEIGHT OF SWITCH	WEIGHT OF SWITCH FITTED WITH E-STOP	WEIGHT OF SWITCH FITTED WITH LED	WEIGHT OF SWITCH FITTED WITH E-STOP & LED
GLM	640gr 1.40lbs	690gr 1.50lbs	675gr 1.50lbs	725gr 1.60lbs
GLM-SS	1600gr 3.50lbs	1650gr 3.60lbs	1675gr 3.60lbs	1685gr 3.70lbs
GLS	735gr 1.60lbs	785gr 1.75lbs	770gr 1.70lbs	820gr 1.80lbs
GLS-SS	1815gr 3.75lbs	1865gr 4.10lbs	1850gr 4.10lbs	1900gr 4.20lbs
GLS-AR	760gr 1.70lbs			
GLS-SS-AR	1780gr 3.95lbs			
GLHD	1350gr 3.00lbs	1400gr 3.10lbs	1385gr 3.05lbs	1435gr 3.15lbs
GLHR	1030gr 2.25lbs	1080gr 2.40lbs	1065gr 2.35lbs	1115gr 2.45lbs
GLHL	1030gr 2.25lbs	1080gr 2.40lbs	1065gr 2.35lbs	1115gr 2.45lbs
GLHD-SS	2855gr 6.30lbs	2905gr 6.40lbs	2890gr 6.35lbs	2940gr 6.50lbs
GLHR-SS	2475gr 5.45lbs	2525gr 5.55lbs	2510gr 5.50lbs	2560gr 5.65lbs
GLHL-SS	2475gr 5.45lbs	2525gr 5.55lbs	2510gr 5.50lbs	2560gr 5.65lbs

*All weights are approximate.

Product Weights

EMERGENCY STOP SWITCHES:

SWITCH NAME	WEIGHT OF SWITCH
ES-P	295gr 0.65lbs
ES-SS	850gr 1.85lbs
ES-SS(P)	1000gr 2.20lbs
ESL-SS	1060gr 2.35lbs
ESL-SS(P)	1170gr 2.60lbs
ESL-SS(L)	1100gr 2.40lbs
ESL-SS(LP)	1190gr 2.63lbs
GLES	765gr 1.70lbs
GLES-SS	2050gr 4.50lbs

*All weights are approximate.

SAFETY RELAYS:

SAFETY RELAY NAME	WEIGHT OF RELAY
SCR-21-i	160gr 0.35lbs
SCR-31-i	160gr 0.35bs
SCR-31-P-i	160gr 0.35lbs
SCR-73-i	300gr 0.70lbs
SCR-31-42-TD-i	300gr 0.70lbs
SEU-31-i	160gr 0.35lbs
SCR-31-TD-i	160gr 0.35lbs

SAFETY RELAY NAME	WEIGHT OF RELAY
SCR-1	160gr 0.35lbs
SCR-2	170gr 0.37lbs
SCR-3	160gr 0.35lbs
SCR-4-TD	225gr 0.50lbs
SEU-1 (Expansion Module)	170gr 0.37lbs
SEU-TD-1	175gr 0.38lbs
SCR-2H	200gr 0.44lbs
SCR-7	300gr 0.66lbs

*All weights are approximate.

GATE BOLTS:

GATE BOLT NAME	WEIGHT OF GATE BOLT	WEIGHT OF REAR RELEASE HANDLE (if added)
GBL-1 (Left or Right)	1870gr 4.15lbs	35gr 0.10lbs
GBA-1 (Left or Right)	1705gr 3.90lbs	35gr 0.10lbs

*All weights are approximate.

LIMIT SWITCHES:

SWITCH NAME	WEIGHT OF SWITCH	EX VERSION FITTED WITH 3M 4-CORE CABLE	EX VERSION FITTED WITH 3M 8-CORE CABLE
HLM-SRL	420gr 0.93lbs	630gr 1.39lbs	730gr 1.61lbs
HLM-RP	395gr 0.87lbs	605gr 1.33lbs	705gr 1.55lbs
HLM-PP	375gr 0.83lbs	585gr 1.29lbs	685gr 1.51lbs
HLM-SL	400gr 0.88lbs	610gr 1.35lbs	710gr 1.57lbs
HLM-TSL	390gr 0.86 lbs	600gr 1.32lbs	700gr 1.54lbs
HLM-SS-SRL	635gr 1.40lbs	845gr 1.86lbs	945gr 2.08lbs
HLM-SS-RP	575gr 1.27lbs	785gr 1.73lbs	885gr 1.95lbs
HLM-SS-PP	550gr 1.21lbs	760gr 1.68lbs	860gr 1.90lbs
HLM-SS-SL	525gr 1.16lbs	735gr 1.62lbs	835gr 1.84lbs
HLM-SS-TSL	610gr 1.35lbs	820gr 1.81lbs	920gr 2.02lbs
LSPS-PP	65gr 0.14lbs		
LSPS-RP	75gr 0.16lbs		
LSPS-HL	65gr 0.14lbs		
LSPS-LHL	70gr 0.15lbs		
LSPS-RL	90gr 0.20lbs		
LSPS-ARL	95gr 0.21lbs		
LSPS-LRL	110gr 0.24lbs		
LSPS-LA	95gr 0.21lbs		
LSPS-CW	80gr 0.17lbs		
LSPS-PSL	95gr 0.21lbs		
LSPS-SL	125gr 0.28lbs		
LSPS-PP-R	70gr 0.15lbs		
LSPS-RP-R	80gr 0.17lbs		
LSPS-HL-R	70gr 0.15lbs		
LSPS-LHL-R	75gr 0.16lbs		
LSPS-RL-R	95gr 0.21lbs		
LSPS-ARL-R	100gr 0.22lbs		
LSPS-LRL-R	115gr 0.25lbs		
LSPS-LA-R	100gr 0.22lbs		
LSPM-PP	260gr 0.57lbs		
LSPM-RP	270gr 0.60lbs		
LSPM-CR	220gr 0.49lbs		
LSPM-PPP	270gr 0.60lbs		
LSPM-PRP	280gr 0.62lbs		
LSPM-PCR	270gr 0.60lbs		
LSPM-RL	295gr 0.65lbs		
LSMM-PP	255gr 0.56lbs		
LSMM-RP	310gr 0.68lbs		
LSMM-CR	305gr 0.67lbs		
LSMM-PPP	310gr 0.68lbs		
LSMM-PRP	280gr 0.62lbs		
LSMM-PCR	275gr 0.61lbs		
LSMM-RL	295gr 0.65lbs		

*All weights are approximate.