

Non-contact safety switches .....	506
Safety switches .....	513
Solenoid, gate and rope switches .....	516



## BNS260 – Compact magnetic safety switch



BNS260 coded magnetic safety switches are designed for use in machinery which needs a constant stop cycle for human intervention of the machine cycle.

... for recommended **SRB series safety relays**



See pages 486-488

### Features

- 1 NC/1 NO (anti-valent switching) or 2 NC contacts
- For left or right opening guards
- Compact size
- Concealed mounting possible
- No mechanical wear
- Insensitive to transverse misalignment
- LED indication

Mission Time	20 years
Bitol value	25 million

### Technical specification

Switching frequency	..... max. 5Hz
Switching voltage	..... max. 24V d.c.
Switching current	..... max. 10mA
Switching capacity	..... max. 240mW
Ensured switch distance:	..... On - 5mm Off - 15mm
Connection	..... 6 x 0.25mm 1m cable M8 x 6pin plug with 5m lead
Protection	..... IP67
Dimensions	..... h26 x w36 x d13mm

Contacts	Guards	Cable Connection		Plug Connection	
		Order Code	List Price	Order Code	List Price
1 NC/1 NO	Left hand	BNS260-11/01ZG-L	£58.46	BNS260-11/01ZG-ST-L	£66.54
1 NC/1 NO	Right hand	BNS260-11/01ZG-R	£58.46	BNS260-11/01ZG-ST-R	£66.54
2 NC	Left hand	BNS260-02/01ZG-L	£58.46	BNS260-02/01ZG-ST-L	£56.11
2 NC	Right hand	BNS260-02/01ZG-R	£58.46	BNS260-02/01ZG-ST-R	£56.11

### Accessories

Description	Order Code	List Price
Actuator	BPS260-1	£6.56
Actuator - 90° fixing	BPS260-2	£6.56
Cable with M8, 6-pin plug, 5m	101206011	£23.95

## RSS260 – Electronic coded safety switches



The RSS260 is a RFID safety sensor designed for applications in safety circuits and is used to monitor the position of moveable safety guards, hinged or sliding doors.

### Features

- High protection against tampering through RFID technology
- Compact, subtle and elegant design
- Easy installation without additional angles
- Universal application through different targets for typical installation situations
- Repeated universal or individual coding
- Preservation of safety levels and diagnostic capability even when connected in series

EN ISO 13849-1 Performance Level	PLe
EN 62061 SIL Claim	SIL CL 3

### Technical specification

Sensing distance	..... 12mm
Supply requirements	..... 24V d.c., 0.6A
Switching capacity	..... 24V d.c., 250mA
Inputs	..... 2
Outputs	..... 2 x OSSD, 1 x diagnostic
Serial diagnostics	..... Yes
Connection	..... M8, 8-pin
Ambient temperature	..... -25 to +65°C
Housing material	..... Thermoplastic
Protection	..... IP65/IP67
Dimensions	..... h40 x w18 x d29.5mm

Description	Order Code	List Price
Standard coding	RSS260-D-ST	£86.91
Individual coding with teach	RSS260-I2-D-ST	£124.97

### Actuators

Description	Order Code	List Price
Sliding door actuator	RST16-1	£14.16
Plexiglass door actuator	RST-U-2	£14.16
Swivel door frame actuator	RST260-1	£14.16

### Accessories

Description	Order Code	List Price
Cable with M8, 8-pin connector, 2m	A-K8P-M8-S-G-2M-BK-2-X-A-4	£24.24
Cable with M8, 8-pin connector, 5m	A-K8P-M8-S-G-5M-BK-2-X-A-4	£32.24



## RSS I6 – Electronic coded safety switches



The RSS I6 safety sensor is based on the AZI6 classic switch. This versatile construction is now available as a non-contact system using RFID technology, suitable for the most demanding safety applications.

The non-contact operation provides a high tolerance to door misalignment and a latching sensor option is available with a 60N locking force to hold the door in position.

### Features

- Encoding level "high" according to ISO 14119 with an individual RFID code
- Three encoding options for demand-protection against manipulation
- Three actuating directions
- Door stop with magnetic latching function
- Connection terminal or plug connection

EN ISO 13849-1 Performance Level	PLe
EN 62061 SIL Claim	SIL CL 3

### Technical specification

Sensing distance	..... 15mm
Supply requirements	..... 24V d.c., 2.1A
Switching capacity	..... 24V d.c., 1A
Number of inputs	..... 2
Number of outputs	..... 2 x OSSD, 1 x diagnostic
Serial diagnostics	..... Yes
Latching option	..... 40N front holding force
Connection	..... Screw terminal/M12, 8-pin
Ambient temperature	..... -25 to +70°C
Housing material	..... Thermoplastic
Protection	..... IP65/IP67
Dimensions	..... h91 x w52 x d30mm

Description	Order Code	List Price
Latch function, M12 connection	RSS16-D-R-ST8H	£125.13
Individual code, M12 connection	RSS16-I2-D-ST8H	£146.39
Latch function, screw terminal	RSS16-D-R-SK	£125.13
Screw terminal	RSS16-D-SK	£108.61
Individual code latch, M12 connection	RSS16-I2-D-R-ST8H	£146.39
M12 connection	RSS16-D-ST8H	£122.78
Individual code screw terminal	RSS16-I2-D-R-SK	£153.46

### Actuators

Description	Order Code	List Price
Sliding door actuator without latching	RST16-1	£14.16
Sliding door actuator with latching	RST16-1-R	£18.89

### Accessories

Description	Order Code	List Price
Cable with M12 8-pin connector, 2.5m	A-K8P-M12-S-G-2.5M-BK-2-X-A-4-69	£37.88
Cable with M12, 8-pin connector, 5m	A-K8P-M12-S-G-5M-BK-2-X-A-4-69	£31.59



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# BNS40S – IP69K magnetic safety switches for hygienic applications



BPS40S-I



BNS40S-12ZG



BNS40S-12Z-C



EX-BNS40S

### Features

- Stainless steel enclosure
- Suitable for food processing industry
- Concealed mounting possible
- Long life
- No mechanical wear
- Insensitive to transverse misalignment
- Easy to clean through concealed threaded holes at the rear

### Technical specification

Active area	Side
Contacts	INO/INC
Ensured switch distance ON	8mm
Ensured switch distance OFF	18mm
Switch frequency	max. 5Hz
Switching voltage	max. 24V d.c.
Switching current	max. 10mA
Switching capacity	max. 240mW
Connection	6 core 1m cable
Protection	IP69K
Dimensions	h27 x w88 x d14.5mm

Mission Time	20 years
B10d value	25 million

Description	Order Code	List Price
Magnetic safety switch	BNS40S-12Z	£97.98
Magnetic safety switch with LED	BNS40S-12ZG	£103.22
Actuator (stainless steel) – mounting level	BPS40S-1	£24.49
Actuator (stainless steel) – 90° attached to sensor	BPS40S-2	£24.49

### With concealed threaded holes on reverse

Description	Order Code	List Price
Magnetic safety switch with concealed holes	BNS40S-12Z-C	£97.88
Magnetic safety switch with LED and concealed holes	BNS40S-12ZG-C	£103.22
Actuator (stainless steel) – mounting level	BPS40S-1-C	£24.49
Actuator (stainless steel) – 90° attached to sensor	BPS40S-2-C	£24.49


### ATEX explosion protection technical specification

Categories for gases	ATEX gas ex-protection, Cat. 3G	Categories for dusts	ATEX dust ex-protection, Cat. 3D
Zones for gases	2	Zones for dusts	22

### Ex certified

Description	Order Code	List Price
Magnetic safety switch with concealed holes	EX-BNS40S-12Z-C	£157.83
Magnetic safety switch with concealed holes, 5m cable	EX-BNS40S-12Z-C-5M	£173.60
Actuator (stainless steel) – mounting level	BPS40S-1-C	£24.49
Actuator (stainless steel) – 90° attached to sensor	BPS40S-2-C	£24.49

... for recommended **SRB series safety relays**



See pages 486-488

# RE1/RE2 – Magnetic safety switches



### Features

- Response range of up to 7mm (RE1) 9mm (RE2)
- Just one safety switch in conjunction with a suitable safety module makes it possible to solve applications up to PLe and Cat. 4 (EN ISO 13849)
- Direct connection to the safe control solution eliminates any additional wiring and reduces installation time
- Long service life due to durable and low-maintenance design
- Space-saving mounting due to compact housing design
- High level of machine availability due to high tolerances for door misalignment
- LED status indicator (RE27)
- Includes actuator

### Technical specification

PFHd . . . . .  $2.5 \times 10^{-8}$  (EN ISO 13849)  
 Enclosure rating . . . . . IP 67  
 Ambient temperature . . . -20° to +60 °C  
 Shock resistance . . . . . 30g, 11ms  
 (EN 60947-5-3)  
 Vibration resistance . . 10 to 55Hz, 1mm  
 (EN 60947-5-3)  
 Type of output . . . . . Reed contacts

EN ISO 13849-1 Category	<b>Cat 4</b>
EN ISO 13849-1 Performance Level	<b>PLe</b>
B10d value	<b>2 x 10<sup>7</sup></b> switching cycles

### RE1

Contacts	Connection	Safe Switch on	Safe Switch off	Order Code	List Price
1 NO/1 NC	5m cable	3mm	12mm	RE11-SA05	£34.74
1 NO/1 NC	M8 plug, 4 pin	3mm	12mm	RE11-SAC	£38.78
2 NO	5m cable	7mm	20mm	RE13-SA05	£35.02
2 NO	M8 plug, 4 pin	7mm	20mm	RE13-SAC	£38.76

### RE2

Contacts	Connection	Safe Switch on	Safe Switch off	Status Display	Order Code	List Price
1 NO/1 NC	5m cable	6mm	31mm	—	RE21-SA05	£32.85
1 NO/1 NC	M8 plug, 4 pin	6mm	31mm	—	RE21-SAC	£34.28
3 NO	5m cable	9mm	20mm	●	RE27-SA05L	£41.14
3 NO	10m cable	9mm	20mm	●	RE27-SA10L	£47.59

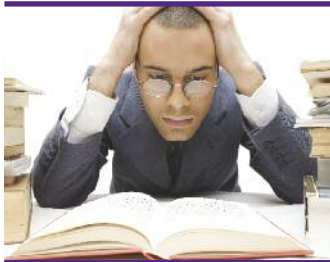
RE1/RE2 magnetic safety switches are equipped with either normally closed (NC) or normally open (NO) contacts respectively and use coded magnetic actuators.

They are easy to clean, making them suitable for contaminated areas or environments with strict hygiene standards.

Their operating principle enables greater tolerances, making them ideal for applications where precise guidance is difficult.

### Connecting cables

Description	Order Code	List Price
5m M8 4 pin female straight connector	2095889	£9.44
5m M8 4 pin female right angle connector	2095963	£9.44
10m M8 4 pin female straight connector	2095890	£13.00
10m M8 4 pin female right angle connector	2095964	£13.00



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# STR1 – Safety switch



### Technical specification

Coding . . . . . Low or high (EN ISO 13849)  
 Safe switch off distance . . . Up to 28mm  
 Active sensor surfaces . . . . . 3  
 Response time . . . . . 40ms  
 Protection . . . . . IP67  
 Ambient temperature . . . . -10 to +70°C

EN ISO 13849-1 Performance Level	PLe
EN 62061 SIL Claim	SIL CL 3

The STR1 transponder safety switch has monitored semi-conductor outputs (OSSDs) and can be safely connected either individually or in series.

It can be used for applications where a high level of manipulation protection is required. The STR1 is available with three codes. Universally coded sensors accept all actuators. An actuator must be taught into both the uniquely coded and permanently coded variants, this is the only actuator that the STR1 then accepts.

The sensor has three active sensor surfaces. The actuator comes in three different sizes. This allows the STR1 to offer maximum mounting flexibility.

### Features

- High level of flexibility when mounting the sensor and actuator
- Reduced need for storage, as one sensor is suitable for a wide range of different applications
- High level of manipulation protection due to individually coded actuator
- High level of machine availability due to large door offset tolerance and high level of shock and vibration resistance
- Economical solution due to series connection of up to 30 sensors
- Fast diagnosis via LED status indicator
- Long product service life due to low-wastage and low-maintenance configuration

Actuator	Coding	Connection	Cable	Cascadable	Order Code	List Price
Standard	Universal	M12, 5-pin	0.2m	—	STR1-SASM0AC5	£83.22
Standard	Universal	M12, 8-pin	0.2m	●	STR1-SASMOAC8	£90.70
Standard	Universal	Cable, 5 wire	3m	—	STR1-SASM03P5	£90.70
Standard	Permanent	M12, 5-pin	0.2m	—	STR1-SASF0AC5	£104.72
Standard	Permanent	M12, 8-pin	0.2m	●	STR1-SASF0AC8	£112.20
Standard	Permanent	Cable, 5 wire	3m	—	STR1-SASF03P5	£112.20
Flat	Universal	M12, 5-pin	0.2m	—	STR1-SAFM0AZ5	£90.70
Flat	Universal	M12, 8-pin	0.2m	●	STR1-SAFM0AC8	£90.70
Flat	Universal	Cable, 5 wire	3m	—	STR1-SAFM03P5	£90.70
Flat	Permanent	M12, 5-pin	0.2m	—	STR1-SAFF0AC5	£112.20
Flat	Permanent	M12, 8-pin	0.2m	●	STR1-SAFF0AC8	£112.20
Flat	Permanent	Cable, 5 wire	3m	—	STR1-SAFF03P5	£112.20
Mini	Universal	M12, 5-pin	0.2m	—	STR1-SAMM0AC5	£90.70
Mini	Universal	M12, 8-pin	0.2m	●	STR1-SAMM0AC8	£90.70
Mini	Universal	Cable, 5 wire	3m	—	STR1-SAMM03P5	£90.70
Mini	Permanent	M12, 5-pin	0.2m	—	STR1-SAMF0AC5	£112.20
Mini	Permanent	M12, 8-pin	0.2m	●	STR1-SAMF0AC8	£112.20
Mini	Permanent	Cable, 5 wire	3m	—	STR1-SAMF03P5	£112.20

### Connecting cables

Description	Order Code	List Price
2m PUR cable with M12 5 pin female straight connector, unshielded	2095617	£9.26
5m PUR cable with M12 5 pin female straight connector, unshielded	2095618	£14.77
10m PUR cable with M12 5 pin female straight connector, unshielded	2095734	£48.06
2m PVC cable with M12 8 pin female straight connector, shielded	2096244	£28.42
5m PVC cable with M12 8 pin female straight connector, shielded	2096245	£39.18
10m PVC cable with M12 8 pin female straight connector, shielded	2096356	£54.32
30m PVC cable with M12 8 pin female straight connector, shielded	2096357	£93.13
T-connector for safe series connection	5325889	£33.01

## IN4000 Direct – Non-contact inductive safety switch

**SICK**


The IN4000 Direct is a non-contact, inductive safety switch. It has an integrated evaluation unit that is activated by metal, so it does not need a separate coded actuator.

Due to the non-contact form of operation, it is straightforward to adjust and install. It also has increased resistance to shock and vibration.

### Features

- Two OSSD safety outputs for direct connection of sensors to a single safety controller
- Response range of up to 15mm
- Fast diagnostics via LED status indicator
- Easy to clean, making them suitable for contaminated areas or environments with strict hygiene standards

### Technical specification

PFHd . . . . .  $2.5 \times 10^{-9}$  (EN ISO 13849)  
 Enclosure rating . . . . . IP 67 (EN 60529)  
 Type of output . . . . . Semiconductor (OSSD)  
 Safe outputs . . . . . 2  
 Safe switch on . . . . . 15mm  
 Installation type . . . . . Non-flush  
 Ambient temperature . . . . . -25° to +70°C  
 Dimensions . . . . . h40 x w40 x d66mm

EN ISO 13849-1 Category	Cat 4
EN ISO 13849-1 Performance Level	PLe
EN 62061 SIL Claim	SIL CL 3

Description	Order Code	List Price
Rectangular inductive sensor with M12 connector	IN40-E0101K	£198.90

### Accessories

Description	Order Code	List Price
5m PVC cable with female connector	2096235	£9.44
10m PVC cable with female connector	2096236	£13.79

## IN3000 Direct Cylindrical non-contact inductive safety switch

**SICK**


The IN3000 Direct non-contact safety switch is activated by metal and therefore doesn't need a separate actuator.

It can be connected via two outputs directly to a suitable electronic evaluation system such as a safe control solution. Its small design makes integration into the machine design possible and combines the benefits of a small housing with easy and direct evaluation.

### Features

- Direct connection to safe control solution possible
- Response range of up to 15mm
- LED status indicator
- M12 plug connector
- Easy to clean, making them suitable for contaminated areas or environments with strict hygiene standards

### Technical specification

PFHd . . . . .  $1.0 \times 10^{-7}$  (EN ISO 13849)  
 Type of output . . . . . Semiconductor  
 Safe outputs . . . . . 2  
 Installation type . . . . . Non-flush  
 Ambient temperature . . . . . -25° to +70°C

EN ISO 13849-1 Category	Cat 3
EN ISO 13849-1 Performance Level	PLd
EN 62061 SIL Claim	SIL CL 2

Safe Switch On	Dimensions	Order Code	List Price
1 to 15mm	M30 x 70mm	IN30-E0208K	£108.36
1 to 8mm	M18 x 70.5mm	IN30-E0305K	£88.89
1 to 4mm	M12 x 70 mm	IN30-E0407K	£79.44

### Accessories

Description	Order Code	List Price
Mounting bracket, M12 thread	BEF-WN-M12	£2.42
Mounting bracket, M18 thread	BEF-WN-M18	£2.42
Mounting bracket, M30 thread	BEF-WN-M30	£2.42
5m PVC cable with female connector	2096235	£9.44
10m PVC cable with female connector	2096236	£13.79

# RSS/CSS – Electronic coded safety switch



RSS36



CSS180

RSS and CSS switches use advanced circuit technology for functional safety applications. Up to 31 devices can be connected in series (daisy chain) and still meet the highest safety level to EN13849-1.

Each switch has a monitoring system, so if a fault condition appears there is no loss of safety. The switch can also send a signal to a control system either by separate inputs or via a series connected diagnostic system.

The main benefit of these products is they do not allow any single channel faults to disrupt any operational cycle. In a conventional series connected system, a single channel fault could result in an unnecessary component change because they are not easy to detect. Recycling of the safety circuit can also make the problem disappear until the next fault occurs.

Schmersal's CSS technology prevents these faults ever occurring.

## Common features

- Electronic contact-free, coded system
- Misaligned actuation possible
- High repeat accuracy of the switching points
- Can be connected in series, maximum length of the sensor chain is 200m
- Supply voltage 24V d.c.
- 2 short-circuit proof PNP safety outputs. No special safety monitor required
- Integral cross short, wire breakage and external voltage monitoring of the safety cables up to the control cabinet, eliminates single channel faults
- 2 safety and 1 diagnostic outputs

## Technical specification

Supply voltage	24V d.c.
Electrical connection	M12 8 pole plug
Safety outputs	2 PNP short circuit proof safety outputs
Safety output current	
RSS36	0.25A
CSS8	0.5A
Diagnostic outputs	1 x PNP
Diagnostic output current	0.05A
Inputs	2 safety inputs for series wiring
Diagnostic display	
RSS36	
Green LED	Supply voltage
Red LED	Error
Yellow LED	Switching condition
CSS8	1 x multicoloured LED
Protection rating	
RSS36	IP69K
CSS8	IP67
Housing material	Plastic, glass-fibre reinforced thermoplastic
Ambient temperature	
RSS36	-25° to +70°C
CSS8	-25° to +60°C
Dimensions	
RSS36	h25 x w106.3 x d22mm
CSS8	
Length of sensor	92mm
Diameter of sensor	M18

EN 954-1 Category	Cat 4
EN ISO 13849-1 Performance Level	PLe
EN 62061 SIL Claim	SIL CL 3
Mission Time	20 years

## RSS36 – RFID electronic safety switch

Description	Order Code	List Price
RFID electronic safety switch – M12	RSS36-D-ST	£124.24
Actuator	RST36-1	£25.21
RFID electronic safety switch, latching – M12	RSS36-D-R-ST	£141.81
Actuator	RST36-1-R	£55.40

## CSS180 - M18 safety switch

Description	Order Code	List Price
Series connection – M12	CSS8-180-2P-D-M-ST	£373.04
End of line connection – M12	CSS8-180-2P-D-E-LST	£181.15
Actuator	CST180-1	£13.93



# GNI-3S – Magnetic interlock switches



**NEW**

The Tapeswitch GNI-3 magnetic interlock provides a low-cost solution for guarding personnel access into dangerous areas. This makes it ideal for use on guard doors and perimeter gates.

The moulded ABS enclosure combines high resistance to industrial contaminants with an IP67 protection rating which allows for power cleaning or even immersion.

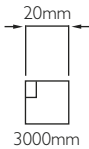
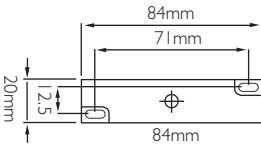
### Features

- Easy installation
- Non-contact operation
- Compact, rugged design
- IP67 protection rating
- Zero maintenance
- High tolerance to misalignment

### Technical specification

Interlock contacts	2 NO
Interlock contact max. rating	24V d.c./500mA resistive
Internal fuse rating	500mA
Auxiliary contacts	1 NC
Auxiliary contact max. rating	500mA resistive
Operating temperature	-10 to +55°C
Construction	Red ABS, resin filled
Operating distance	18mm (front) 9mm (side)
Coding	None
Mounting	4 x M4 security screws
Protection	IP67
Dimensions	h84 x w20 x d20mm

Prod Value	2 million
Mission Time	20 years



Description	Order Code	List Price
Magnetic interlock switch with 5m lead	GNI-3S	£64.07
Magnetic interlock switch with M12 plug	GNI-3S-QD	£81.53
Replacement Magnet	MAGNET-FOR-GNI3	£22.00

# AZI16 – Safety switch with separate actuator



### Features

- Thermoplastic enclosure
- Double-insulated
- High level of contact reliability with low voltages and currents
- M20 cable entry with gland
- IP67 protection rating

### Technical specification

Latching force	30N
Positive break force	20N
Positive break travel	8mm
Switching principle	Creep circuit element
Contact ratings	
AC-15	4A 230V a.c.
DC-13	4A 24V d.c.
Protection rating	IP67
Dimensions	h90 x w52 x d30mm

... for recommended **SRB series safety relays**

See pages 486-488

### 2 NC version

Prod value	2 million
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### 2 NC/1 NO version

Prod value	NC - 2 million	NO - 1 million
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For max 10% ohmic contact load

The AZI16 has 2 x NC contacts for safe monitoring. There is also a version with an additional 1 x NO contact which allows auxiliary feedback to non-safety systems.

Contacts are disconnected by a positive force which gives a high level of safety.

Description	Contacts	Order Code	List Price
AZI16 safety switch	2 NC	AZ16-02ZVRK-M20	£23.25
AZI16 safety switch	2 NC/1 NO	AZ16-12ZVRK-M20	£26.92
Standard actuator		AZ15/16-B1	£6.75
Flexible actuator for very small actuating radii		AZ15/16-B2	£8.43
Small - 90° actuator		AZ15/16-B3	£8.43

# AZ17 – Compact safety switch with separate actuator



### Features

- Thermoplastic enclosure
- Small body
- 8 actuating planes
- Double-insulated
- Patented roller system is not sensitive to dirty conditions
- M16 cable gland
- IP67 protection rating

... for recommended **SRB series safety relays**



See pages 486-488

### Technical specification

Standards . . . . . EN ISO 13849-1  
 Latching force . . . . . 30N  
 Positive break force . . . . . 17N  
 Positive break travel . . . . . 11mm  
 Design of control element . . . Opener (NC)  
 Switching principle . . . Creep circuit element  
 Safety contacts . . . . . 2  
 Contact ratings  
 AC-15 . . . . . 4A 230V a.c.  
 DC-13 . . . . . 4A 24V d.c.  
 Protection rating . . . . . IP67  
 Dimensions . . . . . h60 x w30 x d30mm

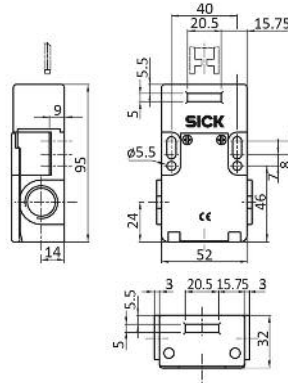
Prod value	2 million
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The AZ17 is a compact safety switch for light duty applications.

The switch has two actuation points which can cover up to eight mounting planes. Connection is made by a M16 cable gland. The switch has 2 x NC safety contacts for monitoring.

Description	Contacts	Order Code	List Price
AZ17 Compact safety switch	2 NC	AZ17-02ZRK	£25.18
Straight actuator		AZ17/170-B1	£6.75
Flexible actuator		AZ17-B6	£17.74

# i17S – Electro-mechanical safety switch



### Technical specification

Contact rating . . . . . 3A @ 240V a.c.  
 . . . . . 2A @ 24V d.c.  
 No. of positive action N/C contacts . . . 2  
 No. of N/O contacts . . . . . 1  
 Retaining force . . . . . ≤12 N  
 Actuation frequency . . . . . ≤7,200/h  
 Actuation directions . . . . . 3  
 Approach speed . . . . . ≤10m/min

Prod value	2 x 10 <sup>6</sup>
EN ISO 14119	Type 2

### Features

- Compact plastic housing
- Rigid or mobile actuators
- 3 x M20 x 1.5 cable entry glands
- Slow-action switching elements with 3 contacts
- IP67 enclosure rating

Description	Contacts	Order Code	List Price
Safety switch with separate actuator	2 NC/1 NO	i17-SA213	£27.15

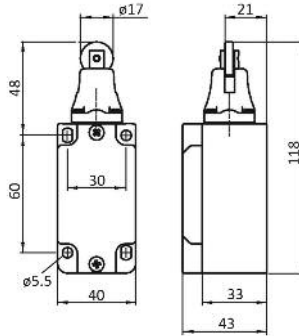
### Actuators and accessories

Design	Actuation Option	Minimum Door Radius	Order Code	List Price
Straight	Rigid	175mm	iE17-S1	£7.78
Radial	Fully flexible	60mm	iE16-F1	£14.50
Radial	Semi flexible	60mm	iE16-F2	£9.36
Catch and retainer kit			iE16-SCR	£8.55
M20 cable gland, black			5309164	£1.17

**REMINDER**

Please remember that you will need to purchase the actuator

# iI IOP – Electro-mechanical safety position switches



### Technical specification

Contact rating ..... 3A @ 240V a.c.  
 ..... 3A @ 24V d.c.

No. of positive action  
 N/C contacts ..... 1/2/3  
 (depending on type)

No. of N/O contacts ..... 1/2  
 (depending on type)

Switching principle ..... Slow action  
 switching element/snap action switching  
 element (depending on type)

Type of actuator ..... Roller plunger

Ambient temperature ..... -25 to + 80°C

Protection ..... IP66

Brod value	2 x 10 <sup>6</sup>
EN ISO 14119	Type 1

### Features

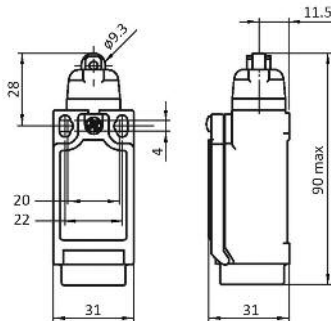
- Standardised metal housing
- Roller plunger with stainless steel roller
- M20 x 1.5 cable entry gland
- Slow-action or snap-action switching elements with up to four contacts

No. of Positive Action N/C Contacts	No. of N/O Contacts	Order Code	List Price
1	1	i110-PA123	£32.56
2	2	i110-PA223	£33.71
3	1	i110-PA313	£33.71

### Accessories

Description	Order Code	List Price
M20 cable gland, black	5309164	£1.17

# iI OP – Electro-mechanical safety switch



### Technical specification

Contact rating ..... 3A @ 240V a.c.  
 ..... 3A @ 24V d.c.

No. of positive action N/C contacts ... 2

No. of N/O contacts ..... 1

Switching principle ..... Slow action  
 switching element

Type of actuator ..... Roller plunger

Ambient temperature ..... -25 to + 80°C

Protection ..... IP66

Brod value	2 x 10 <sup>6</sup>
EN ISO 14119	Type 1

### Features

- Standardised plastic housing
- Roller plunger with plastic roller
- M20 x 1.5 cable entry gland
- Slow-action switching elements with three contacts

No. of Positive Action N/C Contacts	No. of N/O Contacts	Order Code	List Price
2	1	i10-PA213	£21.34

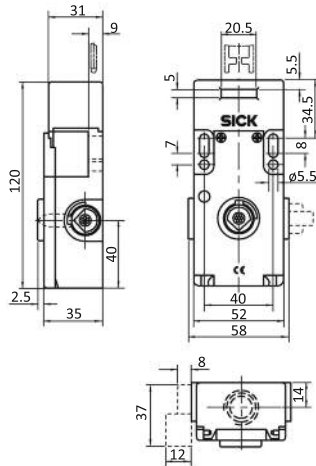
### Accessories

Description	Order Code	List Price
M20 cable gland, black	5309164	£1.17





# i14 Lock – Solenoid safety interlock switch



### Features

- Compact plastic housing
- M20 x 1.5 cable entry gland
- Locked with spring force
- Lock monitoring
- LED locking indicator
- Mechanical unlocking mechanism on three sides

### Technical specification

Contact rating ..... 3A @ 240V a.c.  
 2A @ 24V d.c.  
 Solenoid supply ..... 24V d.c. 7W  
 No. of positive action N/C solenoid monitoring contacts ..... 2  
 No. of N/O solenoid monitoring contacts ..... 0/1  
 (depending on type)  
 No. of positive action N/C door monitoring contacts ..... 0  
 No. of door monitoring contacts N/O ..... 0  
 N/C ..... 0  
 Locking type ..... Mechanical  
 Locking force max ..... ≤1,200N  
 (EN ISO 14119)  
 Ambient temperature ... -20 to +60°C  
 Protection ..... IP65  
 Dimensions ..... h120 x w58 x d35mm

Btod value	2 x 10 <sup>6</sup>
EN ISO 14119	Type 2

**REMINDER**

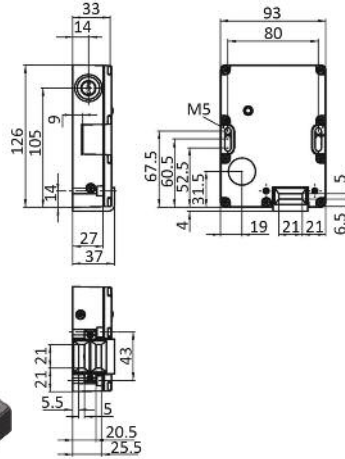
Please remember that you will need to purchase the actuator

Locking Type	Solenoid Monitoring Contacts		Door Monitoring		Connection Type	Order Code	List Price
	Positive Action N/C	N/O	Positive Action N/C	N/O			
Mechanical	2	1	0	0	Cable entry	i14-M0213	£121.86
Mechanical	2	0	0	0	Cable entry	i14-M0303	£121.86

### Actuator

Design	Actuator Option	Method of Actuation	Minimum Door Radius	Order Code	List Price
Straight	Rigid	Catch & retainer set for increased retaining force	160mm	iE14-S1	£11.18

# i200 Lock – Solenoid safety interlock switch



iE200-S1



iE200-F1



iE200-B1

### Features

- Compact plastic housing
- Stainless steel entry for actuator
- Either rigid, mobile or bolt actuators available
- 3 x M20 x 1.5 cable entry gland
- Locked by spring force and magnetic force
- Lock and door monitoring
- LED locking indicator

### Technical specification

Contact rating ..... 3A @ 240V a.c.  
 2A @ 24V d.c.

Solenoid supply ..... 24V d.c. 7W

No. of positive action N/C solenoid monitoring contacts ..... 1/2 (depending on type)

No. of N/O solenoid monitoring contacts ..... 0/1 (depending on type)

No. of positive action N/C door monitoring contacts ..... 2

No. of door monitoring contacts  
 N/O ..... 1  
 N/C ..... 0

Locking type ..... Electrical/mechanical

Locking force max ..... ≤2,000N\* (EN ISO 14119)

Ambient temperature ..... -20 to +60°C

Protection ..... IP65

Dimensions ..... h | 26 x w | 93 x d | 37mm

\*only in combination with the delivered fixing screws, otherwise 1500N

B10d value	2 x 10 <sup>6</sup>
EN ISO 14119	Type 2

### REMINDER

Please remember that you will need to purchase the actuator

Locking Type	Solenoid Monitoring Contacts		Door Monitoring		Connection Type	Order Code	List Price
	Positive Action N/C	N/O	Positive Action N/C	N/O			
Mechanical	1	1	2	1	Cable entry	i200-M0323	£144.62
Mechanical	2	0	2	1	Cable entry	i200-M0413	£144.62
Electrical	1	1	2	1	Cable entry	i200-E0323	£144.62

### Accessories

Description	Actuator Option	Minimum Door Radius	Order Code	List Price
Straight actuator	Rigid	160mm	iE200-S1	£6.47
Radial actuator	Fully flexible	80mm	iE200-F1	£14.94
Bolt actuator straight	Rigid	175mm	iE200-B1	£114.97
M20 cable gland, black	—	—	5309164	£1.17

# AZM161 – Heavy duty solenoid interlock switch SCHMERSAL



### Features

- Thermoplastic enclosure
- Double-insulated
- 2000N Holding force
- Manual release emergency exit
- 6 Contacts

### Technical specification

- Latching force ..... 30N
- Positive break force ..... 20N
- Positive break travel ..... 10mm
- Clamping force Fmax ..... 2000N
- Design of control element ..... Normally open contact (NO), Opener (NC)
- Switching principle ..... Creep circuit element
- Auxiliary contacts ..... 2
- Safety contacts ..... 4
- Rated control voltage  $U_s$  ..... 24V a.c./d.c.
- Power consumption ..... max 10W
- Actuator contacts ..... 1 NO + 2 NC
- Solenoid contacts ..... 1 NO + 2 NC power to unlock

### Contact ratings

- AC-15 ..... 4A 230V a.c.
- DC-13 ..... 2.5A 24V d.c.
- Protection rating ..... IP67
- Dimensions ..... h130 x w90 x d30mm

Mission Time	20 years
B10d value	2 million



... for recommended **SRB series safety relays**



See pages 486-488

The AZM161 is designed for installations such as machines or robot cells where access to the hazard is to be controlled until a safe condition exists on the machine. The device can be unlocked when power is applied to the solenoid. This signal can be initiated by a timer or a standstill monitoring device.

The power to unlock version is a common mode of operation for this application.

*Power to lock versions are also available, please call our head office sales department on 01254 685900 for further details.*

Description	Order Code	List Price
2 NC/1 NO actuator, 2 NC/1 NO solenoid	AZM161SK-12/12RK-024	£171.54
Straight actuator	AZM161-B1	£8.44
Flexible actuator	AZM161-B6	£23.62

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## AZM170 – Solenoid interlock switch with separate actuator



### Features

- Thermoplastic enclosure
- 1 cable entry M20 x 1.5
- 1000N holding force
- Screw connection
- Manual release
- 2 actuator contacts

Power to lock versions are also available, please call our head office sales department on 01254 685900 for further details.

Mission Time	20 years
B10d value	2 million

### Technical specification

Latching force	.....30N
Positive break force	.....8.5N
Positive break travel	.....11mm
Switching principle	Creep circuit element
Clamping force Fmax	.....1000N
Power consumption	.....max. 10W
Actuator contacts	.....2 NC or 1 NC/1 NO
Solenoid contact	.....1 NC power to unlock
Contact ratings	
AC-15	.....4A 230V a.c.
DC-13	.....4A 24V d.c.
Protection rating	.....IP67
Dimensions	.....h90 x w84 x d30mm

The AZM170 is a safety solenoid interlocking switch which has been designed for machines that need to restrict access to a hazard during normal operation.

The power to unlock version is a common mode of operation for this application.

Description	Order Code	List Price
2 NC actuator, 1 NC solenoid	AZM170SK-02ZRK-2197-24VAC/DC	£177.97
1 NC/1 NO actuator, 1 NC solenoid	AZM170SK-11ZRK-2197-24VAC/DC	£196.06
Straight actuator	AZ17/170-B1	£6.75
Flexible actuator	AZM170-B6	£17.74

## AZM415 – Heavy duty solenoid interlock switch



### Features

- Metal enclosure
- 3500N holding force
- 2 x M20 cable entries
- 2 switches in one enclosure
- Problem-free opening of stressed doors by means of bell-crank system
- 4 normally closed contacts

### Technical specification

Latching force	.....150N-400N
Positive break force	.....15N min
Positive break travel	.....5mm
Clamping force Fmax	.....3500N
Design of control element	Opener (NC)
Switching principle	Creep circuit element
Actuator contacts	.....2 NC
Solenoid contacts	.....2 NC power to unlock
Contact ratings	
AC-15	.....4A 230V a.c.
DC-13	.....1A 24V d.c.
Protection rating	.....IP67
Dimensions	.....h130 x w100 x d46.5mm

... for recommended **SRB series safety relays** See pages 486-488

The AZM415 has a rugged, enamel coated enclosure and is ideal for use in harsh industrial environments with an IP67 protection rating.

Mission Time	20 years
B10d value	2 million

Description	Order Code	List Price	Straight Actuator		Flexible Actuator	
			Order Code	List Price	Order Code	List Price
2 NC actuator, 2 NC solenoid	AZM415-02/02ZPK-24VAC/DC	£292.53	AZ/AZM415-B1	£26.97	AZ/AZM415-B2	£26.97



# AZM201 – Solenoid interlock



**NEW**

Actuator for sliding doors

Actuator with handle for standard doors

Emergency exit version

(includes override handle on reverse of actuator)

### Features

- Locking principles – power to unlock or lock available
- Thermoplastic enclosure
- RFID-technology for needs-based protection against tampering
- Max. length of the sensor chain 200m
- Coding level "High" according to ISO 14119
- Suitable for SIL3 applications
- Self-monitoring series-wiring of 31 sensors
- 3 LEDs to show operating conditions
- Sensor technology permits an offset between actuator and interlock of ±5mm vertically and ±3mm horizontally
- Suitable for hinged and sliding guards
- Intelligent diagnosis
- Manual release

### Technical specification

Latching force ..... 30N  
 Clamping force ..... 2000N Fmax  
 Mechanical life ... ≥1,000,000 operations  
 Protection ..... IP67  
 Electrical connection ... M12 8 pin plug  
 Outputs ..... 2 safety outputs p-type,  
 1 diagnostic output p-type  
 Inputs ..... 2 safety inputs for series wiring  
 Diagnostic display ..... 3 LEDs  
 for condition status  
 Ambient temperature ... -25 to +60°C  
 Dimensions ..... h220 x w40 x d50mm

EN 954-1 Category	Cat 4
EN ISO 13849-1 Performance Level	PLe
EN 62061 SIL Claim	SIL CL 3
Mission Time	20 years

### Interlock switch - order code options

Type	1 Monitoring	2 Coding	3 Connection	4 Output options	5 Electrical options
AZM201	Z Solenoid	Standard	SK Screw terminals	T 1P2PW 1 diagnostic and 2 safety outputs, p-type SD2P Serial diagnostic output and 2 safety outputs, p-type	A Power to unlock Power to lock
	B Actuator	I1 Individual I2 Individual	CC Cage clamps ST2 M12 8 pin plug		

### Interlock switches

Description	Power to Unlock		Power to Lock	
	Order Code	List Price	Order Code	List Price
Solenoid monitoring, M12 8 pin plug	AZM201-Z-ST2-T-1P2PW	£439.53	AZM201-B-ST2-T-1P2PW	£439.53
Actuator monitoring, screw terminals	AZM201-B-ST2-T-1P2PW	£439.53	AZM201-B-ST2-T-1P2PW-A	£439.53

### Sliding door actuators

Description	Power to Unlock		Emergency Exit Version <i>(includes emergency release mechanism)</i>	
	Order Code	List Price	Order Code	List Price
Sliding door - slides from the left	AZ/AZM201-B1-LT	£94.88	AZ/AZM201-B1-LT-P0	£131.27
Sliding door - slides from the right	AZ/AZM201-B1-RT	£94.88	AZ/AZM201-B1-RT-P0	£131.27

### Standard door actuators

Description	Power to Unlock		Emergency Exit Version <i>(includes override handle on reverse of actuator)</i>	
	Order Code	List Price	Order Code	List Price
Standard door with left-hand hinge	AZ/AZM201-B30-L-TA-G1	£145.41	AZ/AZM201-B30-L-TA-G1-P1	£217.16
Standard door with right-hand hinge	AZ/AZM201-B30-R-TA-G1	£145.41	AZ/AZM201-B30-R-TA-G1-P1	£217.16

# AZM300 – Electronic coded solenoid interlock SCHMERSAL



**ECOLAB**

One of the unique features of the AZM300 is the innovative patented operating principle with rotating shaft and star handle.

This offers the advantage that the safety guard is pulled into its end position when the guard door is closed and it is held shut.

The solenoid interlock can be used as an end stop, which eliminates the use of a separate door stop. The integrated latching ensures that the closed condition of the door is maintained after the unlocking of the solenoid interlock and that the door cannot autonomously open itself. The latching force can be easily increased by turning the star handle by 180° from 25N to 50N.

### Solenoid interlock monitoring

The safety outputs of the AZM300Z solenoid interlock are enabled when the safety guard is closed and the solenoid interlock is locked.

### Actuator monitoring

For applications, where process protection is required, the AZM300B version can be used. The safety outputs of this model are enabled when the safety guard is closed. With this device locking is not required for operation.

### Features

- Hygiene compliant design, resistant to many cleaning agents
- Protection class IP69k
- Power to lock or power to unlock
- Actuator or solenoid-interlock monitoring
- Series wiring without reduction of the safety level
- Switchable latching force
- LED diagnostics
- RFID coded sensor
- Large actuator tolerances

### Technical specification

Latching force	..... 25N/50N
Clamping force	..... 1000N Fmax
Mechanical life	..... 1,000,000 operations
Protection	..... IP69K
Supply voltage	... 24V d.c. -15%/+ 10%
Electrical connection	... M12 8 pin plug
Outputs	..... 2 safety outputs p-type, 1 diagnostic output p-type
Inputs	... 2 safety inputs for series wiring
Diagnostic display	..... 3 LEDs for condition status
Ambient temperature	... 0 to +60°C
Dimensions	..... h100 x w85 x d35mm

EN 954-1 Category	Cat 4
EN ISO 13849-1 Performance Level	PL e
EN 62061 SIL Claim	SIL CL 3
Mission Time	20 years



Straight actuator with 3 different directions of actuation

Type	Power to Unlock		Power to Lock	
	Order Code	List Price	Order Code	List Price
Actuator monitoring	AZM300B-ST-1P2P	£364.49	AZM300B-ST-1P2P-A	£364.49
Solenoid monitoring	AZM300Z-ST-1P2P	£364.49	AZM300Z-ST-1P2P-A	£364.49

### Accessories

Description	Order Code	List Price
Straight actuator, 3 directions of actuation	AZ/AZM300-B1	£47.37
Cable with M12, 8-pin connector, 5m	A-K8P-M12-S-G-5M-BK-1-X-A-4-69-VA	£38.19
Cable with M12, 8-pin connector, 10m	A-K8P-M12-S-G-10M-BK-1-X-A-4-69-VA	£61.53

# AZM400 – Electronic coded solenoid interlock SCHMERSAL



The AZM400 safety locking devices include a safety solenoid interlock with bolt locking. Consisting of a locking unit with sensor technology, a motor driven bolt, and a coded RFID actuator.

There are two versions, an electric manual release (actuator is released when voltage is applied to the release circuit) or an emergency exit version.

### Features

- Bistable, motor-driven system
- Holding force 10,000N
- Release possible against lateral forces up to 300N
- Individually coded version with coding level high according to ISO 14119
- Two channel input signal of the guard locking function
- High tolerance to door misalignment
- 1 diagnostic output plus 2 safety outputs
- Emergency exit or electric manual release
- Assembly set for simple installation on 40mm aluminium profiles

### Technical specification

Latching force	300N
Clamping force	10,000N
Supply requirements	24V d.c., 0.6A
Switching capacity	24V d.c., 0.25A
Inputs	2
Outputs	2 x OSSD, 1 x diagnostic
Serial diagnostics	Yes
Connection	M12, 8-pin
Protection	IP66/IP67
Ambient temperature	-25 to +70°C
Housing material	Metal
Dimensions	h157 x w78 x d47mm

EN ISO 13849-1 Performance Level	PLe
EN 62061 SIL Claim	SIL CL 3

Emergency Exit Version <i>(includes emergency release mechanism)</i>	
Order Code	List Price
AZM400Z-ST-1P2P-T	£484.01
AZM400Z-ST-I2-1P2P-T	£495.74

Description	Order Code	List Price
Solenoid interlock, standard coding	AZM400Z-ST-1P2P	£454.50
Solenoid interlock, individual coding, multiple teaching	AZM400Z-ST-I2-1P2P	£466.23

### Accessories

Description	Order Code	List Price
Straight actuator	AZM400-B1	£61.98
Mounting bracket	MS-AZM400	£31.67

### Cables

Description	Order Code	List Price
Cable with M12 8-pin connector, 2.5m	A-K8P-M12-S-G-2.5M-BK-2-X-A-4-69	£37.88
Cable with M12, 8-pin connector, 5m	A-K8P-M12-S-G-5M-BK-2-X-A-4-69	£31.59

# PSENmech – Solenoid interlock switch



The mechanical safety switch PSENmech is suitable for safe monitoring and locking of movable guards which must not be opened until a safe state has been achieved (such as the hazardous moving parts coming to a standstill).

### Features

- 8 actuation directions (4 horizontal, 4 vertical) provide flexible installation
- Standard actuator is used where alignment is easier
- Radius actuator version for more difficult alignment
- Long service life due to robust design and high mechanical load capacity
- Wide operating temperature range for use in a variety of applications
- Housing is dust-tight, insensitive to dirt and waterproof

### Technical specification

Holding force	1500N
Extraction force	min. 27N
Contacts	2 NO, 2 NC
Dimensions	h170 x w42.5 x d51mm (excluding actuator)
Ambient temperature	-25 to +70°C
Connection terminals	Spring-loaded
Protection rating	IP67

Bit0d value	7.3 million
-------------	-------------

Safety switch for monitoring the position of movable guards in accordance with EN 60947-5-3

### Power to release with auxiliary release

(complete unit including actuator)

Supply Voltage	Standard Actuator			Radius Actuator		
	Ident No	Order Code	List Price	Ident No	Order Code	List Price
24V a.c./d.c.	570000	PSENme 1S/1AS	£103.88	570001	PSENme 1S/1AR	£132.72
110-230V a.c.	570006	PSENme 1.2S/1AS	£148.29	570007	PSENme 1.2S/1AR	£170.23

### Power to lock

(complete unit including actuator)

Supply Voltage	Standard Actuator			Radius Actuator		
	Ident No	Order Code	List Price	Ident No	Order Code	List Price
24V a.c./d.c.	570004	PSENme 1M/1AS	£109.65	570005	PSENme 1M/1AR	£139.46

# ZQ700 – Thermoplastic pull wire E-stop switches



Fixing kits

### Features

- One tension force for cable lengths of either 5m or 10m
- Thermoplastic enclosure
- Double insulated
- One side operation
- Release push button
- Position indicator
- Large wiring compartment
- Twisting of towing eye not possible
- Wire pull and breakage detection
- Requires fixing kit, see below

### Technical specification

Number of contacts . . . . . 1NC/1NO  
 (1 safety, 1 auxiliary)  
 or 2NC (2 safety)

Contact rating . . . . . 4A @ 24V d.c.  
 or 230V a.c.

Emergency stop button . . . . . Not fitted

Cable entry . . . . . M20

Connection type . . . . . Screw terminals

Ambient temperature . . . . . -25 to +70°C

Maximum wire length . . . . . 10m

... for recommended **SRB series safety relays**



See pages 486-488

EN ISO 13849-1 Performance Level	
Mission Time	20 years
B10d value	100,000

- Fixing kits contain:**
- 1 x wire rope
  - 2 x wire clamps
  - 1 x wire thimble
  - 1 x eyebolt
  - 1 x duplex wire clamp
  - Red PVC sheath

Contacts	Order Code	List Price
1 NO/1 NC	ZQ700-11	£80.20
2 NC	ZQ700-02	£80.20

### Fixing kits

Description	Order Code	List Price
Fixing kit 5 – 5m wire rope	WIRE ROPE COMPLETE FIXING KIT-5m	£28.69
Fixing kit 10 – 10m wire rope	WIRE ROPE COMPLETE FIXING KIT-10m	£38.71

See next page for ZQ900 – Metal pull wire E-stop switches 



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# ZQ900 – Metal pull wire E-stop switches



ZQ900-11

ZQ900-11N

EX-ZQ900

### Features

- One tension force for cable lengths from 5m to 50m
- Robust metal enclosure
- 3 x M20 cable entries
- One side operation
- Release push button
- Position indicator
- Large wiring compartment
- Twisting of towing eye not possible
- External watertight collar
- Wire pull and breakage detection
- Requires fixing kit, see below

### Technical specification

Number of contacts  
 ..... NC positive break safety  
 ..... NO auxiliary  
 Contact rating ..... 1A @ 24V d.c.  
 or 4A 230V a.c.  
 Cable entry ..... 3 x M20  
 Connection type ..... Screw terminals  
 Ambient temperature .... -25 to +70°C  
 Maximum wire length ..... 50m

### ATEX switches

Explosion protected category for dusts  
 .... ATEX dust ex-protection, Cat. 3D  
 Explosion protection zones for dust ..22

EN ISO 13849-1 Performance Level	
Mission Time	20 years
B10d value	100,000

... for recommended  
**SRB series safety relays**



See pages  
 486-488

	Without Emergency Stop Pushbutton		With Emergency Stop Pushbutton		ATEX Approved Switches	
Contacts	Order Code	List Price	Order Code	List Price	Order Code	List Price
1 NO/1 NC	ZQ900-11	£139.85	ZQ900-11N	£185.18	—	—
1 NO/3 NC	ZQ900-13	£178.39	ZQ900-13N	£206.86	—	—
2 NO/2 NC	ZQ900-22	£161.54	ZQ900-22N	£206.86	EX-ZQ900-22-3D	£247.40
2 NC	ZQ900-02	£139.85	ZQ900-02N	£195.35	—	—
4 NC	ZQ900-04	£166.35	ZQ900-04N	£218.59	EX-ZQ900-04-3D	£268.76



Fixing kits

- Fixing kits contain:**
- 1 x wire rope
  - 2 x wire clamps
  - 1 x wire thimble
  - 1 x eyebolt
  - 1 x duplex wire clamp
  - Red PVC sheath

### Fixing kits

Description	Order Code	List Price
Fixing kit 5 – 5m wire rope	WIRE ROPE COMPLETE FIXING KIT-5m	£28.69
Fixing kit 10 – 10m wire rope	WIRE ROPE COMPLETE FIXING KIT-10m	£38.71
Fixing kit 15 – 15m wire rope	WIRE ROPE COMPLETE FIXING KIT-15m	£46.70
Fixing kit 30 – 30m wire rope	WIRE ROPE COMPLETE FIXING KIT-30m	£63.73
Fixing kit 50 – 50m wire rope	WIRE ROPE COMPLETE FIXING KIT-50m	£93.43