9

SAFETY PRODUCTS

Contents

AZ 16ZVK

Safety switch with separate actuator

- Thermoplastic enclosure
- Double insulated
- Large wiring compartment
- Multiple coding
- High level of contact reliability with low voltages and currents
- Slotted holes for adjustment, circular holes for location
- 3 cable entries M16 x 1.5
- LED version available

Ambient conditions

Environmental temperature: Min. - 30ºC
                            Max. + 80ºC
Protection class: IP67 to IEC/EN 60529

Ordering Selection

AZ 16-(1)ZV(2)K-(3)-(4)-(5)

(1)
without	1 Normally open contact (NO)/1 Opener (NC)
02	2 Opener (NC)
03	3 Opener (NC)
12	1 Normally open contact (NO)/2 Opener (NC)

(2)
without	Ejection force
R	Latching force 30 N

(3)
G24	with LED (only available for version with 1NO and 1NC contact)

(4)
without	Cable entry M16
M20	Cable entry M20
ST	Connector M12, 4-pole, bottom
STL	Connector M12, 4-pole, left
STR	Connector M12, 4-pole, right

(5)
2254	Latching Force 5 N
1762	Front Mounting
1637	Gold-plated contacts

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System Components

Description	Part No.
Actuators	
	1083036 - AZ 15/16-B1
For play-free interlocking of light guards suitable for retrofitting	**1092711 - AZ 15/16-B1-1747**
For play-free interlocking of light guards suitable for retrofitting The magnetic latch can be easily fitted in any actuating plane	**1093553 - AZ 15/16-B1-1747**
	1108276 - AZ 15/16-B1-2024
For protection against the ingress of course dirt including slot sealing plug	**1108278 - AZ 15/16-B1-2024**
For interlocking of light to medium-weight guards	**1111079 - AZ 15/16-B1-2053**
For interlocking of light to medium-weight guards with ball latch	**1111081 - AZ 15/16-B1-2053**
For interlocking of light, unguided guards	**1126793 - AZ 15/16-B1-2177**
For interlocking of light, unguided guards with centring guard	**1126794 - AZ 15/16-B1-2177**
Damp vibration on guard device	**1137408 - AZ 15/16-B1-2245**
For very small actuating radii in line with the plane of the actuator	**1095558 - AZ 15/16-B2**
For very small actuating radii in line with the plane of the actuator Suitable for retrofitting for play-free interlocking of light guards	**1096091 - AZ 15/16-B2-1747**
For very small actuating radii in line with the plane of the actuator Suitable for retrofitting for play-free interlocking of light guards The magnetic latch can be easily fitted in any actuating plane	**1096089 - AZ 15/16-B2-1747 with magnetic latch**
For very small actuating radii at 90˚ to the plane of the actuator	**1095550 - AZ 15/16-B3**
For very small actuating radii at 90˚ to the plane of the actuator Suitable for retrofitting for play-free interlocking of light guards The magnetic latch can be easily fitted in any actuating plane	**1096090 - AZ 15/16-B3-1747 with magnetic latch**
For very small actuating radii at 90˚ to the plane of the actuator Suitable for retrofitting for play-free interlocking of light guards	**1096092 - AZ 15/16-B3-1747**
For very small actuating radii in line or at 90˚ to the plane of the actuator	**1137434 - AZ 15/16-B6**

SAFETY PRODUCTS

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AZ 17

Solenoid interlock

- Thermoplastic enclosure
- Small body
- 8 actuating planes
- 30 x 60 x 30mm
- Multiple coding
- Long life
- Double-insulated
- High level of contact reliability with low voltages and currents
- Not sensitive to dirty conditions by virtue of patented roller system
- Cable gland M16

Ambient conditions

Protection class: IP67 to IEC/EN 60529

Ordering Selection

AZ 17-(1)Z(2)K-(3)-(4)-(5)

| (1) | 11 | 1 Normally open contact (NO)/1 Opener (NC) |
| | 02 | 2 Opener (NC) |

| (2) | without | Latching force 5 N |
| | R | Latching force 30 N |

(3)	without	Cable entry M16
	2243	Front cable entry
	2243-1	Rear cable entry
	ST	Connector M12, 4 Pole

| (4) | 1637 | Gold plated contacts |

| (5) | 5M | 5M Cable Length |
| | 6M | 6M Cable Length |

System Components

Description	Part No.
Actuators	
Suitable for sliding doors	1122893 - AZ 17/170-B1
Damps vibration on guard device	1137406 - AZ 17/170-B1-2245
Suitable for hinged guards (front mounting)	1122895 - AZ 17/170-B5
For very small actuating radii, the direction of actuation can be selected by applicable insertion of the insert	1126060 - AZ 17-B6
Suitable for sliding doors	1139788 - AZ 17/170-B11
Suitable for hinged guards (front mounting)	1139789 - AZ 17/170-B15

AZM 161

Solenoid interlock

- Thermoplastic enclosure
- Double-insulated
- Interlock with protection against incorrect locking.
- 130 x 90 x 30mm
- 6 Contacts
- Long life
- Large wiring compartment
- Manual release
- Cable entries 4 M 16 x 1.5

Ambient conditions

Environmental temperature: Min. - 25°C
                             Max. + 60°C
Protection class: IP67 to IEC/EN 60529

Operating modes

- Sliding safety guard
- Removable guard
- Hinged safety guard

Ordering Selection

AZM 161 (1)-(2)K(3)-(4)-(5)-(6)(7)

(1)	SK	Screw Connection
	CC	Cage Clamps
	ST	Male Connector M12, 8- & 4-Poles *(only for Us: 24V AC/DC)*

| (2) | 12/12 | 2 Normally open contact (NO / 4 Opener (NC) |
| | 12/11 | 2 Normally open contact (NO / 3 Opener (NC) (Plug-in connection) |

| (3) | without | Latching force 5 N |
| | R | Latching force 30 N |

| (4) | without | Power to unlock |
| | A | Power to lock |

(5)	without	Manual release lateral
	ED	Manual release cover-side
	EU	Manual release rear
	T	Emergency exit lateral
	TD	Emergency exit cover-side
	TU	Emergency exit rear
	N	Emergency release

| (6) | 024 | Us: 24V AC/DC |
| | 110/230 | Us: 110/230V AC |

| (7) | G | with LED (only for Us: 24V AC/DC) |

System Components

Description		Part No.
Actuators		
		1145117 - AZM 161-B1
		1144416 - AZM 161-B1E
		1171859 - AZM 161-B1ES
		1175431 - AZM 161-B1F
		1171125 - AZM 161-B1S
With ball latch		1173089 - AZM 161-B1-2053
With magnetic latch		1164100 - AZM 161-B1-1747
		1178199 - AZM 161-B1-2024
With centring guide		1176642 - AZM 161-B1-2177
	For very small actuating radii	1174113 - AZM 161-B6-2177
		1170375 - AZM 161-B6S
For very small actuating radii		1144420 - AZM 161-B6

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AZM 170

Solenoid Interlock

- Thermoplastic enclosure
- Double-insulated
- Compact design
- 90 x 84 x 30mm
- 1 cable entry N20 x 1.5
- Interlock with protection against incorrect locking
- Long life
- High holding force
- IDC method of termination
- Manual release

Ambient conditions

Environmental temperature: Min. - 25ºC
Max. + 60ºC
Protection class: IP67 to IEC/EN 60529

Operating Modes

- Sliding safety guard
- Removable guard
- Hinged safety guard

Ordering Selection

AZM 170 (1)-(2)Z(3)K(4)-(5)-(6)(7)

| (1) | without | IDC method of termination |
| | SK | Screw connection |

(2)	11	1 Normally open contact (NO)/1 Opener (NC)
	02	2 Opener (NC)
	12/0.0	1 Normally open contact (NO)/1 Opener (NC) / -

(3)	without	Latching force 5 N
	R	Latching force 30 N
	I	Individual coding

| (4) | without | Power to unlock |
| | A | Power to lock |

(5)	without	Connector gland
	ST	Connector M12 x 1
	ST-2431	Connector M12 x 1, individual solenoid monitor

(6)	24VAC/DC	Us: 24V AC/DC
	110VAC	Us: 110V AC
	230VAC	Us: 230V AC

(7)	without	Manual release
	2197	Manual release from side (power to unlock)
	1637	Gold-plated contacts

Ordering Selection

AZM 170ST-(1)Z(2)K(3)-(4)-(5)-024
AZM 170SK-(1)Z(2)K(3)-(4)-(5)-024

(1)	11/11	1 Normally open contact (NO)/1 Opener (NC)/ 1 Normally open contact (NO)/1 Opener (NC)
	11/02	1 Normally open contact (NO)/1 Opener (NC)/ 2 Opener (NC)
	12/00	1 Normally open contact (NO)/2 Opener(NC)/-
	12/11	1 Normally open contact (NO)/2 Opener (NC)/ 1 Normally open contact (NO)/1 Opener (NC)
	12/02	1 Normally open contact (NO)/2 Opener(NC)/ 2 Opener(NC)
	02/01	2 Opener(NC), - / 1 Opener (NC), -
	02/10	2 Opener(NC), - / 1 Normally open contact (NC), -

| (2) | without | Latching force 5 N |
| | R | Latching force 30 N |

| (3) | without | Power to unlock |
| | A | Power to lock |

| (4) | without | Cable gland |
| | 1637 | Gold-plated contacts |

| (5) | 2197 | Manual release from side (power to unlock) |

System Components

Description	Part No.
Actuators	
Particularly suitable for sliding doors	1122893 - AZ 17/170-B1
Damps vibration on guard device	1137406 - AZ 17/170-B1-2245
Suitable for hinged guards (front mounting)	1122895 - AZ 17/170-B5
Suitable for sliding doors	1139788 - AZ 17/170-B11
Suitable for hinged guards (front mounting)	1139789 - AZ 17/170-B15
For very small actuating radii 1123391 The direction of actuation can be selected by applicable insertion of the insert	1123391 - AZM 170-B6
Accessories	
Centring guide for AZ 17 and AZM 170	1208493 - AZM 170-B

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SAFETY PRODUCTS

SAFETY SWITCHES

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BNS 33

Safety sensors

• Thermoplastic enclosure
• Concealed mounting possible
• Insensitive to transverse misalignment
• 88 x 25 x 13mm
• Long life
• no mechanical wear
• Insensitive to soiling
• AS-Interface safety at work available

Ambient conditions

Environmental temperature: Min. -25ºC
                             Max. +70ºC
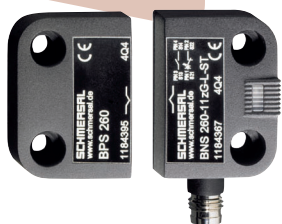Protection class: IP67 to IEC/EN 60529

Ordering Selection

BNS 33(1)Z(2)-(3)-(4)

(1)	**02**	2 Opener (NC)
	11	1 Normally open contact (NO)/1 Opener (NC)
	12	1 Normally open contact (NO)/2 Opener (NC)
(2)	*without*	without LED switching conditions display
	G	with LED switching conditions display
(3)	*without*	with cable
	ST	with Connector M8
(4)	*without*	Manual release
	2187	Manual release from side (power to unlock)
	2187-70	Individual contact outlet with LED
	2237	Actuation from cable direction

System Components

Description	Part No.
Actuators	
Particularly suitable for sliding doors	**1122893 - AZ 17/170-B1**
Damps vibration on guard device	**1137406 - AZ 17/170-B1-2245**
Accessories	
Centring guide for AZ 17 and AZM 170	**1208493 - AZM 170-B**

BNS 260

Safety sensors

• Thermoplastic enclosure
• Small body
• Concealed mounting possible
• 26 x 36 x 13mm
• Long life
• No mechanical wear
• Insensitive to soiling
• Insensitive to transverse misalignment

Ambient conditions

Environmental temperature: Min. -25ºC
                                Max. +70ºC
Storage/transport temperature: Min. -25ºC
                                Max. +70ºC
Protection class: IP67

Ordering Selection

BNS 260-(1)Z(2)Z(3)-(4)-(5)

(1)	11	1 Normally open contact (NO)/1 Opener (NC)
	02	2 Opener (NC)
(2)	without	without diagnostic output
	/01	1 Opener (NC)
(3)	without	without LED switching conditions display
	G	with LED switching conditions display
(4)	without	Pre-wired cable
	ST	with Connector
(5)	L	Door hinge on left-hand side
	R	Door hinge on right-hand side

System Components

Description	Part No.
Actuators	
Actuator and sensor on a mounting level	**1184395 - BPS 260-1**
Actuator 90º attached to the sensor	**1184396 - BPS 260-2**
Connector	
For BNS 33, BNS 36, enables the interconnection and the connection of BNS BNS 260 (with 2 NC) safety sensors to a common safety monitoring module	**1194060 - BNS-Y-02**
Accessories	
To mount the magnetic safety sensor and actuator on ferromagnetic material	**1184643 - SPACER BNS 260**

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Preventa XCSDM Coded Magnetic Switches

- Actuation face-to-face, side-to-side and face-to-side
- Compact version - 2 contacts
- Standard version - 3 contacts
- Coded magnet technology- switch cannot be totally defeated by a single magnet
- Certified safety solution when used with 2NC compact and 2NC+1NO standard versions need XPSAF safety relays
- Tolerant of up to 6mm misalignment
- Optional LED indication

Technical specification

Conformity standards:	IEC 947-1, EN 547-5-1 & EN 547-5-3 EN 60204-1, EN 1088, BG Approval
Safety contacts:	
Compacts -	1 NO+1NC or 2NC
Standard -	2NC+1NO or 2NO+1NC

Contact Rating:	100mA@ 24V DC
Degree of protection:	IP67
Operating temperature:	-25°C to +85°C
Dimensions:	
Compacts -	16x51x7mm
Standard -	25x88x13mm
Safety Data:	B10 = 10 million operations B10D = 50 million operations

Compact Magnetic Switches - 2m Integrated Cable

Contact Configuration		Type	Part No.
1NO+1NC	24V DC	without LED	XCSDMC5902
		with LED	XCSDMC5912
2NC	24V DC	without LED	XCSDMC7902
		with LED	XCSDMC7912

Standard Magnetic Switches - 2m Integrated Cable

		Type	Part No.
2NO+1NC	24V DC	without LED	XCSDMP5002
		with LED	XCSDMP5012
2NC+1NO	24V DC	without LED	XCSDMP7002
		with LED	XCSDMP7012

Coded Magnetic Safety Switch with Built-in Safety Module

Safety Category, Performance Level/SIL	Type	Part No.
CAT 3, PL d/SIL 2	2m lead	XCSDM379102
	5m lead	XCSDM379105
	10m lead	XCSDM379110
	M12 connector	XCSDM3791M12
CAT 4, PL e/SIL 3	2m lead	XCSDM480102
	5m lead	XCSDM480105
	10m lead	XCSDM480110
	M12 connector	XCSDM4801M12
Accessories		
Spare magnet for XCSDM3 and XCSDM4		XCSDMT
Pre-wired connector 10m PUR FEM CON		XZCP29P12L10
Pre-wired connector 2m PUR FEM CON M12		XZCP29P12L2
Pre-wired connector 5m PUR FEM CON M12		XZCP29P12L5

Safety Switches

Guardmaster Trojan 5 Series

Description	Part No.
M20 Interlock 2NC/1NO	440K-T11090
M20 Interlock c/w flexible actuator	440K-T11110

Guardmaster Lifeline 4 Series

Description	Part No.
LRS-4 M20 Rope switch	440E-L13042
LRTS 5m Installation kit	440E-A13079
LRTS 15m Installation kit	440E-A13081

Ferrogard

Description	Part No.
FRS-2 2 2m wired 1NC/1N0	440N-G02002
GS 2 EX Stainless steel 3M 1NC	440N-H02047
FRS-6 1NC 250V AC 2A 4m PVC cable	440N-G02028
FRS-6 1NC 24V DC 1A 2m PVC cable	440N-G02044

Rotacam Switch

Description	Part No.
HS2 M20 3 Pole rotacam 2NC/1N0 hinge switch	440H-R03074

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Safe solutions for your industry

SRB 100DR

Safety control modules for special applications/safety relay module for double reset

- Safety relay module for double reset
- Suitable for signal processing of potential-free outputs, e.g. command devices
- 1 safety contact, STOP 0

Operating Modes

- Emergency-stop buttons
- Guard systems
- Pull-wire emergency stop switches

Ambient conditions

Environmental temperature:	Min. -25ºC
	Max. +45ºC
Storage/transport temperature:	Min. -25ºC
	Max. +70ºC
Protection class-Enclosure:	IP40
Protection class-Terminals:	IP20
Protection class-Clearance:	IP54

SRB 100DR Series

Voltage	Part No.
24V AC/DC	**1196816 - SRB 100DR**

SRB 301LC

Guard door monitors and safety control modules for emergency stop Applications / monitoring of electromechanical switchgear

- 3 Safety contacts, STOP 0
- 1 signalling output
- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks

Operating Modes
- Emergency stop buttons
- Guard systems
- Pull-wire emergency stop switches

Ambient conditions

Environmental temperature:	Min. -25ºC
	Max. +45ºC
Storage/transport temperature:	Min. -40ºC
	Max. +85ºC
Protection class-Enclosure:	IP40
Protection class-Terminals:	IP20
Protection class-Clearance:	IP54

SRB 301LC Series

Voltage	Part No.
24V AC/DC	**1165472 - SRB 301LC**

SRB 301MC

Guard door monitors and safety control modules emergency stop applications/monitoring of electromechanical switchgear

- Fit for signal evaluation of outputs of safety magnetic switches
- 3 Safety contacts, STOP 0
- 1 signalling output
- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks

Operating Modes
- Emergency stop button
- Guard systems
- Pull-wire emergency stop switches
- Safety light curtain
- Safety sensor

Ambient conditions

Environmental temperature:	Min. -25ºC
	Max. +60ºC
Storage/transport temperature:	Min. -40ºC
	Max. +85ºC
Protection class-Enclosure:	IP40
Protection class-Terminals:	IP20
Protection class-Clearance:	IP54

SRB 301MC Series

Voltage	Part No.
24V AC/DC	**1193471 - SRB 301MC-24V**

SRB 301ST

Guard door monitors and safety control modules for emergency stop applications/monitoring of electromechanical switchgear

- Suitable for signal processing of potential-free outputs, e.g. emergency stop command devices, position switches and solenoid interlocks
- Suitable for signal processing of outputs connected to potentials (AOPDs), e.g. safety light grids/curtains
- Fit for signal evaluation of outputs of safety magnetic switches
- 3 Safety contacts, STOP 0
- 1 signalling output

Operating Modes
- Emergency stop buttons
- Guard systems
- Pull-wire emergency stop switches
- Safety light curtain
- Safety sensor

Ambient conditions

Environmental temperature:	Min. -25ºC
	Max. +60ºC
Storage/transport temperature:	Min. -40ºC
	Max. +85ºC
Protection class-Enclosure:	IP40
Protection class-Terminals:	IP20
Protection class-Clearance:	IP54

SRB 301ST Series

Voltage	Part No.
24V AC/DC	**SRB 301ST**

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Preventa XPS Safety Relays

- Normally open safety relay outputs
- Normally closed contacts and or Solid state outputs for signalling e.g. to PLCs, beacons etc.
- Suitable for Performance Levels (PL) within EN ISO13849-1, and Safety Integrity Levels (SIL) within EN 62061
- TUV, CSA, UL, CCC

Technical Specification

Conformity standards:	EN 60204-1, EN 13850, EN ISO 13849-1, EN 62061, EN 60204-1	Output:	AC15 C300: Inrush 1800VA
		Breaking capacity	Maintained 180VA
			DC13 24V/1.5A -L/R = 50ms
Fuse protection:	Internal, electronic	Output fuse protection:	6A fast acting, 4A gG
Operating temperature:	-10°C to +55°C		

Preventa XPS Features

Type	Outputs		Solid State (signalling)	Safety Category Acc. to EN ISO 13849-1	Performance Level (PL) Acc. to EN ISO 13849-1	Safety Integrity Level (SIL) Acc. to EN 62061	LED Indicators	Dimentions (mm)		
	Safety No	Signalling NC						Depth	Height	Width
XPS AC	3	-	1	3	d	2	2	111	99	22.5
XPS AF	3	-	-	4	e	3	3	111	99	22.5
XPS AK	3	1	4	4	e	3	4	114	99	45
XPS AR	7	2	4	4	e	3	4	114	99	90
XPS ATE	3 Instant +3 Delay 2 Instant	-	4	4, 3	e, d	3, 2	4	114	99	45
XPS AV	+3 Delay	-	4	4, 3	e, d	3, 2	11	114	99	45
XPS VNE	1 +1INC	-	2	3	d	2	4	114	99	45
XPS DMB	2	-	2	4	e	3	3	111	99	22.5
XPS DME	2	-	2	4	e	3	15	111	99	45
XPS BF	2	-	2	4	e	3	3	111	99	22.5

Preventa Safety Relays

Functionality		Voltage	Part No.
Emergency stop	Switch monitoring	24V AC/DC	XPSAC5121
		115V AC	XPSAC3421
		230V AC	XPSAC3721
		24V AC/DC	XPSAF5130
Emergency stop	Switch/light curtain monitoring	24V AC/DC	XPSAFL5130
Emergency stop	Switch/sensing mats/light curtain monitoring	24V AC/DC	XPSAK311144
		110V AC/24V DC	XPSAK361144
		230V AC/24V DC	XPSAK371144
Monitoring of two-hand control stations (e.g. XY2SB devices)		24V DC	XPSBF1132
Emergency stop	For zero speed detection of AC/DC motors	24V DC	XPSVNE1142P
Emergency stop	Guard switch monitoring with 0-30 sec time delay Stop category 0 (instantaneous) and stop category 1 time delay outputs	24V AC/DC	XPSATE5110P
		230V AC	XPSATE3710P
Emergency stop	Guard switch monitoring with 0-300 sec time delay Stop category 0 (instantaneous) and stop category 1 time delay outputs	24V DC	XPSAV11113
Coded magnetic switch enabling	Up to 2 pairs (e.g XCSDMC/DMP/DMR)	24V DC	XPSDMB1132
	Up to 6 pairs (e.g XCSDMC/DMP/DMR)	24V DC	XPSDME1132
Emergency stop	Guard switch/light curtain monitoring	24V AC/DC	XPSAR311144
		115V AC/24V DC	XPSAR351144
		230V AC/24V DC	XPSAR371144

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PILZ
THE SPIRIT OF SAFETY

PNOZsigma safety relays

Technical specification	PNOZs1	PNOZs2	PNOZs3	PNOZs4	PNOZs5	PNOZs6
Input channels	1	1	1 & 2	2	2	2
Safety outputs	2 NO	3 NO	2 NO	3 NO	2 NO	3 NO
Safety outputs (timed)	-	-	-	-	2 NO	-
Time delay range	-	-	-	-	0-300 secs	-
Auxiliary outputs	-	1 NC	-	1 NC	-	1 NC
Semi conductor outputs	1	1	1	1	1	1
Input options						
Emergency stop	•	•	•	•	•	-
Safety gate switch	•	•	•	•	•	-
Light curtain	-	-	•	•	•	-
Two-hand control	-	-	-	-	-	•
Reset	Manual	Manual/monitored	Monitored	Manual/automatic	Start-up test	Manual
Start	Automatic	Automatic	Start-up test	Start-up test	Start-up test	-
Supply voltage	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC
Universal power supply	-	-	-	48-240V AC/DC	48-240V AC/DC	-
External fast fuse rating	4A	4A	4A	6A/10A	6A	6A
Connections	Plug-in	Plug-in	Plug-in	Plug-in	Plug-in	Plug-in
Housing width (mm)	12.5	17.5	17.5	22.5	22.5	22.5
PFH_D	2×10^{-7}	2.5×10^{-9}	2.31×10^{-9}	2.31×10^{-9}	2.31×10^{-9}	2.62×10^{-9}
PFH_D (delayed)	-	-	-	-	2.14×10^{-9}	-
Safety category	Cat 2	Cat 2	Cat 4	Cat 4	Cat 4	EN574, Typ IIIC
Performance level	PLd	PLd	PLe	PLe	PLe	PLe
SIL claim	SIL CL2	SIL CL3	SIL CL3	SIL CL3	SIL CL3	SIL CL3

• Can be connected

Screw Terminals

Description	Ident No	Part No.
PNOZs1	750101	**PNOZS124VDC**
PNOZs2	750102	**PNOZS224VDC**
PNOZs3	750103	**PNOZS324VDC**
PNOZs4	750104	**PNOZS424VDC**
PNOZs4, universal voltage	750134	**PNOZS4/48-240VAC/DC**
PNOZs5	750105	**PNOZS524VDC**
PNOZs5, universal voltage	750135	**PNOZS5/48-240VAC/DC**
PNOZs6	750106	**PNOZS624VDC**

Spring-loaded Terminals

Description	Ident No	Part No.
PNOZs1	751101	**PNOZS1C24VDC**
PNOZs2	751102	**PNOZS2C24VDC**
PNOZs3	751103	**PNOZS3C24VDC**
PNOZs4	751104	**PNOZS4C24VDC**
PNOZs4, universal voltage	-	**-**
PNOZs5	751105	**PNOZS5C24VDC**
PNOZs5, universal voltage	-	**-**
PNOZs6	751106	**PNOZS6C24VDC**

To increase safety outputs use PNOZsigma expander modules on next page.

TE Controls ETS GAP Western Automation

PNOZsigma contact expander modules

Technical specification	PNOZs7	PNOZs7.1	PNOZs7.2	PNOZs8	PNOZs9	PNOZs10	PNOZs11	PNOZs22
Safety outputs	4 NO	3 NO	4 NO	2 NO	3 NO	4 NO	8 NO	2 x 3 NO
Safety outputs (timed)	-	-	-	-	-	•	-	-
Time delay range	-	-	-	•	0-300 secs	-	-	-
Auxiliary outputs	1 NC	-	1 NC	-	1 NC	1 NC	1 NC	2 NC
Semi conductor outputs	1	1	1	1	-	-	-	-
Compatible relays								
PNOZelog	•	•	•	•	•	•	•	-
PNOZmulti	•	•	•	•	•	•	•	-
PNOZsigma	-	-	-	-	-	-	-	•
PNOZmm0.1p	-	-	-	-	-	-	-	•
PNOZmm0.2p	-	-	-	-	-	-	-	•
PNOZ X	•	•	•	•	•	•	•	-
Supply voltage	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC
External fast fuse rating	6A	6A	6A	4A	6A	10A	10A	6A
Connections	Plug-in	Plug-in	Plug-in	Plug-in	Plug-in	Plug-in	Plug-in	Plug-in
Housing width (mm)	17.5	17.5	17.5	12.5	17.5	45	45	22.5
PFH$_D$	2.31×10^{-9}	2.31×10^{-9}	2.31×10^{-9}	2×10^{-7}	2.34×10^{-9}	2.31×10^{-9}	2.31×10^{-9}	2.31×10^{-9}
Safety category*	Cat 4	Cat 4	Cat 4	Cat 2	Cat 4	Cat 4	Cat 4	Cat 4
Performance level*	PLe	PLe	PLe	PLe	PLe	PLe	PLe	PLe
SIL claim*	SIL CL3	SIL CL3	SIL CL3	SIL CL2	SIL CL3	SIL CL3	SIL CL3	SIL CL3

• Can be connected

*The category that can be achieved depends on the category of the base unit. The contact expander module may not exceed this.

Screw Terminals

Description	Ident No	Part No.
PNOZs7	750107	**PNOZS724VDC**
PNOZs7.1	750167	**PNOZS7124VDC**
PNOZs7.2	750177	**PNOZS7224VDC**
PNOZs8	750108	**PNOZS824VDC**
PNOZs9	750109	**PNOZS924VDC**
PNOZs10	750110	**PNOZS1024VDC**
PNOZs11	750111	**PNOZS1124VDC**
PNOZs22	750132	**PNOZS2224VDC**

Spring-loaded Terminals

Description	Ident No	Part No.
PNOZs7	751107	**PNOZS7C24VDC**
PNOZs7.1	751167	**PNOZS71C24VDC**
PNOZs7.2	751177	**PNOZS72C24VDC**
PNOZs8	751108	**PNOZS8C24VDC**
PNOZs9	751109	**PNOZS9C24VDC**
PNOZs10	751110	**PNOZS10C24VDC**
PNOZs11	751111	**PNOZS11C24VDC**
PNOZs22	751132	**PNOZS22C24VDC**

PILZ
THE SPIRIT OF SAFETY

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E·T·N

Powering Business Worldwide

Signal Towers

Plug together light/audible signal towers. Easily user configured using selectable links in each module to provide up to 5 independently switched sections in each tower. Quick and easy to assemble. IP66 as standard.

SL7 Series Light Modules

Voltage	Colour	Continuous Light Part No.	Flashing Light Part No.	Strobe Light Part No.
24V DC		SL7-L24-B	SL7-BL24-B	SL7-FL24-B
		SL7-L24-G	SL7-BL24-G	SL7-FL24-G
		SL7-L24-R	SL7-BL24-R	SL7-FL24-R
		SL7-L24-W	SL7-BL24-W	SL7-FL24-W
		SL7-L24-Y	SL7-BL24-Y	SL7-FL24-Y
		SL7-L24-A	SL7-BL24-A	SL7-FL24-A
230V AC		SL7-L230-B	SL7-BL230-B	SL7-FL230-B
		SL7-L230-G	SL7-BL230-G	SL7-FL230-G
		SL7-L230-R	SL7-BL230-R	SL7-FL230-R
		SL7-L230-W	SL7-BL230-W	SL7-FL230-W
		SL7-L230-Y	SL7-BL230-Y	SL7-FL230-Y
		SL7-L230-A	SL7-BL230-A	SL7-FL230-A

SL7 Series Sounders

Voltage	Part No.
24V DC	SL7-AP24
230V AC	SL7-AP230

SL7 Series Base + Stand

Hight (mm)	Part No.
100	SL7-CB-100
250	SL7-CB-250
400	SL7-CB-400
800	SL7-CB-800

SL7 Series Wall Bracket

Description	Part No.
One-sided base with bracket spring-loaded terminals	SL7-CB-FW

Schneider Electric

Harmony Beacons

Description		Part No.	Insert Colour
Base unit & cover	Side or bottom cable entry	XVBC21	
Base unit & cover with AS-i connection	Bottom cable entry	XVBC21B	
LED Unit	24V AC/DC - permanent light	XVBC2B	☐
LED Unit	230V AC - permanent light	XVBC2M	☐
Sounder unit	12..48V AC/DC - Adjustable 70..90dB	XVBC9B	
	120..230V AC - Adjustable 70..90dB	XVBC9M	
100mm Black aluminium metal tube + foot mount		XVBZ02	
Flashing light LED	24V AC/DC	XVBC5B	☐
	230V AC	XVBC5M	☐
Flashing discharge tube	24V AC/DC	XVBC6B	☐
	230V AC	XVBC6M	☐

☐ Part No. Completion
When ordering complete the Part No. by adding the following:-

	Colour	Code
Beacons	Green	3
	Red	4
	Amber	5
	Blue	6
	Clear	7

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With the i-switch range comes an important safety feature which prevents the enclosure cover being removed when the device has been padlocked in the 'Off' position. When combined with the excellent on-load breaking capacity of the i-switch family this feature ensures that the term 'Safety Switch' is fully satisfied.
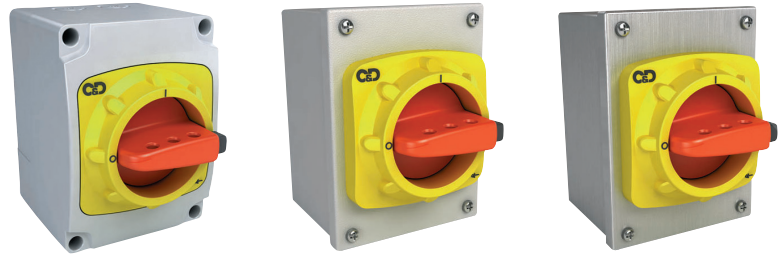
i-Switch Range (20A - 63A)

Features
• IP65 Protection

Moulded Plastic		
Poles	**Rating A**	**Part No.**
2	25	**SDP252**
3	25	**SDP253**
4 (3P +N)	25	**SDP253N**
6	20	**SDP256**
2	40	**SDP402**
3	40	**SDP402**
4 (3P +N)	40	**SDP403N**
6	40	**SDP406**
2	63	**SDP632**
3	63	**SDP633**
4 (3P +N)	63	**SDP633N**
Steel		
2	25	**SDMG252**
3	25	**SDMG253**
2	40	**SDMG402**
3	40	**SDMG403**
2	63	**SDMG632**
3	63	**SDMG633**
Stainless Steel		
2	25	**SDS252**
3	25	**SDS253**
2	40	**SDS402**
3	40	**SDS403**
2	63	**SDS632**
3	63	**SDS633**

We supply the complete Craig & Derricott i-Switch range, contact your local sales office for details.

We supply the complete Craig & Derricott i-Switch Range Contact your local sales office for details.

ATEX Zone 22 (category 3D) non-conductive dust range

The Craig & Derricott i-Push range of assembled 'Emergency STOP' stations is extensive and offers the user the widest range of options, which include:

• Moulded or die-cast stayput actuators
• Surface or flush mounting
• Enclosure materials - Polycarbonate, polyester, die-cast aluminium and stainless steel
• Flap cover operated actuators (padlockable to prevent unauthorised rest)
• Multi-contact options

i-Push Range

Features
• IP65 Protection
• Continuous thermal current (Ith) 10A
• Yellow/Black insulated enclosure with 2 knock-outs

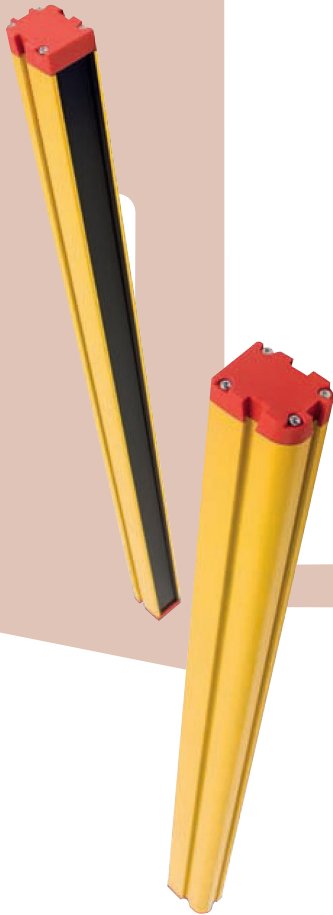| Moulded Plastic				
Type	**Characteristic**	**NO**	**NC**	**Part No.**
Emergency-Stop with position indicator (supplied with 2 keys)	Key reset	1	1	**EMS/K/PS/CP**
Emergency-Stop with shrouded actuator to prevent accidental operation with position indicator	Twist to reset	1	1	**EMS/TS/PS/CP**
Emergency-Stop with position indicator	Twist to reset	1	1	**EMS/T/PS/CP**

GRABWIRE SWITCHES

The GW range is designed for indoor or outdoor applications with a span between switches of 100M (max.). All items operate using a 'taut wire' system which is pulled to initiate a 'STOP' function.

The grab wire switches are sold individually and the only other component required to complete an installation is a 'Pull Wire' Kit.

These are sold in various lengths and contain the pull wire all parts required to make-off the wire at both ends and sufficient eyebolts to support the wire at 2M intervals.

Contact your local sales office for details.

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SWITCH DISCONNECTORS   9

OMRON

Multi-beam, Finger- & Hand Protection Safety Sensor

The F3S-TGR-CL multi-beam, finger- and hand protection safety sensors are available in Type 2 (PL c) and Type 4 (PL e) with integrated safety control functions selectable via built-in dip-switches.

- Type 2 or type 4 acc. EN61496-1
- PL c or PL e acc. ISO13849
- All models with dip-switch setup for external device monitoring, interlock function, range setting (short & long range) and optical or wired coding
- Advanced models with pre-reset function, T-, L-or X- muting function & muting lamp integrated

Multi-beam models
- Max. operating range 12m in active/passive
- Max. operating range 50m in active/active
- Selectable muting mode (timeout or infinite muting) in advanced models

Finger- or hand protection models (14, 35 or 70mm resolution)
- Max. operating range 6m in 14mm resolution
- Max. operating range 14m in 35 or 70mm resolution
- Selectable muting mode (timeout muting), blanking and single / double brake function in advanced models

Model number structure

Multi-beam safety sensors

F3S-TGR-CL ☐ ☐ - K ☐ ☐ - ☐ - ☐
      1 2   3 4   5   6

1. Type
    2: Type 2
    4: Type 4
2. Feature set
    A: Advanced
    B: Basic
3. Number of optical axes
    2: 2 optical axes
    3: 3 optical axes
    4: 4 optical axes
4. System
    _: Active/active system
    C: Active/passive system
5. Protective height [mm]
    500, 800, 900, 1,200
6. Additional functions
    _: Standard
    LD: Long distance (only active/active systems)

Finger & hand protection safety sensors

F3S-TGR-CL ☐ ☐ - ☐ ☐ - ☐
      1 2   3 4   5

1. Type
    2: Type 2
    4: Type 4
2. Feature set
    A: Advanced
    B: Basic
3. Resolution
    014: Finger protection
    035: Hand protection
    070: Foot protection (only slave versions)
4. Protective height [mm]
    150, 300, 450, 600, 750, 900, 1,050, 1,200, 1,350, 1,500,
    1,650, 1,800, 1,950, 2,100, 2,250,
    (2,400, only standalone versions)
5. Version
    _: Standard
    M: Master
    S: Slave

Specifications

Item	F3S-TGR-CL2_-0__	F3S-TGR-CL4_-0__
Sensor type	Type 2	Type 4
Protective height	500mm, 800mm, 900mm or 1,200mm	
Operating range:	F3S-TGR-CL__-K_ 0.5 to 20m or 20 to 40m (Dip switch option) F3S-TGR-CL__-K_-___-LD 25 to 50m F3S-TGR-CL__-K2C-500 0.5 to 12m F3S-TGR-CL__-K3C-800 0.5 to 8m F3S-TGR-CL__-K4C-____ 0.5 to 7m	
Beam pitch	F3S-TGR-CL__-K2_-500: 2 beams, 500mm F3S-TGR-CL__-K3_-800: 3 beams, 400mm F3S-TGR-CL__-K4_-900: 4 beams, 300mm F3S-TGR-CL__-K4_-1200: 4 beams, 400 mm	
Effective aperture angle (EAA)	Within ±5°	Within ±2.5°
	for the emitter and receiver at a detection distance of at least 3m according to IEC 61496-2	
Light source	Infrared LED (880nm), power dissipation <3mW, Class 1 per EN 60825-1	
Supply voltage	24V DC ±20%, according EN 60204-1 able to cover a drop of voltage of at least 20ms	
OSSD	2 PNP transistor outputs, load current 2 × 250mA max	
Test functions	Self test (after power ON and during operation)	

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SAFETY PRODUCTS

F3S-TGR-CL2_-K_ (Type 2)

Basic feature set*1

System	Sensing distance	Detection capability	Part No.
Active/passive	0.5m … 12m	500	F3S-TGR-CL2B-K2C-500
	0.5m … 8m	400	F3S-TGR-CL2B-K3C-800
	0.5m … 7m	300	F3S-TGR-CL2B-K4C-900
		400	F3S-TGR-CL2B-K4C-1200
Active/active	0.5m … 40m	500	F3S-TGR-CL2B-K2-500
		400	F3S-TGR-CL2B-K3-800
		300	F3S-TGR-CL2B-K4-900
		400	F3S-TGR-CL2B-K4-1200
Active/active, long distance	25m … 50m	500	F3S-TGR-CL2B-K2-500-LD
		400	F3S-TGR-CL2B-K3-800-LD
		300	F3S-TGR-CL2B-K4-900-LD
		400	F3S-TGR-CL2B-K4-1200-LD

Advanced feature set*2

System	Sensing distance	Detection capability	Part No.
Active/passive	0.5m … 12m	500	F3S-TGR-CL2A-K2C-500
	0.5m … 8m	400	F3S-TGR-CL2A-K3C-800
	0.5m … 7m	300	F3S-TGR-CL2A-K4C-900
		400	F3S-TGR-CL2A-K4C-1200
Active/active	0.5m … 40m	500	F3S-TGR-CL2A-K2-500
		400	F3S-TGR-CL2A-K3-800
		300	F3S-TGR-CL2A-K4-900
		400	F3S-TGR-CL2A-K4-1200
Active/active, long distance	25m … 50m	500	F3S-TGR-CL2A-K2-500-LD
		400	F3S-TGR-CL2A-K3-800-LD
		300	F3S-TGR-CL2A-K4-900-LD
		400	F3S-TGR-CL2A-K4-1200-LD

*1 Basic feature set: Manual/automatic restart, coding
*2 Advanced feature set: Basic + Muting + integrated Muting lamp + Pre-reset

F3S-TGR-CL4_-K_ (Type 4)

Basic feature set*1

System	Sensing distance	Detection capability	Part No.
Active/passive	0.5m … 12m	500	F3S-TGR-CL4B-K2C-500
	0.5m … 8m	400	F3S-TGR-CL4B-K3C-800
	0.5m … 7m	300	F3S-TGR-CL4B-K4C-900
		400	F3S-TGR-CL4B-K4C-1200
Active/active	0.5m … 40m	500	F3S-TGR-CL4B-K2-500
		400	F3S-TGR-CL4B-K3-800
		300	F3S-TGR-CL4B-K4-900
		400	F3S-TGR-CL4B-K4-1200
Active/active, long distance	25m … 50m	500	F3S-TGR-CL4B-K2-500-LD
		400	F3S-TGR-CL4B-K3-800-LD
		300	F3S-TGR-CL4B-K4-900-LD
		400	F3S-TGR-CL4B-K4-1200-LD

Advanced feature set*2

System	Sensing distance	Detection capability	Part No.
Active/passive	0.5m … 12m	500	F3S-TGR-CL4A-K2C-500
	0.5m … 8m	400	F3S-TGR-CL4A-K3C-800
	0.5m … 7m	300	F3S-TGR-CL4A-K4C-900
		400	F3S-TGR-CL4A-K4C-1200
Active/active	0.5m … 40m	500	F3S-TGR-CL4A-K2-500
		400	F3S-TGR-CL4A-K3-800
		300	F3S-TGR-CL4A-K4-900
		400	F3S-TGR-CL4A-K4-1200
Active/active, long distance	25m … 50m	500	F3S-TGR-CL4A-K2-500-LD
		400	F3S-TGR-CL4A-K3-800-LD
		300	F3S-TGR-CL4A-K4-900-LD
		400	F3S-TGR-CL4A-K4-1200-LD

*1 Basic feature set: Manual/automatic restart, coding
*2 Advanced feature set: Basic + Muting + integrated Muting lamp + Pre-reset

Accessories

Receiver Cables (M12-8pin, shielded, flying leads)

Shape	Description		Part No.
	Sensor connector with open cable end M12-8pin, outer shielding layer	Receiver cable, 2m length	Y92E-M12PURSH8S2M-L
		Receiver cable, 5m length	Y92E-M12PURSH8S5M-L
		Receiver cable, 10m length	Y92E-M12PURSH8S10M-L
		Receiver cable, 25m length	Y92E-M12PURSH8S25M-L

Transmitter Cables (M12-4pin, shielded, flying leads)

	Sensor connector with open cable end M12-4pin, outer shielding layer	Transmitter cable, 2m length	Y92E-M12PURSH4S2M-L
		Transmitter cable, 5m length	Y92E-M12PURSH4S5M-L
		Transmitter cable, 10m length	Y92E-M12PURSH4S10M-L
		Transmitter cable, 25m length	Y92E-M12PURSH4S25M-L

Mounting brackets

	Mounting bracket	Mounting bracket x 1, SLC mounting screws x 1 set	F39-TGR-ST-SB
	Adjustable bracket	Adjustable bracket x 1, Bracket mounting screws x 1 set	F39-TGR-ST-ADJ

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LIGHT GUARDS 9