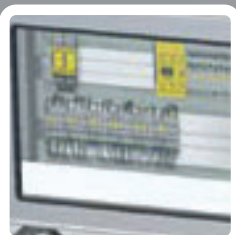


GK-C: Product Line Overview

# MACHINE GUARDING SAFETY PRODUCTS



# CONTENTS



1

## Safety Controllers

Programmable Safety Controllers  
 General Safety Controllers  
 Muting Module, Double Reset  
 Monitor 2 Safety Functions  
 Output Expander  
 Input Expander  
 Safe Standstill Monitoring  
 Serial Diagnostic Gateway

Page 8-9



2

## Guard Door Monitoring

Electronic Safety Sensors  
 Electronic Locking Devices  
  
 Keyed Interlocks  
 Solenoid Interlocks  
  
 Coded Magnet Sensors  
 Hinged Safety Switches

Page 10-13



3

## Safety Rated Limit Switches

### Key Transfer System

Page 14



4

## Optoelectronic Safety Devices

Safety Light Curtains  
 Safety Light Grids  
 Safety Light Barriers  
  
 Safety Laser Scanner

Page 15



The details and data referred to herein have been carefully checked. Subject to technical amendments, errors, product improvements, and new variants since publication. Product received may differ from pictured. Images shown are for illustrative purposes only. Version 01.2022



5

**Tactile Safety Devices**

Safety Edges  
Safety Mats

Page 16



6

**Control Devices with Safety Function**

Control Panels  
Enabling Device  
Foot Switches  
Two Hand Control

Emergency Cable Pulls  
Emergency Stop Buttons

Page 16-17



**Special Applications**

IP69 / IP69K Rated  
EX Explosion Protection  
AS-I integrated  
Industry Solutions

Page 18



**Safety Guarding**

Page 19

**tec.nicum**  
Engineering Services

Page 20

## NEW PRODUCT HIGHLIGHTS



### ELECTRONIC SOLENOID INTERLOCK AZM40

- 2000 N locking force
- Bi-Stable locking
- RFID Safety Sensor
- Individual coding available,  
“high” level coding to ISO 14119
- Compact size: 40 x 119 x 20 mm
- Symmetrical housing
- Actuator approach from 180°
- M12 quick connector
- LED status indicators visible from 3 sides
- PLe/Category4 (ISO 13849) or SIL3 (IEC 61508)

For more information, see our website:

<https://www.schmersalusa.com/products/innovations/solenoid-interlock-azm40>



### SOLENOID INTERLOCK AZM150

- 1500 N locking force
- Power-to-lock or Power-to-unlock versions
- Individual coding available,  
“high” level coding to ISO 14119
- Slim housing (40 mm wide)
- Two actuator slots (top and face)
- Head can be rotated in 90° steps
- Manual release, emergency release (N), or  
emergency exit (T) options.
- PLe/Category4 (ISO 13849) or SIL3 (IEC 61508)

For more information, see our website:

<https://www.schmersalusa.com/products/innovations/solenoid-interlock-azm150>

**NEW**

## PRODUCT HIGHLIGHTS



### SAFETY LASER SCANNER

#### HOKUYO UAM-05LP

- Compact size 3.75" x 3.15" x 3.15"
- 270° detection angle
- 5 meter protection zone
- 20 meter warning zone
- Data Output via Ethernet
- Dual zone monitoring option
- Applications:
  - Collision detection on automated vehicles
  - Presence detection around robots, palletizers
  - Point of operation on hazardous machines
- Type 3 (IEC 61496), PLd/Category3 (ISO 13849) or SIL2 (IEC 61508)

For more information, see our website:

<https://www.schmersalusa.com/products/additional-products/hokuyo-scanner>

### HEAVY DUTY SWITCH

#### BS655/656 & RS655/656



- Metal (655) or Plastic (656) housing
- Emergency Cable Pull version: (RS)
  - Bi-directional actuation
  - 100 meters, both directions
  - DuplineSafe integration option
  - Cable and installation accessories available
- Limit Switch / Belt Alignment version: (BS)
  - 2 roller lever arms for position detection
  - 3 lever rollers for belt alignment
  - Dupline integration option

For more information, see our website:

<https://www.schmersalusa.com/products/innovations/position-switches-hds>

# CONNECTIVITY

Schmersal offers several simple and low cost plug & play field installation systems for series wiring of safety devices, achieving up to Cat. 4 / PLe / SIL 3. These systems allow for individual evaluation of diagnostic signals from each connected safety device, with locking devices being actuated individually. Most installation systems are capable of communicating with common field buses, via the PSC1 Programmable Controller or a Universal Gateway module.

## Series wiring...

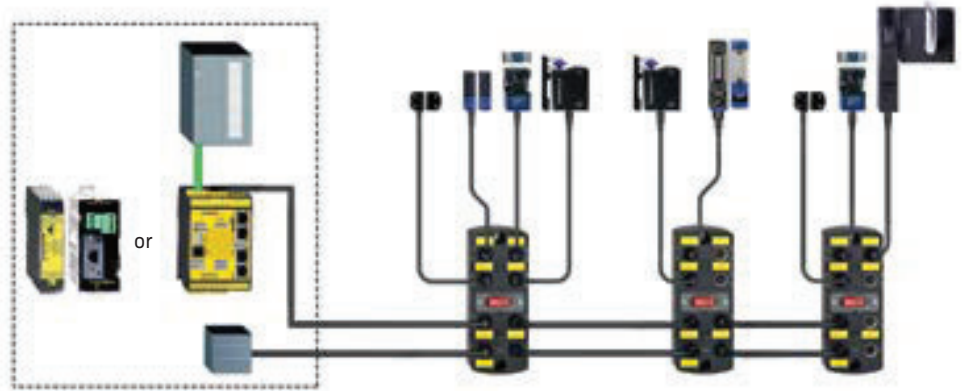
### with CSS-Y adaptors

Adaptor with M12 connection used to series connect up to 31 electronic safety devices with Serial Diagnostics (SD).



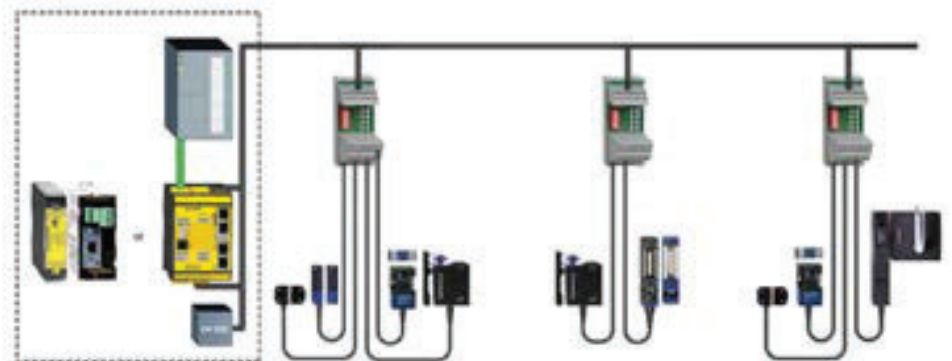
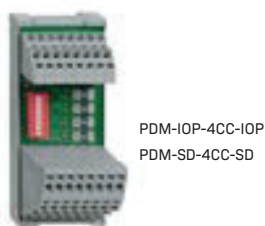
### with PFB

The PFB is an IP67 rated passive field box which can connect up to 4 electronic safety devices or Serial Diagnostic (SD) devices in series. It features integrated LEDs to show status of each device, and is easy to configure via DIP switches.



### with PDM

The PDM Passive distribution module for series-wiring, designed for mounting in panels. It can connect up to 4 electronic safety devices or Serial Diagnostic (SD) devices in series. It features integrated LEDs to show status of each device, and is easy to configure via DIP switches.



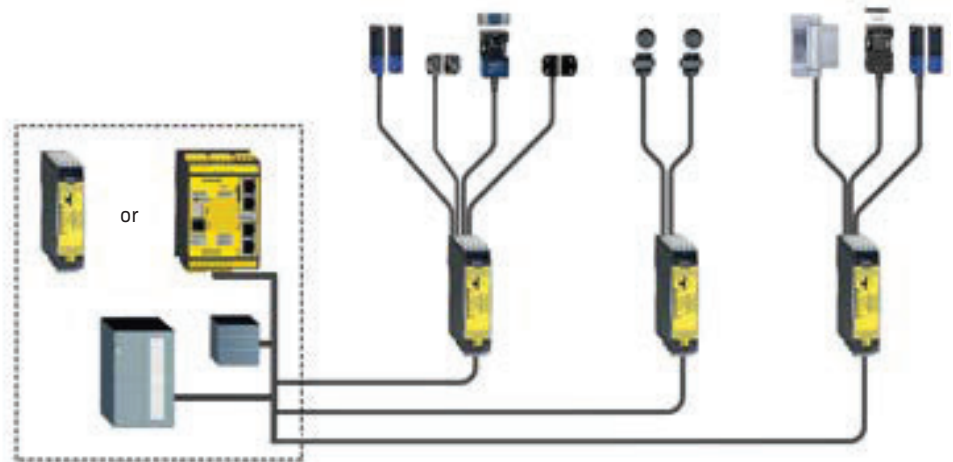


### with SRB-E-204PE

The active input expander modules SRB-E-204PE are used for safe series connection of electromechanical with dry contacts or electronic devices having OSSD semiconductor outputs. Up to 4 devices can be connected per module. The module can be configured for up to nine different application settings via a rotary knob switch on the face of the unit.



SRB-E-204PE

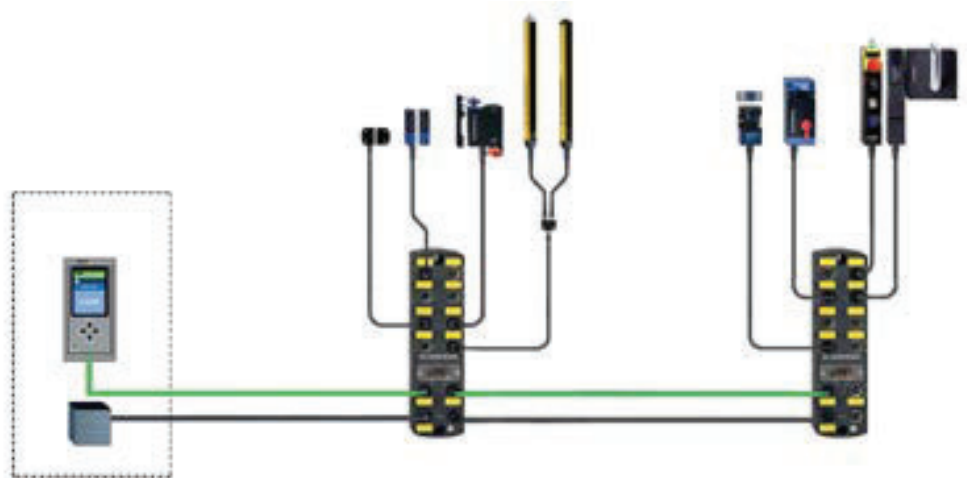


### with SFB

The SFB is a safety field box for PROFINET/PROFIsafe systems which allows simple plug-and-play installation via M12 connectors, of up to eight safety devices per box.



SFB-PN-IRT-8M12-IOP



### with AS-Interface Safety at Work

AS-Interface Safety at Work is a safety bus system based upon the open standard of AS-International. It is a simple yet flexible solution to quickly, efficiently, and cost-effectively integrate a vast safety system. Safety and non-safety components are connected to a central two wire cable which carries power and signals to a monitor. The system can be connected to popular field buses.

See page 18 for a list of AS-I integrated safety devices. Or find the AS-I Logo throughout the brochure for compatible items.



# PROGRAMMABLE SAFETY CONTROLLER



Series	PSC1-C-10	PSC1-C-100	SafePSC2
<b>Inputs</b>	14 safe inputs (up to PLe / SIL3)	14 safe inputs (up to PLe / SIL3) 20 selectable safe in-/outputs	Programming Software <ul style="list-style-type: none"> <li>Modern, object-oriented environment</li> <li>Preconfigured elements</li> <li>Application code reuse by macros</li> <li>Search functions</li> <li>Tracking by color representation and status messages</li> <li>Easy to detect safety functions through practice oriented libraries for logic, Safe Drive Monitoring, SD-bus and encoder elements</li> <li>Configurable user permissions</li> </ul>
<b>Outputs</b>	4 selectable safe semiconductor: 2 A p-switching or p-/n-switching 2 safe relay for 24 VDC or 230 VAC, 2 A 2 signaling, 250 mA 2 pulse (clock outputs) for monitoring of dry contacts	4 selectable safe semiconductor: 2 A p-switching or p-/n-switching 2 safe relay for 24 VDC or 230 VAC, 2 A 2 signaling, 250 mA 2 pulse (clock outputs) for monitoring of dry contacts	
<b>Options</b>	Modular expandable with up to 2 I/O modules (central) Universal communication interface Memory card (SDHC) Safe drive monitoring, for 1 or 2 axes Integrated serial diagnostic (SD) gateway	Modular expandable with up to 8 I/O modules (central / decentral) Universal communication interface Memory card (SDHC) Modular expandable up to 6 safe drive monitoring modules (max. 12 axes)	

The PSC1 is a modular and freely programmable compact safety controller for safe signal processing of safety switchgear. The system has several distinct features:

## Universal communication interface



Universal field-bus connections available



## Serial Diagnostic gateway

Up to 31 Schmersal electronic devices with Serial Diagnostics can be connected and evaluated, with their extended diagnostic data sent via the PSC1 universal communication interface to a field-bus system.

## Memory card

Written programs can be downloaded to the PSC1 module either by computer interface or by memory card option on available modules. The memory card option allows for quick programming of multiple identical systems.

## Safe Master to Master communication



Safe cross-communication is used to combine safety controllers, to safely exchange data via local Ethernet SMMC communication. In a complete system, safe signals from emergency stop or signals from interlocks can be communicated using the safe cross-communication.

## Safe remote IO communication



For the decentral application structure the PSC1-E-37-14DI-4DO-2R0-RIO remote I/O expansion module is available. The local communication is realized via the Ethernet SDDC protocol.

## Safe drive monitoring



Many safety features are supported:

### Safe shut-down:

- Safe Torque OFF (STO)
- Safe Break Control (SBC)

### Safe stopping:

- Safe Operating Stop (SOS)
- Safe Stop 1 (SS1)
- Safe Stop 2 (SS2)

### Safe monitoring:

- Safe Speed Monitor (SSM)
- Safe Cam (SCA)

### Safe movement:

- Safely-Limited Speed (SLS)
- Safe Speed Range (SSR)
- Safe Direction (SDI)
- Safely-Limited Acceleration (SLA)
- Safe Acceleration Range (SAR)

### Safe positioning:

- Safely-Limited Position (SLP)
- Safely-Limited Increment (SLI)
- Safely Emergency Limit (SEL)



# GENERAL PURPOSE SAFETY CONTROLLERS



Model	Operating Voltage (UB)	Types of Inputs Monitored	No. of Devices Monitored	No. of Safety Outputs	No. of Aux. Outputs	Feedback Monitoring	Type of Reset	Cross-short Monitoring
SRB-E-201LC	24V DC	Dry & PNP	1	2 PNP	1	Yes	Monitored-manual, Automatic, or Manual	Selectable
SRB-E-201ST	24V DC	Dry & PNP Two-hand control	1	2 PNP	1	Yes	Monitored-manual, Automatic, or Manual	Selectable
SRB-E-204ST	24V DC	Dry & PNP	4	2 PNP	4	Yes	Monitored-manual, Automatic, or Manual	Selectable
SRB-E-301ST	24V AC/DC	Dry & PNP Safety Mats	1	3 relay	1	Yes	Monitored-manual, Automatic, or Manual	Selectable
SRB-E-301MC	24V AC/DC	Dry & PNP	1	3 relay	1	Yes	Monitored-manual, Automatic, or Manual	Selectable
SRB-E-212ST	24V DC	Dry & PNP Two-hand control	1	2 stop 0 1 stop 1	2	Yes	Monitored-manual, Automatic, or Manual	Selectable
SRB-E-232ST	24V DC	Dry & PNP	1	2 stop 0 3 stop 1	2	Yes	Monitored-manual, Automatic, or Manual	Selectable
SRB-E-322ST	24V DC	Dry & PNP	1	3 stop 0 2 stop 1	2	Yes	Monitored-manual, Automatic, or Manual	Selectable

## Muting module

SRB 202 MSL	24V DC	Muting module	2	2	2	Yes	Automatic	Yes
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## Double Reset

SRB 100 DR	24V AC/DC	Dry contacts	2	1	None	N/A	Monitored-manual DOUBLE RESET	N/A
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## Monitor 2 Safety Functions

SRB-E-402ST	24V DC	Dry & PNP Two-hand control	2	4 relay	2	Yes	Monitored-manual, Automatic, or Manual	Selectable
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## Safety Output Expansion Module

SRB-E-402EM	24V AC/DC	N/A	N/A	4	2 NC	Yes	Monitored-manual, Automatic, or Manual	N/A
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## Input Expansion Module

SRB-E-204PE	24V DC	Dry & PNP	4	2 **	4	No	N/A	Selectable
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\*\* SRB-E-204PE outputs must be monitored by safety controller

## Safe Drive Speed and Standstill Monitoring

Model	Type	Operating Voltage	Input types	Enabling circuits	Auxiliary outputs
SRB-E-302FWS-TS	Standstill, timer	24V DC	1 or 2 impulse sensors	2 Relay 1 PNP	2 PNP
SRB-E-402FWS-TS	Standstill, timer, guard monitoring*	24V DC	1 or 2 impulse sensors	2 Relay 2 PNP	1 NC 1 PNP
DN3PS2	Sensorless Standstill	24V DC	Back EMF	2	None
DN3PD1	Safe Drive Monitor	24V DC	Frequency	2 Relay	2
DN3PD2	Safe Drive Monitor	24V DC	Frequency	2 Relay	2

\* offers additional guard door monitoring circuit

## Serial Diagnostic Gateway

Model	Field Bus Protocol
SD-I-DP-V0-2	PROFIBUS DP
SD-I-U-CCL	CC Link
SD-I-U-EIP	EtherNet IP
SD-I-U-MT	Mobius/TCP
SD-I-U-DN	DeviceNet
SD-I-U-PN	ProfiNetIO
SD-I-U-EC	EtherCAT

## ELECTRONIC SAFETY SENSORS



Series	CSS180	CSS30S	CSS34	RSS260	RSS36	RSS16
<b>Technology</b>	Pulse Echo	Pulse Echo	Pulse Echo	RFID	RFID	RFID
<b>Housing</b>	Thermoplastic	Stainless Steel	Thermoplastic	Thermoplastic	Thermoplastic	Thermoplastic
<b>IP Rating</b>	IP65, IP67	IP65, IP67, IP68, <b>IP69K</b>	IP65, IP67	IP65, IP67	IP65, IP67, <b>IP69K</b>	IP65, IP66, IP67
<b>Dimensions</b>	0.7" dia   3.6"	1.18" dia   3.5"	1"   4"   1"	1.5"   1.25"   0.7"	1"   4.2"   1"	2"   3.5"   1.25"
<b>Connections</b>	Quick Connect Prewired cable	Quick Connect	Quick Connect Prewired cable	Quick Connect	Quick Connect	Screw terminals Cage clamps Quick Connect
<b>Contact Options</b>	1P2P	1P2P SD2P	1P2P SD2P	1P2P SD2P	1P2P SD2P	1P2P SD2P
<b>Features</b>	Flush mounting Integrated LED	Concealed mounting Integrated LED	Actuation from end or side EDM Version Integrated LED	Individual coding Integrated LED EDM & E-stop monitoring	Individual coding Magnetic latching version (18N) with door stop Integrated LED	Individual coding Magnetic latching version (40/60N) with door stop Integrated LED
<b>Actuators (order separately)</b>	CST180-1 CST180-2	CST30S-1	CST34-V-1 CST34-S-1 CST34-S-3	RST260-1 RST16-1 RST-U-2	RST36-1 RST36-1-R RST-U-2	RST16-1-R RST16-1 RST-U-2
<b>Available as</b>		<b>SD</b>	<b>SD</b>	<b>SD</b>	<b>SD</b>	<b>SD</b>

## ELECTRONIC LOCKING DEVICES



Series	MZM100	AZM201	AZM300	AZM40	AZM400
<b>Technology</b>	Pulse Echo	RFID	RFID	RFID	RFID
<b>Locking</b>	Electromagnet	Solenoid	Solenoid	Bi-Stable Solenoid	Motorized Bolt
<b>Housing</b>	Thermoplastic	Thermoplastic	Thermoplastic	Metal & Plastic	Die cast aluminum
<b>IP Rating</b>	IP65, IP67	IP66, IP67	IP66, IP67, <b>IP69K</b>	IP66, IP67	IP66, IP67
<b>Dimensions</b>	1.75"   7.25"   1.75"	1.57"   8.66"   1.96"	3.4"   4"   1.33"	1.57"   4.7"   0.79"	6.2"   3"   1.85"
<b>Connections</b>	Quick Connect	Screw terminals Cage clamps Quick Connect	Quick Connect	Quick Connect	Quick Connect
<b>Contact Options</b>	1P2P SD2P	1P2P SD2P	1P2P SD2P	1P2P	1P2P 2P2P (ST2)
<b>Features</b>	Door stop Magnetic latching	Individual coding Lockout device Emergency Exit	Individual Coding Door Stop Adjustable latching Emergency Exit Lockout device	Individual Coding Countersink or Plan Housing (PH) Guard locking or process locking versions	Individual Coding Emergency Exit Electric by-pass
<b>Actuators (order separately)</b>	MZM100-B1.1	B1 Slide bolt B30 Door handle	AZ/AZM300-B1	AZM40-B1 AZM40-B1-PH	AZM400-B1
<b>Available as</b>	<b>SD</b>	<b>SD</b>	<b>SD</b>		

## KEYED INTERLOCKS



Series	AZ15	AZ16	AZ17	TZG	AZ3350	AZ415	AZ201
<b>Housing</b>	Thermoplastic	Thermoplastic	Thermoplastic	Thermoplastic	Die-Cast metal	Die-Cast metal	Thermoplastic
<b>IP Rating</b>	IP67	IP67	IP67	IP67	IP67	IP67	IP66, IP67
<b>Dimensions</b>	2"   3"   1.3"	2"   3.5"   1.3"	1.3"   2.5"   1.3"	2"   3.8"   1.8"	1.8"   4.5"   1.5"	3.5"   4"   1.8"	1.6"   8.7"   1.9"
<b>Connections</b>	Screw terminals Quick Connect	Screw terminals Quick Connect	IDC connection Quick Connect	Screw terminals	Screw terminals	Screw terminals	Screw terminals Cage clamps Quick Connect
<b>Contact Options</b>	1 NC	1 NO & 1 NC 2 NC 1 NO & 2 NC 3 NC	1 NO & 1 NC 2 NC	1 NO & 1 NC 2 NC	1 NO & 2 NC 3 NC	2 NC / 1NO,1NC 2 NC / 2 NC 2 NC / 2 NO 1NO,1NC/1NO,1NC	1P2P SD2P
<b>Features</b>	4 key entries	Individual coding 4 key entries	Individual coding 2 key entries	Rotatable head	Rotatable head	Adjustable Ball latch (up to 400N)	RFID Sensor Individual coding Lockout device
<b>Actuators (order separately)</b>	AZ15/16-B1 -B2 (flexible) -B3 (flexible) -B6 (flexible)	STS Door handle magnetic latch ball latch +other accessories	AZ17/170-B1 AZ17/170-B5 AZ17-B6 B25 Door handle	TZ/CO TZ/CW Curved options Flexible options	AZ3350-B1 Curved options Flexible options STS Door handle	AZ/AZM415-B1 -B2 (flexible) -B3 (flexible) STS Door handle	B1 Slide bolt B30 Door handle
<b>Available as</b>							<b>SD</b>

## SOLENOID INTERLOCKS



Series	AZM161	AZM170	TZF/TZM	AZM150	AZM415
<b>Housing</b>	Thermoplastic	Thermoplastic	Thermoplastic	Thermoplastic	Die-Cast Aluminum
<b>IP Rating</b>	IP67	IP67	IP67	IP65, IP67	IP67
<b>Dimensions</b>	3.5"   5.125"   1.25"	2.5"   5"   1.25"	4"   5"   1.5"	1.57"   8"   1.9"	5"   5.5"   2"
<b>Connections</b>	Screw terminals Cage clamps Quick Connect	IDC Connection Screw terminals Quick Connect	Screw terminals	Screw terminals	Screw terminals Quick Connect
<b>Contact Options</b>	1NO & 1NC / 3 NC 1NO & 1NC / 1NO & 2NC 1NO & 2NC / 3 NC 1NO & 2NC / 1NO & 1NC 1NO & 2NC / 1NO & 2NC	1NO & 1NC 2NC 1NO & 1NC / 1NO & 1NC 1NO & 1NC / 2NC 2NC / 1NC 2NC / 1NO 1NO & 2NC / 0NO & 0NC 1NO & 2NC / 1NO & 1NC 1NO & 2NC / 2NC	2 NC / 1 NO 2 NC / 2 NO	1NO & 1NC / 1NO & 1NC 1NO & 1NC / 2 NC 2NC / 1NO & 1NC 2NC / 2NC	1NO & 1NC / 1NO & 1NC 1NO & 1NC / 2NC 1NO & 1NC / 2NO 2NC / 1NO & 1NC 2NC / 2NC 2NC / 2NO
<b>Features</b>	Emergency Exit Individual coding	Individual coding	Rotatable head	Individual coding Rotatable head	Emergency Exit
<b>Actuators (order separately)</b>	AZM161-B1 AZM161-B6 (flexible) STS Door handle + other accessories	AZ17/170-B1 AZ17/170-B5 AZM170-B6 (flexible) B25 Door handle	TZ/CO TZ/CW Curved options Flexible options	AZM150-B1 AZM150-B5 AZM150-B6L AZM150-B6R	AZ/AZM415-B1 -B2 (flexible) -B3 (flexible) STS Door handle
<b>Available as</b>					



# DOOR HANDLE ACTUATORS



Series	STS	B30	B25	B4PS
<b>Compatible with</b>	AZ16, AZ3350, AZ415 AZM161, AZM415	AZ201 AZM201	AZ17 AZM170	AZ415 AZM415
<b>Emergency exit handle</b>	Optional	Optional	--	--
<b>Materials</b>	Die cast aluminum	Thermoplastic	Thermoplastic	Metal
<b>Features</b>	Handle options Inside or outside mounting Left or right opening Retracting actuator Lockout device option	Handle options Inside or outside mounting Left or right opening Retracting actuator Lockout device option RFID - individual coding 3 point locking option	Handle options Left or right opening Retracting actuator	Sliding bolt with handle Left or right opening Retracting actuator Ball latch on retraction

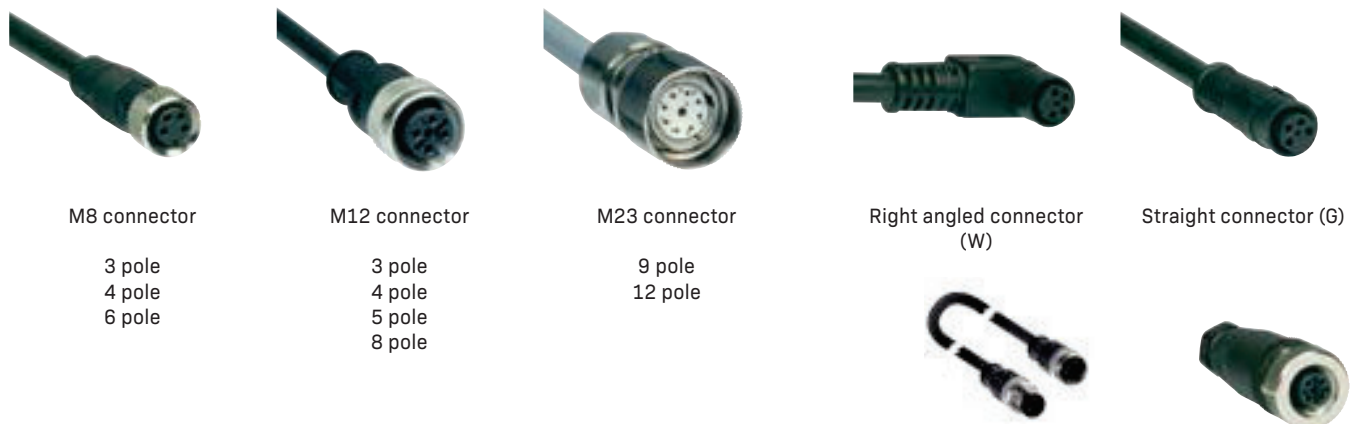
# ACCESSORIES



TFA / TFI	CSA-M-1	PL--M20	Tamperproof screws	Mounting plates	Lock out devices
Guard alignment aid	Magnetic latch	Pilot light kits, M16 or M20	One-way screws	Available for most models, ordered separately	Available for most models, ordered separately

# CONNECTOR CABLES

Compatible cables are available for every ST (Quick Connect) model



M8 connector

- 3 pole
- 4 pole
- 6 pole

M12 connector

- 3 pole
- 4 pole
- 5 pole
- 8 pole

M23 connector

- 9 pole
- 12 pole

Right angled connector (W)



Double ended cable

Straight connector (G)



Connector only (no cable)

Various cable lengths available: 0.5M, 1M, 2M, 5M, 15M, 20M

## CODED MAGNET SENSORS



Series	BNS260	BNS36	BNS40S	BNS16	BNS333	BNS30/300/303	BNS-B20
<b>Housing</b>	Thermoplastic	Thermoplastic	Stainless Steel	Thermoplastic	Thermoplastic	Thermoplastic Metal (BNS30)	Thermoplastic
<b>IP Rating</b>	IP67	IP67	<b>IP69K</b>	<b>IP67, IP69K</b>	IP65	IP67	IP67
<b>Dimensions</b>	1"   1.4"   0.5"	1"   3.5"   0.5"	1"   3.5"   0.5"	2"   3.5"   1.25"	1.7"   4.5"   1.7"	1.18" dia   3.07"	4.7"   4.7"   1.7"
<b>Connections</b>	Quick Connect Prewired cable	Quick Connect Prewired cable	Prewired cable	Screw Terminals Quick Connect	Screw Terminals	Quick Connect Prewired cable	Quick Connect Prewired cable
<b>Contact Options</b>	1 NO & 1 NC 2 NC 1 NO & 2 NC 3 NC	1 NO & 1 NC 2 NC 1 NO & 2 NC 3 NC	1 NO & 2 NC	1 NO & 2 NC	1 NC	30/300: 1 NC 303: 1 NO & 1 NC 2 NC 1 NO & 2 NC 3 NC	1 NO & 1 NC 2 NC 1 NO & 2 NC
<b>Features</b>	Optional LED	Optional LED	Rear side mounting Optional LED	Double actuation option	5 actuation planes	Optional LED	Optional LED
<b>Actuators (order separately)</b>	BPS260-1 BPS260-2	BPS36-1 BPS36-2	BPS40S-1, -C BPS40S-2, -C	BPS16	BPS300, BPS303 BPS303 SS (stainless steel)		BNS-B20-B01 (Door handle)
<b>Available as</b>						(303)	

## HINGED SAFETY SWITCHES



Series	T.C235	T.C236	TV.S335	TESZ	TESF
<b>Type</b>	Limit Switch	Limit Switch	Axle Limit Switch	Hinge replacement	Hinge replacement
<b>Housing</b>	Metal	Thermoplastic	Metal	Thermoplastic	Metal
<b>Max rotation</b>	180°	180°	360°	135°	180°
<b>Opening Angle</b>	4.5° (preset for left, right or swing doors)	4.5° (preset for left, right or swing doors)	2°	4°	3° (Adjustable or preset @ 0° or 180°)
<b>IP Rating</b>	IP67	IP67	IP67	IP65	IP65
<b>Dimensions</b>	1.25"   1.25"   2.5"	1.25"   1.25"   2.5"	1.5"   1.25"   3"	3"   2.4"   1.4"	3.5"   4.5"   0.9"
<b>Connections</b>	Screw Terminals	Screw Terminals	Screw Terminals Quick connector	Screw Terminals	Screw Terminals Quick connector
<b>Contact Options</b>	1 NO & 1 NC 2 NC 1 NC	1 NO & 1 NC 2 NC 1 NC	1 NO & 1 NC 2 NC 1 NO & 2 NC 3 NC	1 NO & 2 NC 3 NC	1 NO & 2 NC 2 NO & 2 NC
<b>Features</b>	Rotatable head 90° steps	Rotatable head 90° steps	Universal joint Rotatable head 90° steps	Additional matching hinge	Additional matching hinge. Inside or surface mounting
<b>Available as</b>					

# SAFETY RATED LIMIT SWITCHES



Series	PS116	PS215	PS216	PS226	PS315	PS316
<b>Housing</b>	Metal head Thermoplastic body	Metal	Thermoplastic	Thermoplastic	Metal	Thermoplastic
<b>IP Rating</b>	IP66, IP67	IP66, IP67	IP66, IP67	IP66, IP67	IP66, IP67	IP66, IP67
<b>Dimensions</b>	1.22"   0.6"   2.24"	1.2"   1.3"   2.6"	1.2"   1.3"   2.6"	2.3"   1.3"   2.2"	1.5"   1.4"   3"	1.5"   1.4"   3"
<b>Connections</b>	M12 Connector Prewired cable	Screw terminals M12 Connector	Screw terminals M12 Connector	Screw terminals M12 Connector	Screw terminals M12 Connector	Screw terminals M12 Connector
<b>Contact Options</b>	1 NO & 1 NC 2 NO & 1 NC 1 NO & 2 NC 2 NC	1 NO, 2 NO 2 NC, 3 NC 1 NO & 1 NC 1 NO & 2 NC 2 NO & 1 NC	1 NO, 2 NO 2 NC, 3 NC 1 NO & 1 NC 1 NO & 2 NC 2 NO & 1 NC	1 NO, 2 NO 2 NC, 3 NC 1 NO & 1 NC 1 NO & 2 NC 2 NO & 1 NC	1 NO, 2 NO 2 NC, 3 NC 1 NO & 1 NC 1 NO & 2 NC 2 NO & 1 NC	1 NO, 2 NO 2 NC, 3 NC 1 NO & 1 NC 1 NO & 2 NC 2 NO & 1 NC
<b>Features</b>	10 Actuation heads Rotatable heads 45° steps	10 Actuation heads Rotatable heads 45° steps	10 Actuation heads Rotatable heads 45° steps	10 Actuation heads Rotatable heads 45° steps	7 Actuation heads Rotatable heads 45° steps	7 Actuation heads Rotatable heads 45° steps

**Actuator types**

for PS116, PS215, PS216, PS226

for PS315, PS316



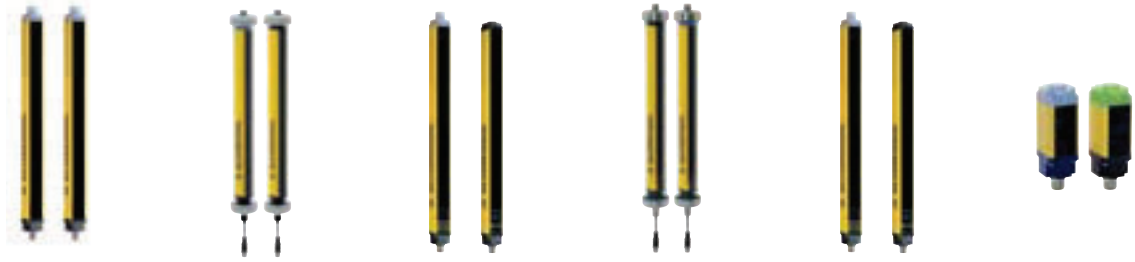
# KEY TRANSFER SYSTEM




Series	SHGV	SHGV/ESS21S2	SVE	SVM
<b>Type</b>	Guard Locking Device	Key Selector Switch	Multi-key Interlock	Key Distribution Station
<b>Housing</b>	Metal	Metal/Thermoplastic	Thermoplastic	Aluminum (box) Stainless Steel (plate)
<b>IP Rating</b>	IP65	IP65	IP65	IP65 (box) / IP40 (plate)
<b>Connection</b>	N/A	Screw Terminals	Screw Terminals	N/A
<b>Contact Options</b>	N/A	1NO & 1NC	Magnet: 1NO & 1NC Selector: 1NO & 1NC 1NO & 2NC	N/A
<b>Features</b>	1 or 2 locking barrels	Additional contacts Colored key grips	1, 2 or 3 selector switches	6 or 10 keys
<b>Available as</b>				



# OPTOELECTRONIC SAFETY DEVICES



Series	SLC440COM	SLC440COM IP69	SLC440	SLC440 IP69	SLC445	SLB440
<b>Profile</b>	1"   1.30"	2" Dia	1"   1.30"	2" Dia	1"   1.30"	1"   1.30"   3.6"
<b>Resolution</b>	14 mm, 30 mm, 35 mm	*	14 mm, 30 mm	*	14 mm, 30 mm	----
<b>Protection heights</b>	330 mm ... 1930 mm	330 mm ... 1770 mm *	170 mm ... 1930 mm	170 mm ... 1770 mm *	170 mm ... 1770 mm	----
<b>Range</b>	0.3 m ... 10 m	*	0.3 m ... 10 m	*	0.3 m ... 10 m	0.3 m ... 15 m
<b>Functions</b>	Start interlock LED end cap  Bluetooth interface for SLC ASSIST App	<b>IP69 housing</b> Plastic Endcaps  Start interlock LED end cap	LED end cap 7 segment display Blanking Contactor control Beam Coding Start interlock Double reset High range (to 20M) Bluetooth interface	<b>IP69 housing</b> Stainless Steel or Plastic Endcaps  LED end cap 7 segment display SLC440 functions	LED end cap 7 segment display Muting Cyclic function Multiscan +SLC440 functions  Complete muting sensor set available	Single beam LED end cap Start Interlock Beam Coding
<b>IP Rating</b>	IP67	<b>IP69</b>	IP67	<b>IP69</b>	IP67	IP67
<b>Type 2 Version</b>	SLC240COM	----	----	----	----	SLB240
<b>Light Grid Version</b>	SLG440COM 2, 3, or 4 beam	SLG440COM IP69 2, 3, or 4 beam	SLG440 2, 3, or 4 beam	SLG440 IP69 2, 3, or 4 beam	SLG445 2, 3, or 4 beam	----
<b>Available as</b>						High range to 75 m Heater for -30°C

\* IP69 versions: The IP69 housing is a separate part number. A SLC/SLG 440 or SLC/SLG 440COM model must be ordered with the IP69 housing at time of order. Factory will only ship fully assembled, sealed units. Resolution, protection height, range, and functions are all subject of SLC/SLG chosen.

For more information, check our Online Product Catalog: [https://products.schmersal.com/en\\_US/](https://products.schmersal.com/en_US/)

## SAFETY LASER SCANNER

NEW

**HOKUYO**



Part Number	UAM-05LP-T301	UAM-05LP-T301C
<b>Dimensions</b>	3.75" x 3.15" x 3.15"	3.75" x 3.15" x 3.15"
<b>Range</b>	270 degree detection angle 5 meter protection zone 20 meter warning zone	270 degree detection angle 5 meter protection zone 20 meter warning zone
<b>Connection</b>	3 meter cable, flying leads	300 mm cable, with connector
<b>IP rating</b>	IP65	IP65
<b>Features</b>	Dual protection zone mode Configuration Software Ethernet communication Master/slave	Dual protection zone mode Configuration Software Ethernet communication Master/slave

## ACCESSORIES

### Extension cables (T301)

UAM-5C10	10 meter cable
UAM-5C20	20 meter cable

### Extension cables (T301C)

UAM-5C02C	2 meter cable
UAM-5C05C	5 meter cable
UAM-5C10C	10 meter cable
UAM-5C20C	20 meter cable

### Mounting brackets

UAM-BK03	Base mounting bracket
UAM-BK04	Rear mounting bracket
UAM-BK05	Cover bracket

### Additional accessories

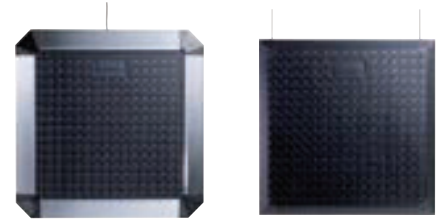
UAM-W002	Replacement lens
UAM-ENET	Ethernet cable, 3 meters

## SAFETY EDGES



Series	SE 40	SE 70
<b>Dimensions</b>	1" wide, 1.5" high	1.18" wide, 2.3" high
<b>Length</b>	SE-P40-1250 = 1,250 mm SE-P40-2500 = 2,500 mm SE-P40-5000 = 5,000 mm SE-P40-10000 = 10,000 mm	SE-P70-1250 = 1,250 mm SE-P70-2500 = 2,500 mm SE-P70-5000 = 5,000 mm SE-P70-10000 = 10,000 mm
<b>Mounting rails</b>	SE-AL10-1250 SE-AL12-1250	SE-AL20-1250 SE-AL22-1250
<b>Additional Components</b>	SE-T.40 end cap	SE-T.70 end cap
	SE-SET sensor set SE-100C Safety Controller SE-304C Safety Controller SE-400C Safety Controller	

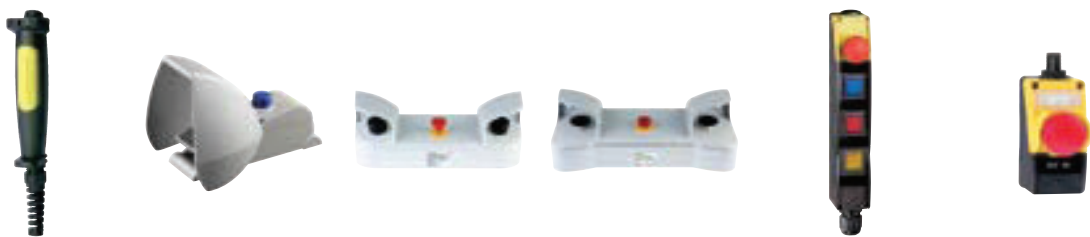
## SAFETY MATS





Series	SMS4	SMS5
<b>Dimensions</b>	250 mm x 500 mm 500 mm x 500 mm 500 mm x 1000 mm 750 mm x 1000 mm 1000 mm x 1000 mm 1000 mm x 1500 mm	250 mm x 500 mm 500 mm x 500 mm 500 mm x 1000 mm 750 mm x 1000 mm 1000 mm x 1000 mm 1000 mm x 1500 mm
<b>Mounting ramp edge</b>	Separate	Integrated
<b>Accessories</b>	Precut trim kits: SMS4-RS-250-500 SMS4-RS-500-500 SMS4-RS-500-1000 SMS4-RS-750-1000 SMS4-RS-1000-1000 SMS4-RS-1000-1500  SRB301HC Safety Controller	----

Custom sizes, colors, and tread patterns are available.

## CONTROL DEVICES WITH SAFETY FUNCTION



Series	ZSD	TFH	SEPK	SEPG	BDF200	BDF100
<b>Type</b>	Enabling Device	Safety Foot Switch	Two Hand Control	Two Hand Control	Control Panel	Control Panel
<b>IP Rating</b>	IP65	IP65	IP65	IP65	IP65	IP65
<b>Features</b>	Off-On-Off switch Optional top button	Off-On-Off switch Hooded housing 2 pedal version Reset button	Plastic housing Custom versions Stands available	Metal housing Custom versions Stands available	Up to 4 controls Plastic housing Wide variety of control elements	Single operator Plastic housing Wide variety of control elements
<b>Available as</b>					 SD	

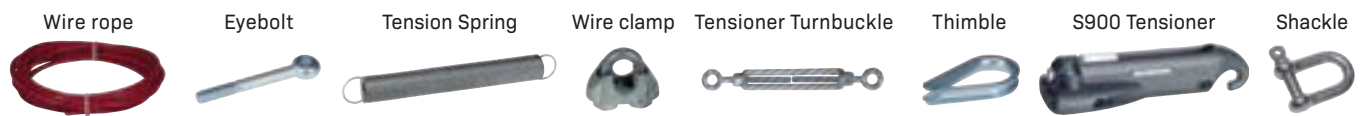
# EMERGENCY CABLE PULL SWITCHES



Series	ZQ700	ZQ900	T3Z068	NEW RS655	NEW RS656
<b>Housing</b>	Thermoplastic	Metal	Metal	Cast Iron	Thermoplastic
<b>IP Rating</b>	IP67	IP65, IP67	IP65	IP66, IP67	IP66, IP67
<b>Dimensions</b>	1.6"   1.6"   6.3"	2.8"   8.6"   3.8"	7.1"   7"   4.5"	7.4"   4.1"   4.7"	7.4"   4.25"   4.7"
<b>Connections</b>	Screw Terminals	Screw Terminals	Screw Terminals	Screw Terminals	Screw Terminals
<b>Contact Options</b>	1 NO & 1 NC 2 NC	1 NO & 1 NC 2 NO & 2 NC 1 NO & 3 NC 2 NC, 4 NC	1 NO & 1 NC 2 NO & 2 NC 3 NO & 3 NC	2 NO & 2 NC	2 NO & 2 NC
<b>Max cable length</b>	10 meters	75 meters	50 meters (both directions)	100 meters (both directions)	100 meters (both directions)
<b>Features</b>	Reset button	Reset button Optional E-stop button	Bi-Directional Pull ring or key reset	Bi-Directional Reset button Optional DuplineSafe	Bi-Directional Reset button Optional DuplineSafe
<b>Available as</b>					

## ACCESSORIES

(complete custom kits or order installation components separately)



# EMERGENCY STOP BUTTONS



Series	EDRRZ40RT	EDPRS40RT	RDRZ45RT	NDRZ50RT	ADRR40RT	E-STOP 201	NAS311ST1-AS
<b>Material</b>	Metal	Metal	Metal	Thermoplastic	Thermoplastic	Thermoplastic	Thermoplastic
<b>IP Rating</b>	IP65	IP65	IP65	<b>IP69K</b>	IP65	IP65	IP65
<b>Type</b>	Button only Separate contacts	Button only Separate contacts	Button only Separate contacts	Button only Separate contacts	Button only Separate contacts	Complete kit with contacts and housing	Complete, M12 connector for AS-I
<b>Reset</b>	Pull	Keyed	Pull	Pull	Pull	Pull	Pull

## ACCESSORIES

### Yellow label:

- NDP-65 Plastic foil sticker, yellow
- NDP-70 V2A plate, yellow
- NDP-70ES V2A plate, yellow, with text "EMERGENCY STOP"
- MDP-8 Metal plate, yellow



### Enclosures

- MBKAC311YE plastic, yellow cover
- MBGAC311YE metal, yellow cover





# SPECIAL APPLICATIONS

## IP69 / IP69K Rated for wash down applications

Schmersal offers an ever increasing range of products designed to be dust tight and withstand the harsh conditions of high pressure (to 1450 psi) and high temperature (to 175deg F) wash downs prevalent in hygienic applications.



Electronic Solenoid Lock  
AZM300

Safety Light Curtain  
SLC440COM  
SLC440

Safety Sensor  
BNS40S  
BNS16  
CSS30S  
RSS36 ST

Joysticks  
RK / NK

### Controls

Pushbuttons  
E-Stop  
Signal lights  
Selector switches  
Step switch  
Potentiometer dial  
Main switch



## EX for explosive applications

Areas with potentially explosive atmospheres due to the presence of gas and dust need special components that will not ignite a fire or explosion. Schmersal offers a diverse range of intrinsically safe components, EX rated for use in Zones 1, 2, 21, and 22.



Keyed Interlock  
EX-AZ16  
EX-AZ415  
EX-AZ3350

Solenoid Interlock  
EX-AZM161  
EX-AZM170  
EX-AZM415

Safety Controllers  
SRB-101EXI  
SRB-200EXI

Safety Sensor  
EX-BN20  
EX-BNS120  
EX-BNS180  
EX-BNS303  
EX-BNS33  
EX-BNS250  
EX-BNS40S  
EX-CSS180

Emergency Cable Pull  
EX-T3Z068  
EX-ZQ900  
EX-RS655

### Limit switches

EX-T/Z235  
EX-T/Z335  
EX-M330  
EX-441 Belt Alignment  
EX-441 Slack Wire

Pushbuttons  
EX-R Series

Trapped key system  
EX-SHGV

Hinged  
EX-TV.S335



EX Products

## AS-I Integrated

AS-Interface Safety at Work is a safety bus system based upon the open standard of AS-International. It is a simple yet flexible solution to quickly, efficiently and cost-effectively integrate a vast safety system. Schmersal offers a wide variety of safety devices with integrated AS-I:



Keyed Interlock  
AZ16 AS  
AZ201 AS

Electronic Solenoid Lock  
MZM100 AS  
AZM201 AS  
AZM300 AS

Solenoid Interlock  
AZM161 AS  
AZM170 AS

Safety Sensor  
BNS260 AS  
BNS36 AS  
BNS16 AS  
RSS260 AS  
RSS36 AS

Safety Light Curtain  
SLC440 AS

Controls  
BDF200 AS  
NAS311 AS (E-Stop)

### Limit Switches

T/Z235 AS  
T/Z236 AS  
T/Z256 AS



AS-I Products

## Safe solutions for your industry

Schmersal presents a series of guides featuring a selection of Schmersal safety products which are suitable to meet the unique challenges in various industries. Check our website or contact your local Schmersal representative for more information on Industry Solutions.



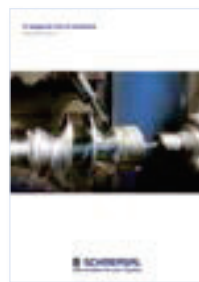
Food & Beverage



Packaging



Wood processing



Machine Tools



Elevators & escalators



Heavy industry

# tec.nicum

## Schmersal Group

Functional machine safety is a complex matter which involves complying with a range of standards and directives. tec.nicum offers all machine manufacturers, operators and distributors a completely product and manufacturer-neutral consultancy on all currently relevant statutory regulations and supports them in ensuring their machines and workplaces are designed to comply with the relevant standards.

Experts at tec.nicum advise and support customers and clients with training, on-site consultation, documentation and planning and implementation, such as the installation of protective equipment and safety systems.

tec.nicum is the Schmersal Group's service division and comprises a global consultancy network of TÜV Rheinland-certified Functional Safety Engineers and Machinery CE Experts. Services can be called upon around the world. tec.nicum's core philosophy is to offer advice that is independent of manufacturers and as objective as possible.

We strive to develop the best possible safety-related solution for each individual application, to implement it and completely safeguard its intended use – always in line with our commitment **“excellence in safety – we care!”**

tec.nicum services cover four areas, which can be obtained as individual modules or as complete packages:

### academy



- Seminars and training
- In-house training
- Customer-specific workshops
- Demonstration events
- Symposia

### consulting



- Safety analysis of machines and production lines
- Conformity assessment and verification
- Risk assessments
- Hazard assessments
- Technical documentation

### engineering



- Technical project planning
- Validation of safety functions
- Measurements and tests
- Modernisation of machines
- Safety controller programming

### integration



- Conversion / Retrofitting
- Installation of protective devices and fences
- Integration of safety functions
- Maintenance and service

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