# Plug-in Series Safety with OSSD Outputs, IO-Link Compatible; PLC & NFC Diagnostics

## The SMART Safety System

offers plug in convenience allowing up to 32 switches to be run in series. The system features redundant cascading OSSD outputs which eliminates the possibility of fault masking (TR24119) and offers superior diagnostics and communication via IO-Link, NFC or PLC.




## Other Output Options



OSSD Safety Relay



PLC USB, NFC Diagnostics, IO-Link

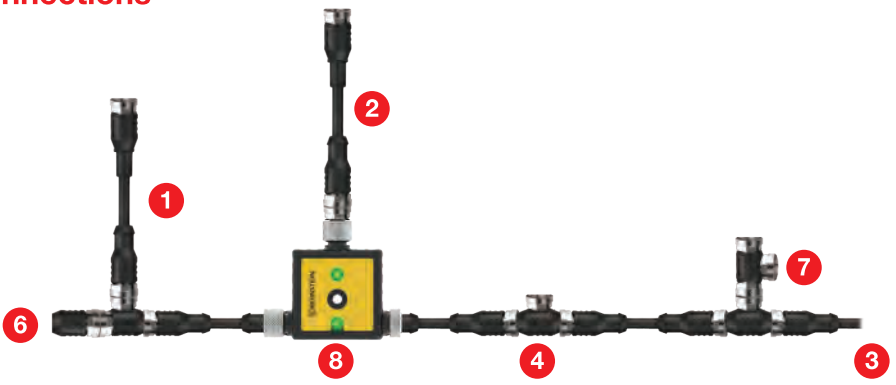



IO-Link with Profibus Bridge

### Features

- Plug and play installation
- M12 basic connectors
- Series installation to 32 switches
- Change/add without programing
- PLe - Cat.4 - Sil Cl 3 safety rating
- Three levels of switch coding
- Prevents "Fault Masking"
- OSSD safety outputs
- Fault tolerant outputs
- Daisy chain diagnostics
- I/O Link & NFC communications

## M12 Cables and Connections




| Position | Part Number | Description | Notes |
|---|---|---|---|
| 1 | 607.5689.085 | S1W-M12A8/8W/BW-1PU | Sensor Extension Cable Male to Female 8 Pin 1M (3.2') |
| 1 | 607.5689.086 | S1W-M12A8/8W/BW-2PU | Sensor Extension Cable Male to Female 8 Pin 2M (3.2') |
| 2 | 607.5689.087 | S1W-M12C4/AW-2PU | Series Line Extension Cable Male to Female 4 Pin 2M (3.2') |
| 2 | 607.5689.088 | S1W-M12C4/AW-5PU | Series Line Extension Cable Male to Female 4 Pin 5M (16.4') |
| 2 | 607.5689.089 | S1W-M12C4/AW-10PU | Series Line Extension Cable Male to Female 4 Pin 10M (16.4') |
| 3 | 607.5689.090 | SFW-M12C4/AW-0.5PU | Controller Connection Cable Female to Open 4 Pin .5M (1.6') |
| 3 | 607.5689.091 | SFW-M12C4/AW-2PU | Controller Connection Cable Female to Open 4 Pin 2M (3.2') |
| 4 | 607.5989.082 | ATS-M12/4-M12/8 | T Adapter at end of sensor |
| 6 | 607.5689.084 | AEP-M12/4 | End of String Terminator |
| - | 607.5689.127 | AT-CLIP-M12 | M12 Mounting Clip for T Adapter |
| 7 | 607.5989.083 | ATD-M12/8-M12/4 | T Adapter for I/O Link Connection, PNP or Reset |
| 8 | 607.5689.190 | SEU-1/0-T456 | Smart T Adapter |

## SRF Non-Contact Switches



**Basic PNP Diagnostics**
**Low Coding**
**Switch (9.8" cable)**
**Part Number - 607.5685.096**
**Description - SRF-4/1/1-E-L**

**Actuator**
**Part Number - 607.5687.078**
**Description - SRF-0**

**Basic PNP Diagnostics**
**Unique Coding**
**Switch (9.8" cable)**
**Part Number - 607.5685.094**
**Description - SRF-4/1/1-E-U**

**Actuator**
**Part Number - 607.5687.078**
**Description - SRF-0**

**Daisy Chain Diagnostics (DCD)**
**Low Coding**
**Switch (9.8" cable)**
**Part Number - 607.5685.102**
**Description - SRF-5/1/1-E-L**

**Actuator**
**Part Number - 607.5687.078**
**Description - SRF-0**

*Other coding/diagnostic options available*

## Safety Switches

### OSSD Connection Box

Converts Dry Contact Switches to OSSD
Plugs in Between Switch and Main Line



Smart "T"
Part Number - 607.5689.190
Description - SEU-1/0-T45-C



Transition Box
Part Number - 607.5689.137
Description - SEU-1/0-M64-C

### Keyed Safety Switch with M12 connector



Part Number – 699.6469.066A
Description – SKT-A2Z-M3-M12

### Keyed Safety Switch with M12 connector



Part Number – 699.6169.036A
Description – SK-A2Z-M-M12

## Solenoid Locking Switch
### with M12 connector



Power for the locking solenoid must be supplied from an external

Normally Locked (Power to Unlock)
Part Number - 699.8200.007A
Description - SLC-F-024-20/20-R4-M12

Normally Unlocked (Power to Lock
Part Number - 699.8200.017A
Description - SLC-M-024-20/20-R4-M12

## Hinged Safety Switch
### with field wire M12



Left Hinged
Part Number - 699.9490.051A
Description - SHS3-U15Z-KA5-L-M12

Right Hinged
Part Number-699.9490.050A
Description - SHS3-U15Z-KA5-R-M12

## Safety Limit Switch
### with M12 connector



Actuators Sold Separately

Safety Limit Switches
Part Number - 699.3000.274A
Description -IN65-A2Z-M20-M12

## Emergency Stop Button
with LED Status Light
Plugs directly into the sensor chain



SEU-2 SEU-3 SEU-4

SEU-2
Part Number - 607.5689.138
Description - SEU-2/0-P80-C

SEU-3
Part Number - 607.5689.177
Description - SEU-3/3/2-P81-C

SEU-4
Part Number - 607.5689.174
Description - SEU-3/3/2-P86-C

## OSSD Safety Relay
Simple safety, without diagnostics
Basic safety relay for monitoring two OSSD inputs, manual or auto restart with 3 N/C Output Contacts



Part Number - 607.5111.020
Description - SCR-ON4-W22-3.6-S

## Safety/Diagnostics Relay
Safety, diagnostics and I/O Link communication in one device



I/O Link, NFC and USB 2.0
Part Number - 607.5113.141
Description - SCR DI-1/01-T

I/O Link with 8 Digital Outputs
Part Number - 607.5113.140
Description - SCR DI-1/8/3-T

## Diagnostic Field Device
Plugs in the main line via T-connector
Converts Diagnostic to IO-Link which is accessed with 8 pole T connector
Direct access with NFC device




Part Number - 607.5689.126
Description – SRF DI-F-0/2-E0.25

## Diagnostics Module
With IO-Link, NCF and USB 2.0
One or Six Diagnostics Circuit



With One Diagnostic Circuit
Part Number - 607.5619.122
Description- SRF DI-C-0/1-T

With Six Diagnostics Circuits
Part Number-607.5619.125
Description-SRF DI6-C-0/1-T

## Diagnostics Module
With IO-Link, NCF and USB 2.0
One Diagnostics Circuit and 8 or 16 Digital Outputs



With 8 Digital Outputs
Part Number - 607.5619.123
Description- SRF DI-C-8/1-T

With 16 Digital Outputs
Part Number - 607.5619.124
Description-SRF DI-C-16/1-T

# Standard Safety Products

## Keyed Safety Switches

### Positive opening position switches for safeguarding machines and systems

Safety switches with separate actuator are positive-opening position switches. Typically used to control two redundant closed safety circuits, when the actuator is pulled out, the positive break contact will always open. These switches are assigned to type 2. Key sold separately.



**SKT Series**

- Slim design
- Short height for confined installation situations
- Rotatable actuating head
- Can be approached from five directions
- Large variety of actuator keys available
- Low coding according to EN ISO 14119



**SKI Series**

- Slim design
- Rotatable actuating head
- Can be approached from five directions
- Generous connection space
- Up to three contacts
- Large variety of actuator keys available
- Low coding according to EN ISO 14119



**SK Series**

- Cable entry from three sides
- Three directions of actuation
- Up to three contacts
- Optional increased pull-out force
- Large variety of actuator keys available
- Low coding according to EN ISO 14119

## Keyed Solenoid Locking Safety Switches

Machines that continue running after being switched off are often part of automated production processes. Safety guards prevent operator access and must therefore be kept closed until the hazards posed by machine movement have ceased. Safety position switches with interlock function ensure that safety gates, safety doors and other protective guards remain closed for as long as a hazardous situation exists.



**SKC Series**

- Lightweight yet robust: Hybrid of metal and plastic with 3 cable entry options
- Normally locked or unlocked functions
- Flexible contact assembly
- Contacts monitor key position and lock function
- Cost effective efficient circuit design
- Integrated manual release
- Five actuating positions
- Fail-safe guard locking system
- Optional emergency release
- Optional escape release
- Large variety of actuator keys available
- M12 connector as an option



**SLK Series**

- Lightweight plastic construction with 3 cable entry options
- Normally locked or unlocked functions
- Spring terminal connection
- Contacts monitor key position and lock function
- 24V AC/DC and 110-230V AC solenoid operating voltage
- Integrated manual release
- Five actuating positions
- Fail-safe guard locking system
- Horizontal or vertical 4x 90° key insertion
- Large variety of actuator keys available
- Optional emergency release

## Safety Switches for Hinged Applications

This switch mounts on the top of the machine and is connected to the door with a pin that goes through the actuator slot. The movement of the door changes the angle of the actuator, activating the switch. This switch mounts on the top of the machine and is attached to a rod that extends to the pin of the door hinge. When the door is opened the pin is rotated causing the switch to activate.



**IN62 - VKW/VKS**

- Standard switch conforming to DIN EN 50047
- Highest reliability at low currents (1 mA)
- Protection class IP67



**IN62 - AHDB**

- Standard switch conforming to DIN EN 50047
- Highest reliability at low currents (1 mA)
- Protection class IP67

## Hinges with Built-in Safety Switches

These switches replace the standard door hinge with an active hinge with built-in safety switch. Easy to install since the switch mechanism is safety integrated into the hinge without a separate actuator key, eliminating alignment and wear issues and providing a tamper proof installation. Saves labor since it eliminates the need to install a standard hinge. The available rear cable exits allow connection wire to be hidden.



**SHS3 Series**

- 2 positive opening safety contacts with one normally-open signaling contact
- Adjustable switch point with 270° range and 1.5° fine adjustment can be reset if needed
- Left & right side mounting with bottom or rear cable or connector exit; blank hinges available



**SHS Series**

- 1 NC or 1 change over contact
- Very rugged full metal zinc pressure die-cast construction
- Adjustable switch point with 0° to 225° range
- Bottom or rear cable or connector exits
- Up to 1000N radial and 750N axial load bearing
- IP67 with blank hinges available

# Rope Pull Switches

## Safety Rope Pull Switches

Special switches activate when safety rope is pulled, latching with emergency stop and/or reset function, quick safety rope attachment and tension monitoring provide a very safe installation.



### SRM Metal Body

- Rugged aluminum die-cast housing
- Rope tension status display allows fast and correct setting and inspection
- Integrated emergency stop and or reset button
- Suitable for outside use (-30°C to +80°C)
- Quick-Fix rope connection head
- 3 Cable entry port options
- Optional slack cable warning
- Large connection area



### SR Plastic Body

- Durable glass fiber reinforced housing (PA6 GV)
- Rope tension status display allows fast and correct setting and inspection
- Integrated emergency stop and or reset button
- -25°C to +75°C temperature range
- Quick-Fixrope connection head
- 3 Cable entry port options
- Large connection area

## Safety Rope Pull Switches

Rope pull switch for automation and safety application is available in momentary or latching, metal or plastic, straight or 90° degree versions.



### SRO Metal & Plastic Switch Body

- All metal or as combination with plastic
- IEC Compact design for confined spaces
- Suitable for safety or control applications
- Emergency/ reset stop button upon request
- Max. rope length of 30 m
- Up to 4 contacts



### Standard Rope Pull Switches

- With metal or plastic switch bodies
- For switching control and activation signals
- IEC standard body size
- Momentary or latching with reset
- Tension monitoring versions available
- 1NC/1NO contacts



### Larger Rope Pull Switches

- With rugged metal switch bodies
- For switching control and activation signals
- Momentary or latching with reset
- 1NC/1NO contacts
- Up to 12M rope length



### Double Sided Rope Switches

- Mounts in the middle of the cable run
- Ideally suited for long cable runs
- Separate contacts activate in each direction
- Latching style with lanyard ring reset
- Remote reset possible using a pull cable

## Basic Accessories

