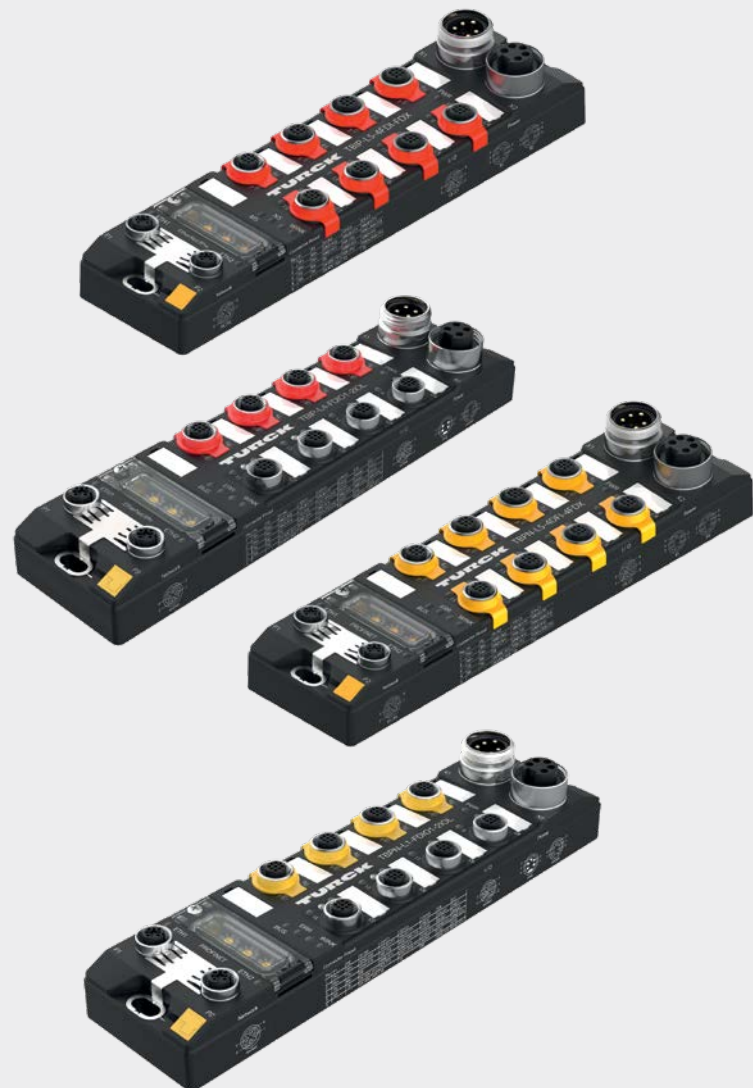
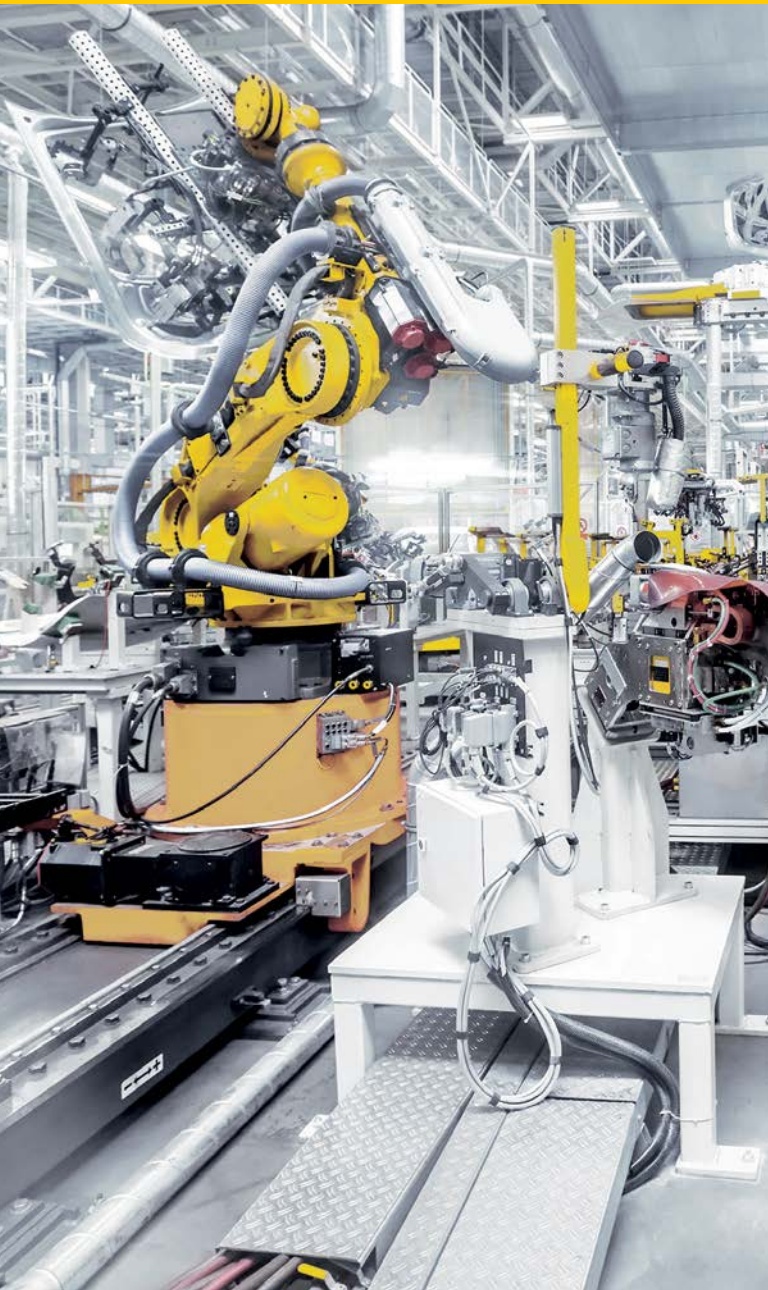


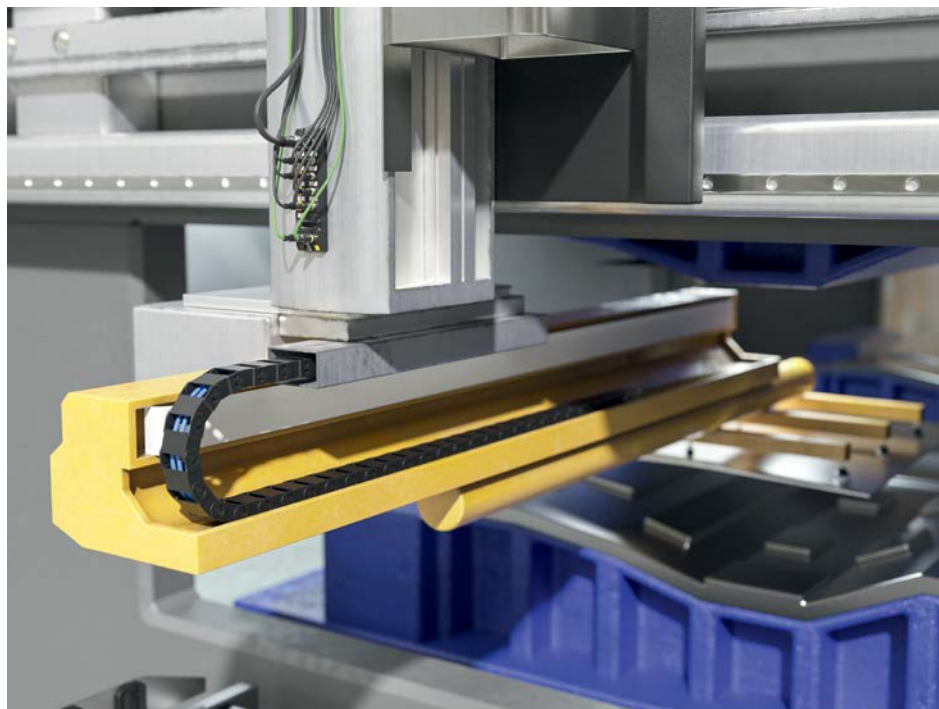
Your Global Automation Partner

TURCK

Multifunctional Safety Block Modules in IP67



Multifunctional Safety Block Modules in IP67



Application example: Turck's safety module in a handling system

Modularity, flexibility, safety

Modern machines are required to do more and more in today's world. They need to be flexible so that a customer order can be changed as quickly as possible. But, above all, they have to be cost-efficient and digitally future-proof with a high degree of diagnostic capability. Functional safety must also be an integral part of the mechanical engineering. With these specifications in mind, Turck has developed a solution for small, modular machines and plants, which can be used in many areas of application: two modules for two automation worlds.

These block I/Os are equipped with communication capabilities for Profinet and EtherNet/IP, meaning they can be used universally. Extremely robust and future-proof thanks to IO-Link technology — the safety modules offer a wide variety of options for your convenience

Sensors for pressure measurement, end position detection and the safe control of actuators can be integrated directly in these modules. If you are already using secure communication, you can also use the modules with ProfiSafe via Profinet or CIP Safety via EtherNet/IP.

Safety modules at a glance

- Local safety logic in IP67 to SIL3, PLe. For integration into your standard Profinet or EtherNet/IP control system.

Your benefits

- Highly efficient since additional safety control is not required
- Simple, secure stand-alone logic configuration with optional integration in standard automation such as that in muting applications

- Distributed standard I/Os with 2 IO-Link master interfaces for up to 36 standard I/Os or IO-Link devices.

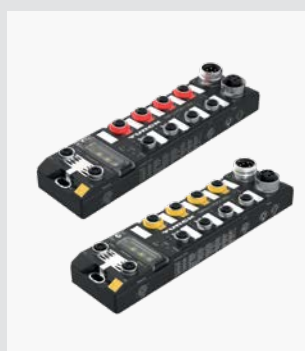
Your benefits

- Functional safety and standard I/Os in one module — logically separated, therefore doubly secure
- Maximum cost efficiency of standard I/Os achieved by future-proof digital IO-Link hubs — local star architecture possible per machine part
- Maximum number of possibilities to integrate sensors and actuators via the IO-Link master interface

- Integrated fieldbus I/Os in standard and safety environments with Profinet or EtherNet/IP.

Your benefits

- Standard I/Os and safety I/Os in a robust module in IP67
- Highest level of diagnostic capability via IO-Link interfaces
- Efficiency in the machine by reducing the number of modules



Hybrid safety modules

Whether it's Profinet or EtherNet/IP, Turck has the right connection for each and every case. The two hybrid safety modules communicate either "safely" with their control system or only as "standard" and work safely at a local level, meaning the modules are always optimally adapted to your architecture.



Full-safety modules

Full-safety block I/Os have four ports in the field, each with two safe inputs (FDI) and four universal inputs or outputs (FDX). In particular, the flexibility of the FDX ports enables the individual safety signal requirements of each application to be optimally mapped.

Turck Safety Configurator

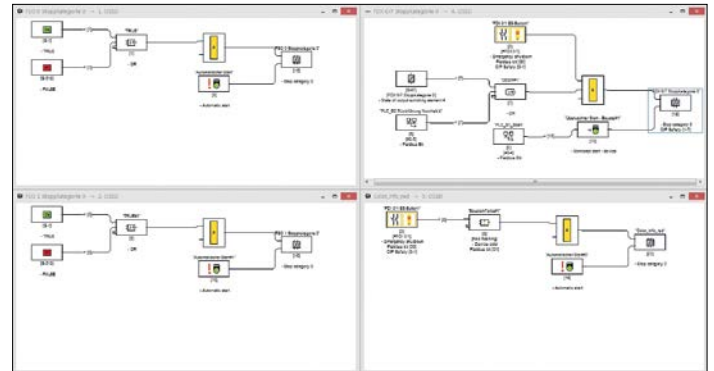
The Turck Safety Configurator (TSC) allows you to easily configure Turck's safety I/O modules via a PC. The TSC also supports you with the commissioning and documentation of your safety-related application. The greatest benefit and full functionality of the modules are achieved in small applications with a maximum of three safety functions and a safety-related output. This information is optimally implemented in the module with a secure controller. The emergency stop, protective door and light grid as well as enabling functions can therefore be mapped ideally in the module. Data exchange between the PLC and the secure modules is readily possible. Of course, when this exchange is later integrated into interlinked machines, the safety application can be completely taken over by a higher-level safety machine control system. However, the decentralized safety logic allows you to fully eliminate the processing and bus runtimes of a safety-related control system. Pre-processing in the module takes a maximum of 55 milliseconds.

■ Basic configuration

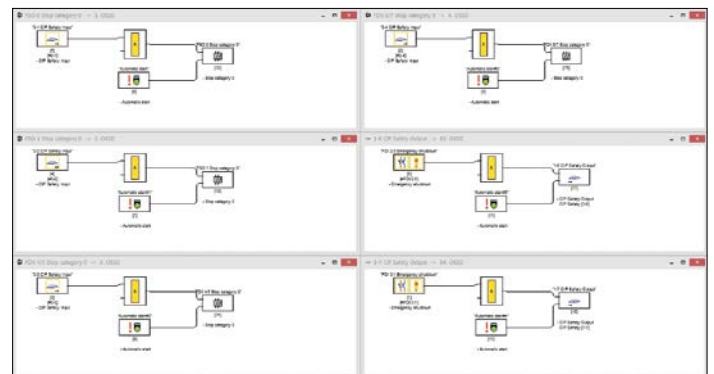
Turck creates a basic configuration for you in the module, depending on your local I/O assignment. You simply set the local inputs and outputs and assign the name and address, then the software does the rest.

■ In-series diagnostic

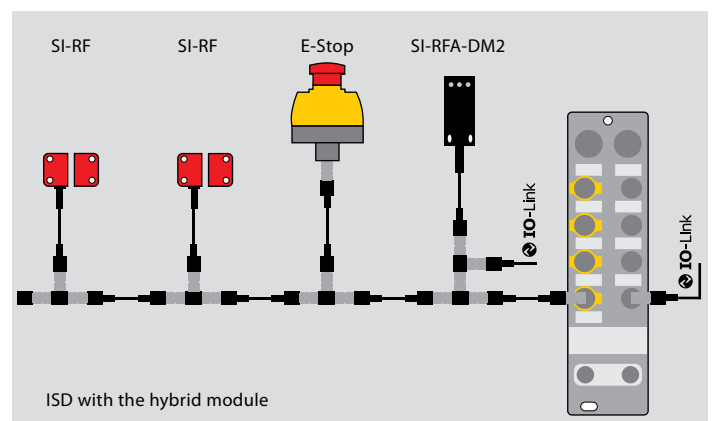
In-series diagnostic (ISD) is a way of using the IO-Link protocol to accurately locate up to 32 secure sensors connected in a series. Both standard and special sensors with ISD protocol can be connected. When a safety event occurs, the input of the module is switched off and the IO-Link master receives the address of the actuated participant via a special evaluation module, including additional information as required. The configuration is always stored in a replaceable memory module. When it needs to be replaced, this memory module can be easily inserted into the new module.



Application in the TSC

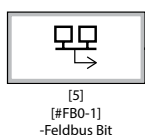


Basic configuration



ISD with the hybrid module

"0-1 Fieldbus Bit"



"Fieldbus bit"

The "fieldbus bit" function is used to establish a non-secure connection between a higher-level PLC and the module. Depending on the module, up to 16 input and output bits can be used for communication.



Fast module replacement

Each configuration for the application of a module is also stored in a memory module, which can be replaced like a USB stick. If a module needs to be replaced, the application can be transferred from the memory stick to the new safety module without the need for a PC.

Optimal use in stand-alone safety applications

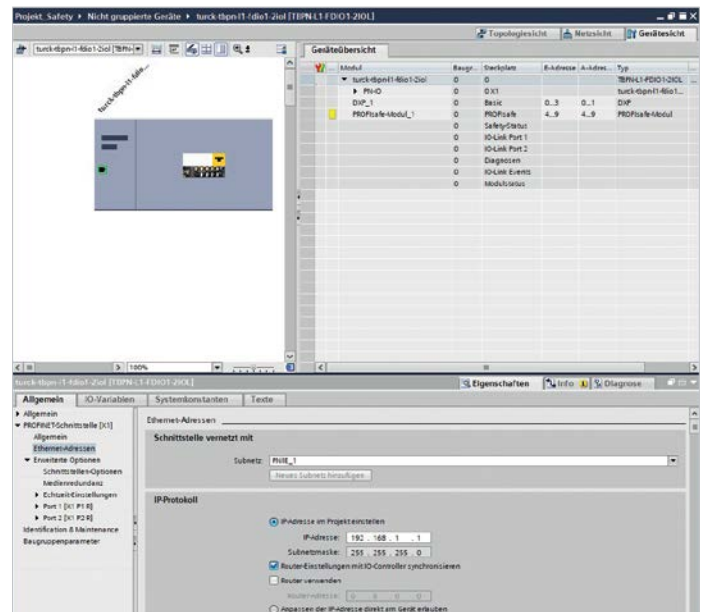
With the new Turck Safety Configurator software, hybrid and full-safety modules can be optimally used in independent safety applications without external safety control systems. Even though it has undergone numerous improvements, the new software is fully compatible with the older version.

Independent team players

With the logic on board, devices can operate in a failsafe manner even before they are connected to a failsafe control system. If a safety controller is then connected to the modules, this can take over the protective function. The program in the module continues to run in the background until communication with the failsafe control system is interrupted. The protective function is therefore maintained at all times. This decentralized-centralized switching control is only possible with our safe modules.

Simple handling with SIDI and optimized GSDML files

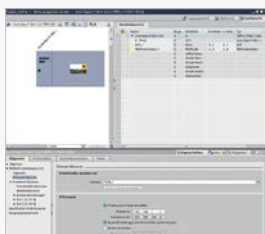
Turck's Simple IO-Link Device Integration, SIDI for short, makes it easier to handle IO-Link devices in Profinet engineering systems. Since the devices are already integrated in the GSDML file of the master, users can select the devices from the device library (for example in the TIA portal) and integrate them into their project using drop-down fields, as if the devices were submodules on a modular I/O system. The configuration files for hardware integration in customer-specific applications have been adapted for all Profinet modules. Turck is the only manufacturer that can always offer the appropriate GSDML for Profinet IO devices, whether for safety and non-safety F-control systems, the TIA portal or old F-control systems configured with the S7 Manager. Compatibility with other manufacturers' IO-Link devices has also been optimized.



The parameters of the IO-Link devices can be set directly from the engineering system



While full-safety modules are equipped with eight safety-related ports, hybrid modules have four safety ports and four standard ports



Simple IO-Link device integration

All Turck IO-Link masters enable the integration of IO-Link devices directly from the Profinet engineering by means of SIDI (Simple IO-Link Device Integration) without additional software or programming. Users can access clear text for all device properties and parameters.



Simple logic configuration

The Turck Safety Configurator allows you to set up your safety application directly in the module; an external safety controller is not necessarily required.

Turck Safety Solutions – Types and Features

Type designation	Ident-No.	Description
Enabling switch		
ED1G-L20MB-1N	3012937	Enabling switch with three-stage start/stop switch for machines Two outputs, NO contact, two outputs, NO contact via additional button
Position switch		
SI-LS83E	3049482	Safety switch, position switch with separate actuator without locking, additional actuator required, two safety outputs, NC contact, 83-mm housing type, plastic
SI-LS100SF	3049480	Two safety outputs, NC contact, one auxiliary contact, NO contact, 100-mm housing type, plastic
SI-LS42DSH	3047875	Safety switch, position switch with separate actuator with locking, additional actuator required, two safety outputs, NC contact, 42-mm housing type, metal
SI-QM100DSH	3077751	Two safety outputs, NC contact, 100-mm housing type, metal
Other position switch variants available		
SI-QM-SSA	3048555	Actuator, for position switches with locking (SI-LS42/SI-QM100), rigid version, straight
SI-QM-SMFA	3048562	Flexible version for revolving door
Door hinge switch		
SI-HGZ63FQDR	3025583	Safety switch, door hinge switch, for monitoring a safety guard, two safety outputs, NC contact, one auxiliary output, right-hand hinge NO contact, straight version*, die-cast zinc**
SI-HGZ63FQDRR	3025584	Two safety outputs, NC contact, one auxiliary output, right-hand hinge NO contact, angled version*, die-cast zinc**
Solenoid switch		
SI-MAGB1SMQD	3807124	Safety switch, solenoid switch, long design 88 × 25 mm, one safety output, NC contact, one auxiliary output, NO contact, M8 4-pin connector
SI-MAGB1MM	3807144	Coded magnet, for solenoid switch SI-MAGB1SMQD, switching distance 4...14 mm
RFID safety switch		
SI-RFPT-LP5	3806407	RFID safety switch, M12 plug, 5-pin, A-coded, non-cascadable
SI-RFDT-LP8	3806398	RFID safety switch with ISD function, M12 plug, 8-pin, A-coded, cascadable
SI-RF-A	3806408	Actuator, for operating switches SI-RFDT-LP8 and SI-RFPT-LP5
SI-RFA-TS	3806409	T-splitter for connecting ISD
SI-RFA-P	3806411	Terminating resistor for connecting ISD
SI-RFA-DM2	3806413	IP67 evaluation unit from ISD to IO-Link
Draw-wire switch		
RP-RM83F-75LT*	3081876	Draw-wire switch with integrated emergency stop button, display of cable tension, maximum cable length: 75 m, requires accessories kit for draw-wire switches, two safety outputs, NC contact, two auxiliary contacts, NO contact, 83-mm housing type, metal
RPAK-CHP2-40-TA*	3084443	Accessories kit for draw-wire switches, the kit consisting of: 1 × 40 m cable, 3 mm thickness, 4 × thimble, 4 × clamps, 11 × ring screws, 11 × pulley, 1 × clamp screw
Secure switch-off boxes		
TBSB-L4-CS09	100003273	Switch box for disconnecting the actuator voltage V2 max. 9 A, 2-channel disconnection of V2, depending on configuration up to 16 A, separate control input for disconnecting control output for use in the feedback circuit
TBSB-L5-CS09	100002112	
TBSB-LL-CS16	100003275	Switch box for disconnecting the actuator voltage V2 max. 16 A
TBSB-I1-CS04	100012761	Switch box for safely converting OSSD to contact, 2-channel disconnection up to 4 A, control input for disconnecting M12 female connector, control output for use in the feedback circuit via M12 plug
Proximity switch		
BI4-M12-2APS8X2-H1141	100016606	Inductive safety sensor M12 × 1 PLd four-wire, 2 × OSSD, NO contact, PNP
BI8-M18-2APS8X2-H1141	100016607	
BI12-M30-2APS8X2-H1141	100016608	
Mechanical safety switches		
RP-RM83F-75LT-810383	3810383	Draw-wire switch
SI-HGZ63FQDR-810383	3810382	Hinged switch
SI-HGZ63FQDL-810381	3810381	
SI-LS100F-810379	3810379	Non-locking

Type designation	Ident-No.	Description	
Safety module			
TBPN-L1-FDIO1-2IOL	6814053	Profinet/Profisafe hybrid module, 5-pin power supply 2 × 2-channel safety inputs; 2 × safety-related configurable two-channel inputs or PP/PM switching outputs, 4 × DXP ports, power supply can be safely switched off, 1 × IO-Link master with power supply that can be safely switched off, 1 × additional IO-Link master without switch-off ability	
TBIP-L4-FDIO-2IOL	100000360	EtherNet/IP/CIP Safety hybrid module, 4-pin power supply	
TBIP-L5-FDIO1-2IOL	6814056	EtherNet/IP/CIP Safety hybrid module, 5-pin power supply	
TBPN-L5-4FDI-4FDX	100001826	Profinet/Profisafe safety module, 5-pin power supply 4 × 2-channel safety inputs; 4 × safety-related configurable 2-channel inputs or PP/PM switching outputs	
TBIP-L4-4FDI-4FDX	100001827	EtherNet/IP/CIP Safety safety module, 4-pin power supply	
TBIP-L5-4FDI-4FDX	100001828	EtherNet/IP/CIP Safety safety module, 5-pin power supply	
Software			
TSC	6814048	Turck Safety Configurator software for configuration and safe logic programming of the modules	
Light screens, emitter			
SLE14-280-S	3808915	14-mm resolution*, 280-mm scan field**	
SLE14-1820-S	3809179	14-mm resolution*, 1820-mm scan field**	
Light screens, receiver			
SLLR14-280-S	3808916	14-mm resolution*, 280-mm scan field**, 2 × OSSD outputs, NC contact	
SLLR14-1820-S	3809180	14-mm resolution*, 1820-mm scan field**, 2 × OSSD outputs, NC contact	
Accessories for emitters and receivers			
EZLSA-MBK-20	3093176	Mounting bracket, universal mounting (two pieces included in delivery)	
RKC4.4T-0.3-RSC4.4T/TEL	6625205	Connection cable, 4-pin, M12 plug, length: 0.3 m***	
RKC4.4T-2-RSC4.4T/TEL	6625208	Connection cable, 4-pin, M12 plug, length: 2 m***	
*models with 23- and 40-mm resolution available **scan fields of 280...1820 mm, available in 23 lengths ***extension cables for direct connection, available in different versions			
Illuminated emergency stop button			
SSA-EB1PLYR-12ECQ8	3025304	Illuminated emergency stop button 2 × safety outputs, NC contact, 1 × auxiliary output, NO contact, M12 × 1 connector, 8-pin	Circular
SSA-EB1PLYR-02ECQ5B	3026267	Non-actuated: steady yellow Actuated: flashing red Externally interrupted: steady red 2 × safety outputs, NC contact, M12 × 1 connector, 5-pin	
SSA-EB1PLYR-12ED1Q8	3029989	Illuminated emergency stop button 2 × safety outputs, NC contact, 1 × auxiliary output, NO contact, M12 × 1 connector, 8-pin	Square
SSA-EB1PLYR-02ED1Q5B	3030028	Non-actuated: steady yellow Actuated: flashing red Externally interrupted: steady red 2 × safety outputs, NC contact, M12 × 1 connector, 5-pin	
Two-hand module with SB button and OSSD output			
STBVP6BQ5	3064181	DUO-TOUCH two-hand control system, two outputs, NC contact	

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60 representatives worldwide!

