SAFEMASTER STS
Safety Switch- And Key Interlock System
Switch Modules STS-SX and STS-SV

Translation of the german original

0258033

Switch module SX

Switch module SV

STS-System Benefits
- EU-Test certificate according to the directive 2006/42/EG, annex IX
- For safety applications up to PLe/Category 4 according to EN/ISO 13849-1
- Modular and expandable system
- Rugged stainless steel design
- Wireless mechanical safeguarding
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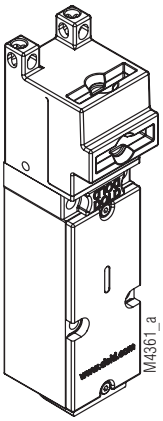
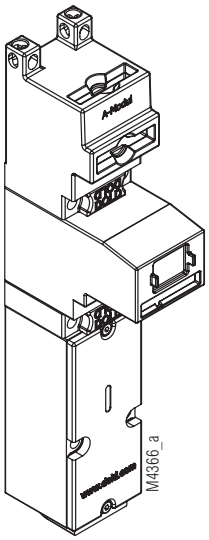
- Combines the benefits of safety switch, locking module and key transfer in a single system
- Easy installation through comprehensive accessories
- Protection against lock-in
- Coding level low, medium, high according to DIN EN ISO 14119:2014-03

Features
- Switch module for monitoring actuator and key position
- Module expansions possible only above the module
- With integrated LEDs for status indication
- Optional / redundant / diverse switch-off possible

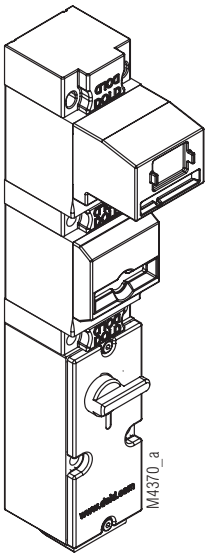
Installation Examples



SXA



SX01A



SVB01M

Approvals an Marking

CE | TÜVRheinland CERTIFIED | Functional Safety Type Approved | www.tuv.com ID 0600000000 | TÜVRheinland C US

Application

Switch modules SX and SV are assembled together with other modules into a STS unit. They are used to secure separating guards by switching off hazardous movements. It must be ensured here that when the switch is being actuated the hazard will be stopped and/or the entries will be unlocked.

Function

Switch modules SX and SV are extremely rugged and flexible switch modules monitoring the safe position of one or several entries, e.g. protective hood or door, in the system. For this purpose the modules are used in connection with other mechanical STS modules, e.g. actuator modules B and D, key modules 01, R1 and 01S and/or padlock module V. The key and padlock modules can be installed either above or below the actuator module used.

The switch module can also be used to only release keys in a key interlock system without an actuator module. This function is applied in key interlock systems with central shut-off or where the shut-off must take place outside the system, for instance in Ex zones, with strong vibration or dirt build-up, etc.

Optionally, 1-channel redundant or diverse shut-off is possible.

Switch module SV with manual locking module function
The switch module SV with 3-level locking module function has the same design as the SX, but is equipped with additional manual lock. It has been built in such a way that the actuator or key engages after the introduction and is mechanically blocked. Mechanical blocking is unlocked again by manual release and the actuator or key is released.

Switch module SV is especially suitable for applications with strong vibration and tensile strain from actuator or key.

The manual locking of switch module SV prevents the unintentional ejection of actuator or key. The actuator / key is released only after manual unlocking.

Attention!

The use of the switch module SV may cause persons to be locked in case of full body access. Additional measures against lock-in are necessary.

All technical data in this list relate to the state at the moment of edition. We reserve the right for technical improvements and changes at any time.

Circuit Diagrams (example SXB01M)

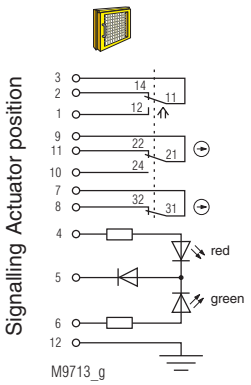


Fig. 1:
Locked while activated:
Actuator and key inserted,
door closed

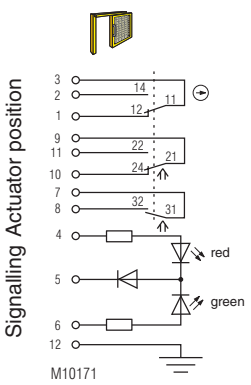


Fig. 2:
Lock deactivated:
Actuator removed
Door open

Switching logic

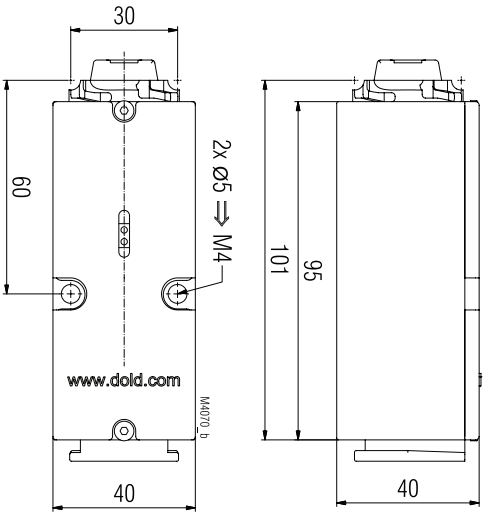
			Fig. 1	Fig. 2
Actuator contacts	3	2	■	
	3	1		■
	9	11	■	
	9	10		■
	7	8	■	

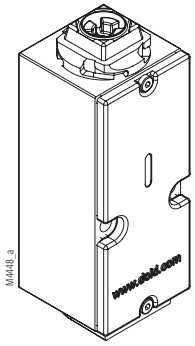
■ closed
□ open

Technical Data

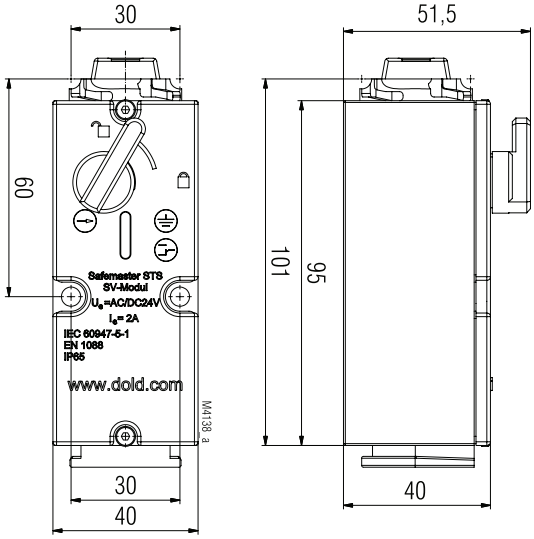
Enclosure:	Stainless steel V4A / AISI 316L
Degree of protection:	IP 65
Temperature range:	- 25 °C to + 65 °C
Storage temperature:	- 40 °C to + 80 °C
Mechanical principle:	Rotating axis with redundant actuation
Connection method:	Cage tension spring clamping
min. connection cross-section:	0.25 mm²
max. connection cross-section:	1.5 mm²
Cable entry:	1 x M20 x 1.5
$B10_d$:	2 x 10^6 switching cycles
Electrical service life:	5 x 10^6 switching cycles
min. operating speed:	100 mm/s
max. operating speed:	500 mm/s
max. switching frequency:	360/h
Power supply	„class 2“ in accordance to UL508 table 32
Nominal voltage U_N:	AC/DC 24 V
Nominal voltage range:	0.85 ... 1.1 U_N
Power consumption:	0.3 W
Rated impulse voltage:	0.8 kV
Rated insulation voltage:	< 60 V
Contacts:	1 NC contact, 2 diverse changeovers contacts
Switching principle:	Changeover contact with forced-opening snap-action switches
max. operating current:	2 A
Utilization category of switching elements	
to AC 15:	1 A
to DC 13:	0.5 A
Short circuit strength, max. fusing:	2 A gG
Contact material:	Ag / $AgSnO_2$
Indicator:	LED red/green (separate selection possible)
Test principles:	EN ISO 13849-1:2008 DIN EN ISO 14119:2014-03 EN 60947-5-1:2005 GS-ET-15:02.2011 GS-ET-19:02-2011 GS-ET-31:02-2010
Intended use:	up to max. cat. 4, PL e according to EN ISO 13849-1
Installation:	according to DIN EN 50041
Contact elements:	IEC EN 60947-5-1 Appendix K
Diagnostic Coverage (DC):	see data sheets of STS basic units and STS design guide
Protection against faults joint cause:	see table in STS design guide
Repair and replacement:	by manufacturer only
Test intervals:	semi-annually recommended min. once a year

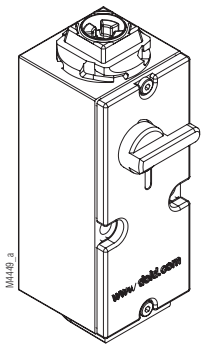
Dimensional Drawings [mm]





Switch module SX





Switch module SV

Variants and Accessories

Switch module RX and RV
For applications where key modules 10 or 10S or an actuator module K or E shall be installed above the switch module, the RX and RV variants are available. For more information refer to the data sheet of switch modules RX and RV and also to the data sheet of actuator modules K and E.

Ordering Designation

Switch module SX
Article number: 0060797

Switch module SV
Article number: 0062959

Switch module SV cover
Article number: 0062991