

Presentation in the deactivated condition:
Key and actuator removed

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
- Combines the benefits of safety switch, solenoid locking 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

The unit is particularly suitable for applications with:

- Full body access (lock-in danger)
- Several secured entries
- Single-channel/ redundant/ diverse safety circuits
- Rugged ambient conditions

Approvals and Markings



Function

Safety switch (type 2) for separating guards with mechanical solenoid locking and forced key removal

Applications

To secure separating guards such as safety gates and hoods in machine and plant engineering.

Design and Function

Attention!



Hazards must be ruled out before a key can be removed and the movable part of the guard can then be opened!

The switch unit is to be integrated into a system and connected with a control unit so that the hazardous machine can run only when the guard is locked and closed.

The gate can be opened at any time, whereby hazards must be ruled out immediately.

The actuator can only be removed from actuator module A and the access opened after removing the key from key module 01. Key operation is thus forced and queried through the contacts of key monitoring.

Key entry is blocked when the door is opened and an escape route is thus secured. The key can be entered again after the access was closed again. By entering the key the solenoid locking is activated again and the machine can be restarted.

SX01A is usually used in the system in connection with additional STS units and SAFEMASTER products (e.g. Emergency stop module LG 5925, Softstarter with DC-Brake BL 9228). The forced key to be removed can serve as protection against lock-in or for the operating release of these units (e.g. M10A, M11A, M12M, M10B01M).

Circuit Diagrams

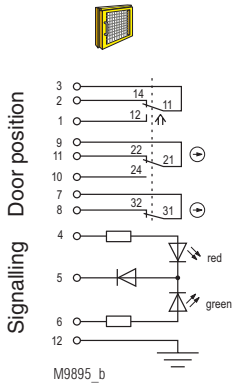


Fig. 1:
Locked while activated:
Key and actuator inserted,
Door closed

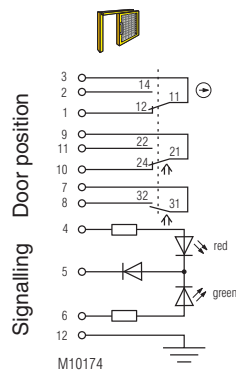


Fig. 2:
Lock deactivated:
Key removed
Door open

Switching logic

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

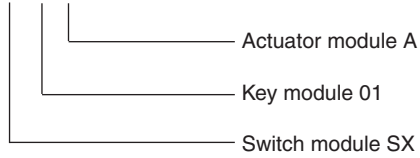
■ closed
□ open

Technical Data

Enclosure:	Stainless steel V4A / AISI 316L / AISI 630
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 mm ²
max. connection cross-section:	0.75 mm ²
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
Locking force:	min. 4000 N
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 (at 23 °C ambient temperature)
Power consumption:	0.3 W
Rated impulse voltage:	0.8 kV
Rated insulation voltage:	≤ 50 V
Contacts:	1 NC contact, 2 antivalent changeovers contacts
Switching principle:	Changeover contact with forced-opening snap-action switch
max. operating current:	2 A
Short circuit strength, max. fusing:	2 A gG
Utilization category of switching elements to AC 15:	1 A
to DC 13:	0.5 A
Rated conditional short circuit current:	1000 A
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
Mounting:	according to DIN EN 50041
Contact elements:	IEC EN 60947-5-1 Appendix K
Additional requirement for cat. 4 structure (as single unit):	Add 2 nd actuator module, Type SX01BA
Diagnostic coverage (DC), (mechanical):	
Logic and output	cat. 2 cat. 3 cat. 4
SX01A:	90 % 90 %
SX01BA:	90 % 90 % 99 %
SV01A:	60 % 90 %
SV01BA:	90 % 90 % 99 %
Protection against faults of common cause:	see table in STS design guide by manufacturer only
Repair and replacement:	
Test intervals:	
for PL a to d:	min. once a year
for PL e:	min. once a month

Ordering Example

STS- SX 01 A



Variants and Combination Options

Because of their modular design the basic units of the SAFEMASTER STS System can be combined and expanded according to customer requests. This allows for a variety of possible units and functions.

Overview of the basic units

Functions	Safety switches design type 2	Safety switches design type 2 with solenoid lock	Mechanical units design type 2	Mechanical units with electrical monitoring	Mechanical units with electrical release
Units with standard function	SXA	ZRHA	M10A	RX10A RXK01M	YRXKM YRXK01M
Units with mechanical lock and forced key extraction	SX01A	ZRH01A	M11A	RX11A RXK11M	YRX10A YRX11A
Units with optional key extraction	SXB01M	ZRHB01M	M10B01M	RX10B01M RX10K01M	YRX10B01M
Units without actuator	SX01M	ZRH01M	M12M	RX11M	YRX11M

For additional information refer to the data sheets of the individual modules and other basic units.

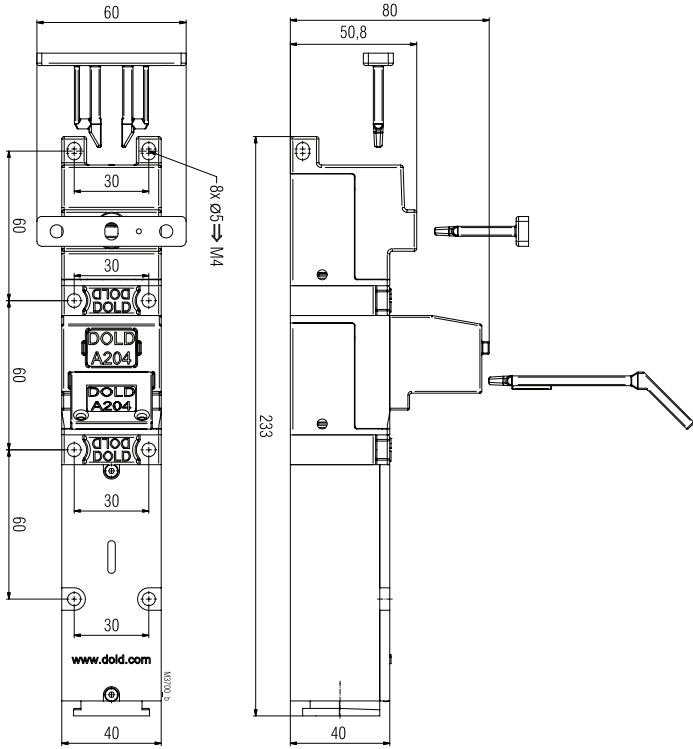
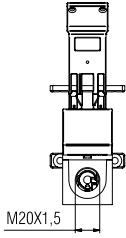
Data sheets

Solenoid locking modules SX/SV
Key module 01/10
Actuator module A

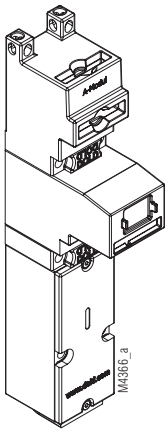


Take advantage of the advice of the **E. DOLD & SÖHNE KG** specialists regarding the choice of units and combination of a system.

Dimensional Drawings [mm]



SX01A
Clearance tolerances $\pm 2\%$



SX01A