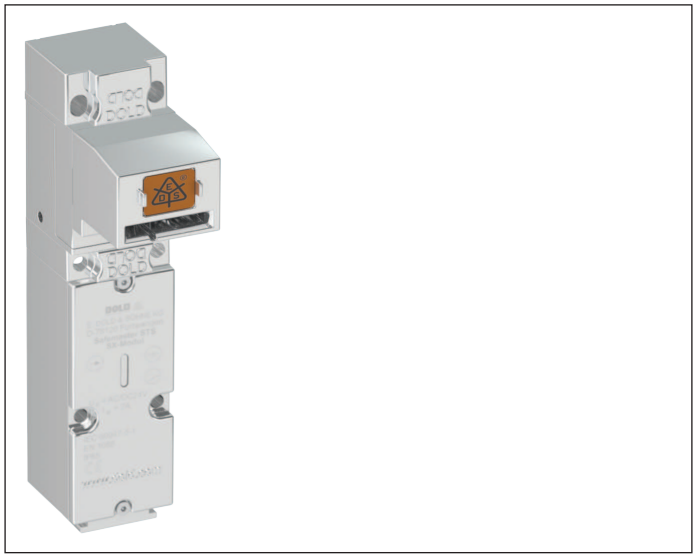
SAFEMASTER STS
Safety Switch- And Key Interlock System
Basic Unit SX01M

Translation of the german original

0258044



Presentation in the deactivated condition:
Key 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:
- Several mechanically secured entries
- Single-channel/ redundant/ diverse safety circuits
- Rugged ambient conditions

Approvals and marking

Function

Safety switch with forced key removal.

Application

Preferred use in machinery and plant engineering to secure separating guards such as safety gates and hoods in connection with additional STS units and SAFEMASTER products in the system.

Design and Operation

Attention!

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

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

The machine can only be restarted after the key was returned to its original position. Key removal is queried by the contacts of key monitoring.

SX01M 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 key to be removed can serve as protection against lock-in or for the operating release of additional units (e.g. M10A, M11A, M12M, M10B01M).

Circuit Diagrams

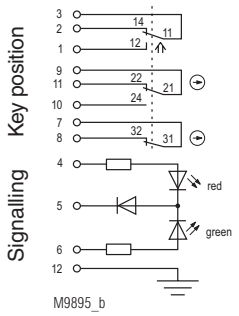


Fig. 1:
Locked while activated:
Key inserted

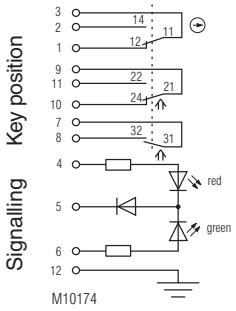


Fig. 2:
Lock deactivated:
Key removed

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 operation
Connection method:	Cage tension spring clamps
min. connection cross-section:	0.25 mm²
max. connection cross-section:	0.75 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 (at 23 °C ambient temperature)
Power consumption:	0.3 W
Rated impulse voltage:	0.8 kV
Rated insulation voltage:	< 60 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
Diagnostic coverage (DC), (mechanical):	

Logic and output	**cat. 2**	**cat. 3**	**cat. 4**
SX01M:	90 %	90 %	99 %
SX02M:	90 %	90 %	99 %
SV01M:	90 %	90 %	99 %
SV02M:	90 %	90 %	99 %

Protection against faults of common cause:	see table in STS design guide
Repair and replacement:	by manufacturer only
Test intervals:	
for PL a to d:	min. once a year
for PL e:	min. once a month

Ordering Example

STS- SX 01 M

- M — End module M
- 01 — Key module 01
- SX — Switch module SX

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

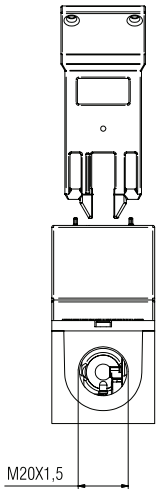
Functions	Safety switches design type 2	Safety switches design type 2 with solenoid lock	Mechanical units design type 2	Mechanical units with electrical monitoring	Mechanical units with electrical release
Units with standard function	SXA	ZRHA	M10A	RX10A RXK01M	YRXKM YRXK01M
Units with mechanical lock 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.					

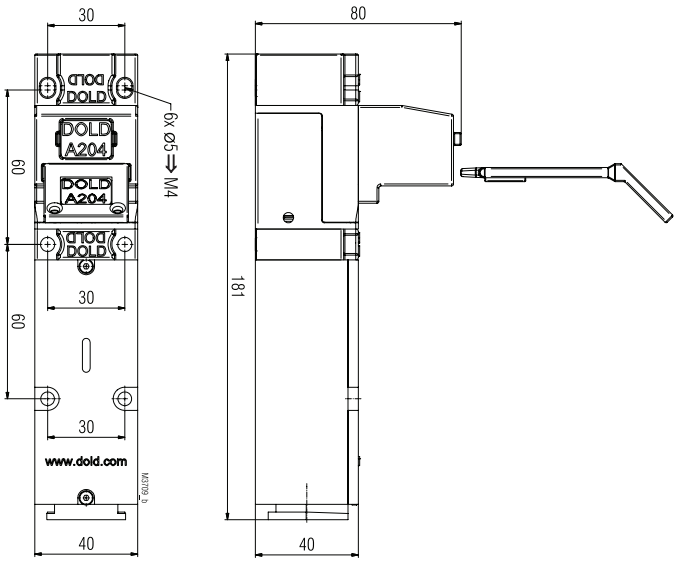
Data sheets

Solenoid locking modules SX/SV
Key module 01/10
End module M

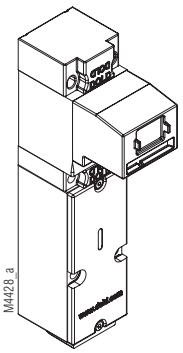
Info Take advantage of the advice of the **E. DOLD & SÖHNE KG** specialists regarding the choice of units and combination of a system.

Dimensional Drawing [mm]





SX01M
Clearance tolerances ± 2%



SX01M