

Presentation in the deactivated condition:
Key and actuator removed

STS/K-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 composite version of stainless steel and plastic 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)
 - Optional key removal
 - Several secured entries
 - Rugged ambient conditions
- This units are also available in stainless steel

Approvals and Markings



Function

Safety switch (type 2) for separating guards with forced key removal.

Application

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

Design and Operation

Attention!



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

The STS/K 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 key can be removed at any time, whereby hazards must be ruled out immediately.

The actuator can only be removed from actuator module B/K and the access opened after removing the key from key module 01/K. 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.

SX01BM/K is usually used in the system in connection with additional STS/K 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. M10BM/K, M11BM/K, M12M/K, M10B01M/K).

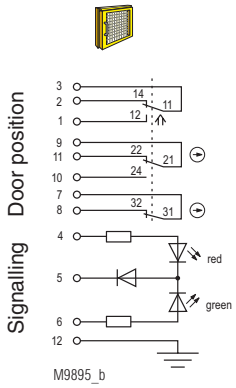


Fig. 1:
Locked while activated:
Key and actuator inserted,
Door closed

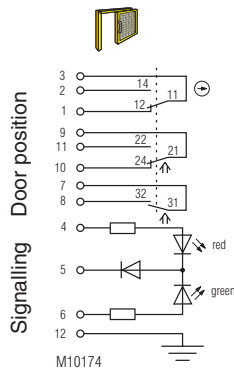


Fig. 2:
Lock deactivated:
Key removed
Door open

Switching logic

| | | | | |
|---------------|---|----|---------------|---------------|
| | | | Fig. 1 | Fig. 2 |
| Door contacts | 3 | 2 | | |
| | 3 | 1 | | |
| | 9 | 11 | | |
| | 9 | 10 | | |
| | 7 | 8 | | |

closed
 open

Enclosure: PA + GF
Internal parts and inserting slots: Stainless steel V4A / AISI 316 / AISI 630
Degree of protection: IP 65
Temperature range: - 25 °C to + 40 °C
Storage temperature: - 25 °C to + 60 °C
Mechanical principle: Rotating axis with redundant actuator
Connection method: Cage clamp terminals
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 10⁶ switching cycles
Electrical service life: 5 x 10⁶ switching cycles
Locking force: min. 2000 N
min. operating speed: 100 mm/s
max. operating speed: 250 mm/s
max. switching frequency: 360/h
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: ≤ 50 V
Overtoltage category: III
Pollution degree: 2
max. operating current: 2 A
Contacts: 1 NC contact, 2 antivalent changeover contacts

Switching principle: Changeover contact with forced-opening snap-action switch

Utilization category of switching elements
 to AC 15: 1 A
 to DC 13: 0.5 A
Short circuit strength, max. fusing: 2 A gG
Rated conditional short circuit current: 1000 A
Contact material: Ag / AgSnO₂
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
 according to DIN EN 50041
 IEC EN 60947-5-1 Appendix K

Additional requirement for cat. 4 structure (as single unit): Add 2nd actuator module SX01BBM/K

Diagnostic coverage (DC), (mechanical):

| Logic and output | cat. 2 | cat. 3 | cat. 4 |
|-------------------------|---------------|---------------|---------------|
| SX01BM/K: | 90 % | 90 % | |
| SX01BBM/K: | 90 % | 90 % | 99 % |
| SV01BM/K: | 60 % | 90 % | |
| SV01BBM/K: | 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

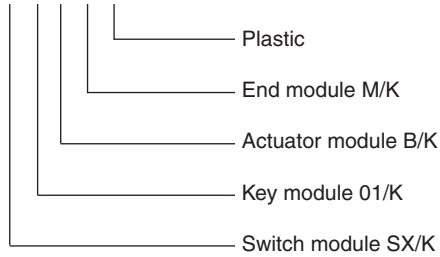
ATTENTION !



To avoid wrong usage (e.g. by overload, mounting position or usage in acid, alkaline or other hostile ambient conditions) the limitations of the product have to be observed. Please check in advance if your application requires the usage of the more robust stainless steel model of SAFE-MASTER STS. The requirements of the mounting and operating instruction must be fulfilled.

Ordering Example

STS- SX 01 B M /K



Variants and Combination Options

Because of their modular design the basic units of the SAFEMASTER STS/K 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 | SXBM/K | ZRHBM/K | M10BM/K | RXK01M/K RX10BM/K | YRXKM/K YRXK01M/K |
| Units with mechanical lock and forced key extraction | SX01BM/K | ZRH01BM/K | M11BM/K | RXK11M/K RX11BM/K | YRX10BM/K YRX11BM/K |
| Units with optional key extraction | SXB01M/K | ZRHB01M/K | M10B01M/K | RX10B01M/K RX10K01M/K | YRX10B01M/K |
| Units without actuator | SX01M/K | ZRH01M/K | M12M/K | RX11M/K | YRX11M/K |

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

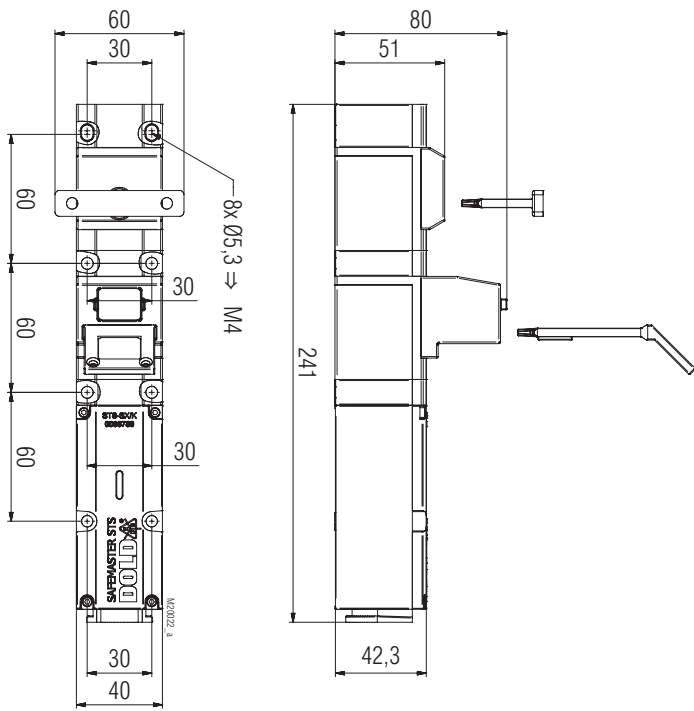
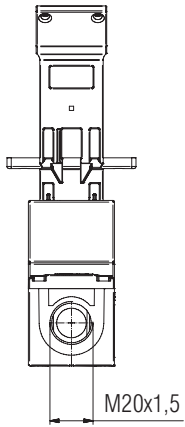
Data sheets

Switching module SX/K
Key module 01/K / 10/K
Actuator module B/K
End module M/K

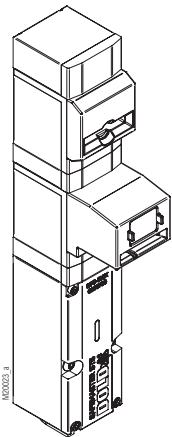


Take advantage of the advice of the **E. DOLD & SÖHNE KG** specialists regarding the choice of units and combination of a system.

Dimensional Drawing [mm]



SX01BM/K
Clearance tolerances $\pm 2\%$



SX01BM/K