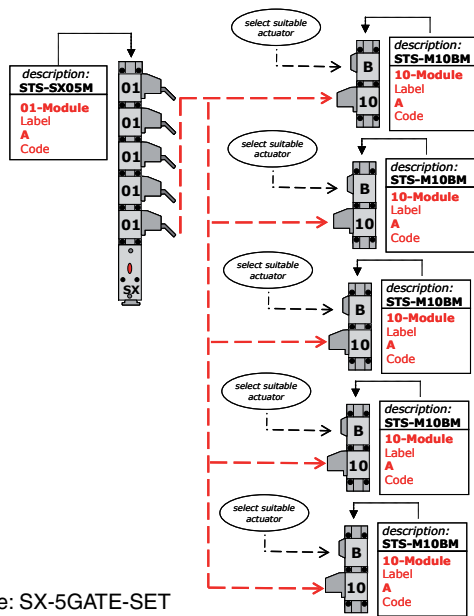


SAFEMASTER STS Safety Switch- and Key Interlock System SX-5GATE-SET



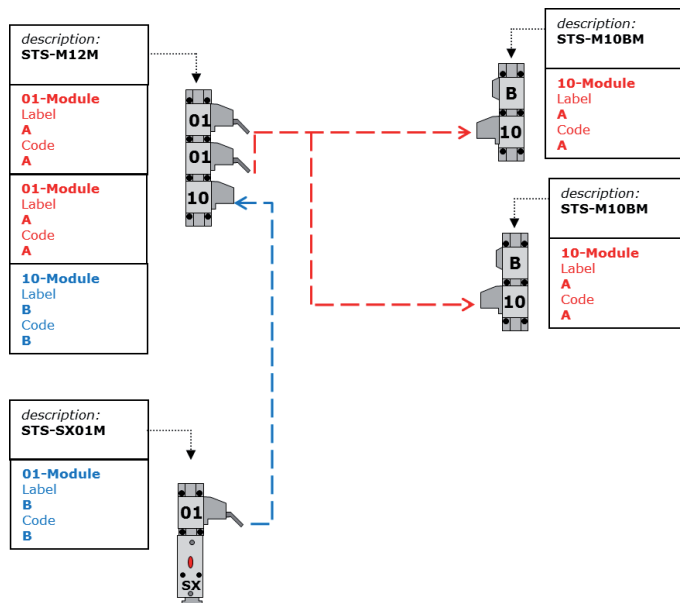
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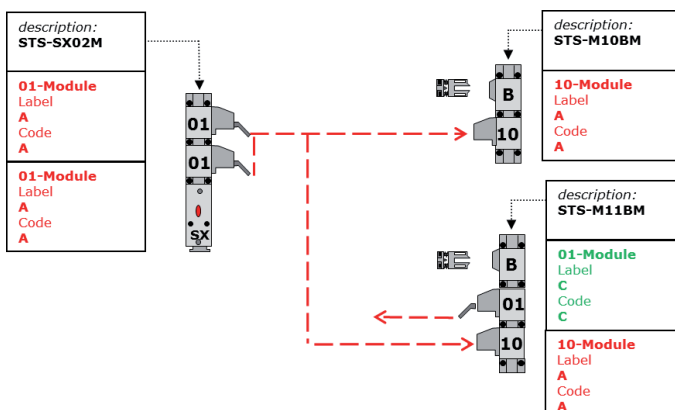
Example: SX-5GATE-SET

Options

If a key exchange box should be used this can be achieved by upgrading the system with a 1001-KEYMODULE-SET. See separate datasheet.



If a safety key for personal protection against being locked in is required a 01-SAFETY-KEY-SET can be added to the mechanical gatelock M10BM. See separate data sheet



STS-System Benefits

- TÜV certificate according to the legal and standard requirements
- 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

Features SX-5GATE-SET

The unit is particularly suitable for applications with:

- Several mechanically secured entries
- ATEX areas (whereby the STS-SX05M is installed outside the ATEX area and the downstream mechanical units M10BM inside the ATEX area)
- Single-channel/ redundant/ diverse safety circuits
- Rugged ambient conditions

Approvals and marking



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!

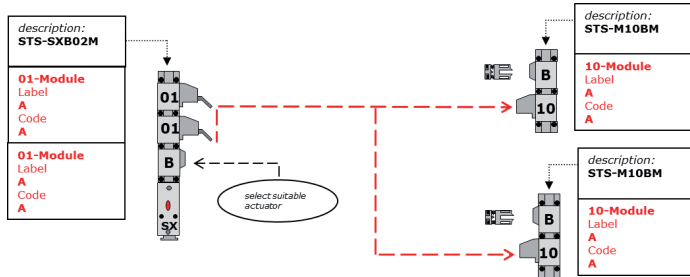
The STS switch unit must be integrated into a system and connected with a control unit so that the hazardous machine can only run when the guard is locked and closed.

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.

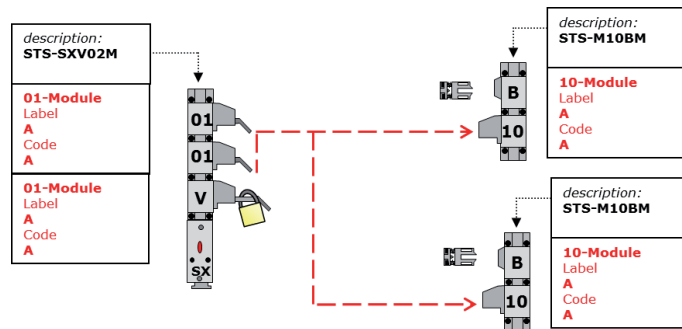
This gate securing system is available for 5 doors. It consists of 1 SX05M module and of 5 M10BM units. The SX05M module is monitoring that all keys are in place in order to operate the machine. Extracting one key will immediately switch the contacts of the SX05M unit, stopping any dangerous movement. With the extracted key, the operator moves to one of the 5 gates. Inserting the key into the mechanical gatelock M10BM will open the gate. As long as the gate is open, the key cannot be extracted. After closing the gate the key can be returned to the SX05M unit and by inserting the last one of the 5 keys the machine can be restarted.

Options

If the SX...M Switch should be mounted directly on the gate already securing the main entrance gate, a B-ACTUATOR-SET can be added allowing to secure 3 gates with an SX-2GATE-SET. see separate datasheet.



If the more people need to enter the dangerous zone they can secure themselves using personal padlocks, when a PADLOCKMODULE-SET is added to the SX...M Switch.. see separate datasheet.



Circuit Diagrams

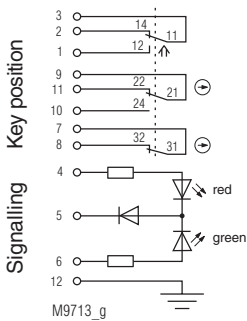


Fig. 1:
Locked while activated:
Key inserted

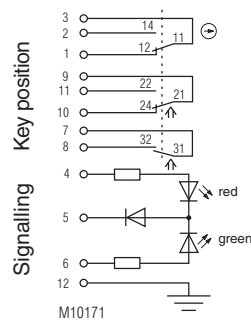


Fig. 2:
Lock deactivated:
Key removed

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
 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: 1.5 mm²
 Cable entry: 1 x M20 x 1.5
 B10_d: 2 x 10⁶ switching cycles
 Electrical service life: 5 x 10⁶ switching cycles
 min. operating speed: 100 mm/s
 max. operating speed: 500 mm/s
 (by exception, 1500 mm/s is permitted)
 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: < 60 V
 Contacts: 1 NC contact, 2 diverse changeovers contacts
 Switching principle: Changeover contact with forced-opening snap-action switch
 max. operating current: 2 A
 Short circuit strength, max. fusing: 4A gG
 Contact material: Ag / AgSnO₂
 Indicator: LED red/green, separate selection possible
 Test principles: EN ISO 13849-1:2008
 EN 1088+A2:2008
 EN 60947-5-1:2005
 GS-ET 19:04.2004
 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

Logic and output

STS-SX01M

Fault exclusions:

Protection against faults of common cause:

Repair and replacement:

Test intervals:

cat. 2 **cat. 3** **cat. 4**

97 % 99 % 99 %

none

see table in STS design guide

by manufacturer only

semi-annually recommended

min. once a year

Available sets:

SX-1GATE-SET

SX-2GATE-SET

SX-3GATE-SET

SX-4GATE-SET

SX-5GATE-SET

Actuators to be ordered separately 1 for each B-module:

S-ACTUATOR

C-ACTUATOR

CS-ACTUATOR

Accessories:

1001-KEYMODULE-SET

01-SAFETY-KEY-SET

B-ACTUATOR-SET

PADLOCKMODULE-SET