

**Presentation in the deactivated condition:**  
1st key inserted; 2nd 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)
- Forced key removal
- Several secured entries
- Extremely rugged ambient conditions

### Approvals and marking



### Function

Mechanical solenoid locking for separating guards with forced key entry and 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 entered and the movable part of the guard can then be opened!

The solenoid locking 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.

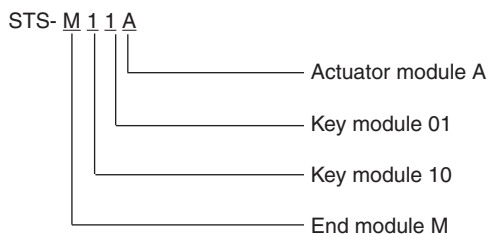
After entering a first key in key module 10 the second key can be removed from key module 01. The first key is blocked and the actuator released after removing the second key. The second key is blocked when the access is opened and the actuator is thus removed from actuator module A. This ensures an escape route. Only after the access is locked, the actuator and then the second key were returned to their starting position can the first key be removed again and the solenoid locking is activated.

M11A is used in the system in connection with additional STS units and SAFEMASTER products. The first key to be entered may originate from these units (e.g. release through upstream solenoid locking ZRH01A in connection with a speed monitor UH 5947 or standstill monitor LH 5946). The second 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).

## Technical Data

|   |  |
|---|--|
| Enclosure:  | Stainless steel V4A / AISI 316L / AISI 630   |
| Temperature range:  | - 40 °C to + 100 °C  |
| Storage temperature:  | - 40 °C to + 80 °C   |
| Mechanical principle:   | Rotating axis with redundant actuation   |
| B10 <sub>a</sub> :  | 2 x 10 <sup>6</sup> switching cycles   |
| min. operating speed:   | 100 mm/s   |
| max. operating speed:   | 500 mm/s   |
| max. switching frequency:                                     | 360/h  |
| Locking force:  | min. 4000 N  |
| Shearing force:   | depending on actuator  |
| Test principles:  | EN ISO 13849-1:2008<br>DIN EN ISO 14119:2014-03<br>EN 60947-5-1:2005<br>GS-ET-15:02.2011<br>GS-ET-19:02-2011<br>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  |
| Additional requirement for cat. 4 structure (as single unit): | Add 2nd actuator module, Type M11BA  |
| Diagnostic coverage (DC), (mechanical):                       |  |
| <b>Logic and output</b>                                       |  |
| M11A:   | 90 %   |
| M11BA:  | 99 %   |
| MK11M:  | 90 %   |
| MKK11M:   | 99 %   |
| Protection against faults of common cause:                    | see table in STS design guide  |
| Repair and replacement:                                       | only by manufacturer   |
| Test intervals:   | semi-annually recommended, min. once a year  |

## Ordering Example



## 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<br>RXK01M                             | YRXKM<br>YRXK01M                         |
| Units with mechanical lock and forced key extraction | SX01A                         | ZRH01A   | M11A                           | RX11A<br>RXK11M                             | YRX10A<br>YRX11A                         |
| Units with optional key extraction                   | SXB01M                        | ZRHB01M  | M10B01M                        | RX10B01M<br>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.

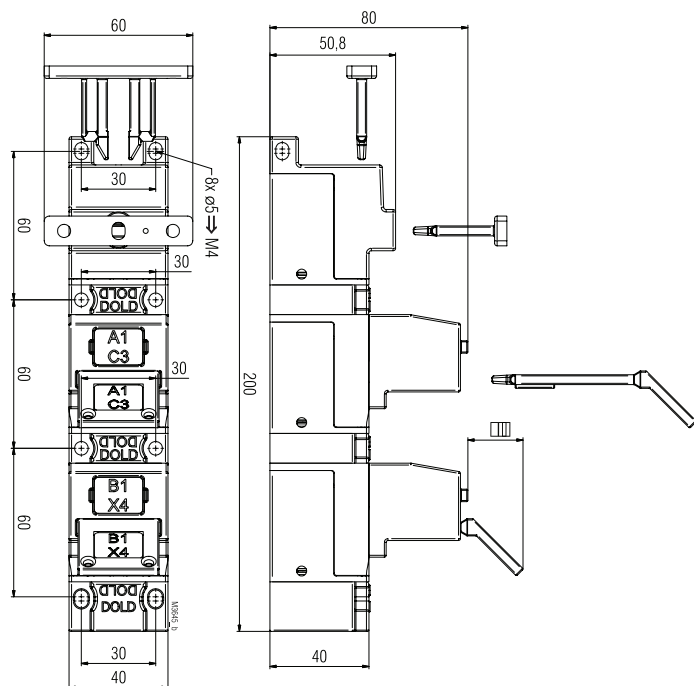
### Data sheets

End module M  
Key module 01/10  
Actuator module A

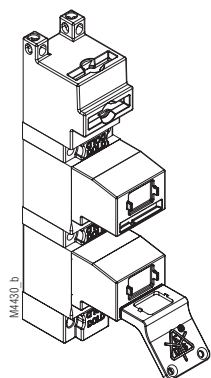


Take advantage of the advice of the **E. DOLD & SÖHNE KG** specialists regarding the choice of units and combination of a system.

Dimensional Drawing [mm]



M11A  
Clearance tolerances  $\pm 2\%$



M11A

