



**Presentation in the deactivated condition:**  
 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 electromagnetic solenoid locking.

YRXKM/K and YRXKKM/K based units can be regarded as safety switches (lock) without interlocking with additional blocking function.

YRXK01M/K and YRXKK01M/K based units can be regarded as mechanical interlock with blocking function.

**Application**

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

**Design and Operation**

The STS/K solenoid locking units prevent opening of separating guards and disable the closing without an enabling signal on the magnet.

**Attention! Version YRXK01M/K**

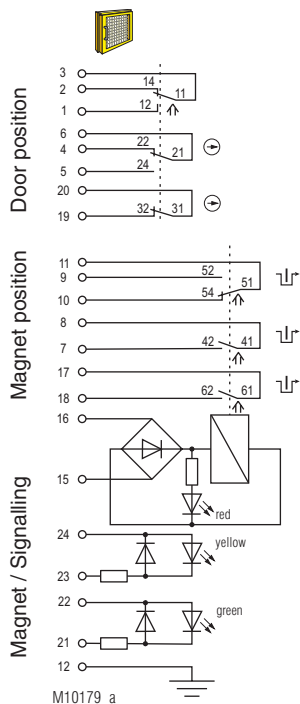
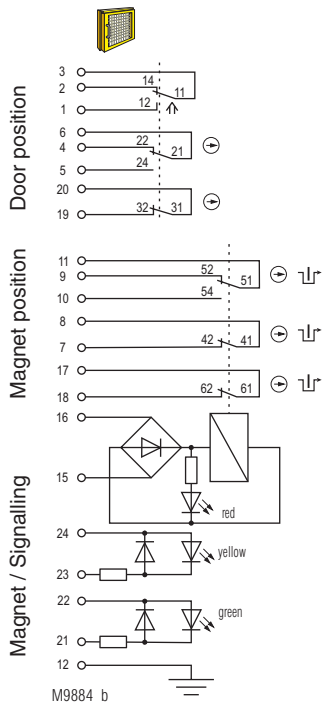


Hazards must be ruled out before a key can be inserted and the movable part of the guard can then be opened!

The STS/K solenoid locking units YRXKM/K and YRXK01M/K are to be integrated into a system and connected with a control unit so that the hazardous machine can run only when the guard (YRXK01M/K) is locked and closed.

An access can only be closed and the actuator inserted in the actuator module after a release signal was sent by the machine control to the YRXKM and YRXK01M solenoid locking units. The movable part of the guard can be opened and closed as long as the release signal is still applied; Is the key not removed, the solenoid locking is not activated. The solenoid locking is activated again once no more release signal is applied and the guard is closed. The machine can now be restarted. Actuator and magnet position are monitored by separate contacts.

YRXK01M/K is usually used in the system in connection with additional STS/K units and SAFEMASTER products (e.g. release by speed monitor UH 5947, standstill monitor LH 5946 or speed/standstill monitor BH 5932.



**Fig. 1:**  
- YRXKM:  
Magnet locked,  
Actuator removed,  
Door open  
- YRXK01M:  
Magnet locked,  
Actuator removed,  
Key inserted,  
Door open

**Fig. 2:**  
- YRXKM:  
Magnet released,  
Actuator removed,  
Door open  
- YRXK01M:  
Magnet released,  
Actuator removed,  
Key inserted,  
Door open

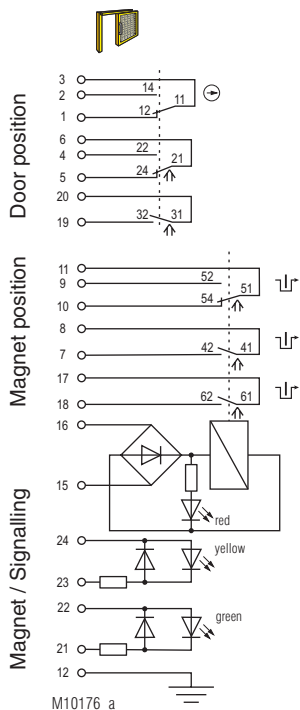


		Fig. 1	Fig. 2	Fig. 3
Door contacts	3	2	■	■
	3	1	■	■
	6	4	■	■
Magnet contact	6	5	■	■
	19	20	■	■
	11	9	■	■
Control signal Magnet	11	10	■	■
	7	8	■	■
	17	18	■	■
Magnet	15	16	■	■
			■	■

■ closed  
□ open

The state shown in **Figure 3** does not depend on the control signal of the magnet.  
If the control signal is applied and the key inserted the solenoid locking changes to the state of **Figure 2**.  
If no signal is applied and the key inserted the solenoid locking changes to the state of **Figure 1**

Enclosure: PA + GF  
Internal parts and inserting slots: Stainless steel V4A / AISI 316 / AISI 630  
Degree of protection: IP 65  
Temperature range standby current principle: - 25 °C to + 38 °C  
Temperature range load current principle: - 25 °C to + 38 °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 mm<sup>2</sup>  
max. connection cross-section: 0.75 mm<sup>2</sup>  
Cable entry: 1 x M20 x 1.5  
B10<sub>g</sub>: 2 x 10<sup>6</sup> switching cycles  
Electrical service life: 5 x 10<sup>6</sup> switching cycles  
Locking force: min. 2000 N  
Shearing force: depending on actuator  
Solenoid locking principle: Standby current, failure locking-proof  
Magnetic principle: Standby current or load current  
min. operating speed: 100 mm/s  
max. operating speed: 250 mm/s  
max. switching frequency: 360/h  
Operating mode: 100% ED  
Nominal voltage U<sub>N</sub>: AC/DC 24 V  
Nominal voltage range: 0.85 ... 1.1 U<sub>N</sub>  
(see solenoid derating graph)

Power consumption: 6 W  
Rated impulse voltage: 0.8 kV  
Rated insulation voltage: ≤ 50 V  
Overvoltage category: III  
Pollution degree: 2  
Max. operating current  
Standby current principle: 2 A  
Load current principle: 1 A  
Contacts  
Door position: 1 NC contact, 2 antivalent changeover contacts  
Magnet position: 2 NC contacts + 1 changeover contact  
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  
Contact material: Ag / AgSnO<sub>2</sub>  
Short circuit strength, max. fusing: 2 A gG  
Rated conditional short circuit current: 1000 A  
Indicator: LED red/green, separate selection possible  
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

Mounting:  
Contact elements:  
Additional requirement for cat. 4 structure (as single unit): Add 2nd actuator module Type YRHBBM/K

Diagnostic coverage (DC), (mechanical):  
**Logic and output**

	cat. 2	cat. 3	cat. 4
YRXKM/K:	60 %	90 %	
YRXK01M/K:	90 %	90 %	
YRXKKM/K:	90 %	99 %	99 %
YRXKK01M/K:	90 %	99 %	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

## Technical Data

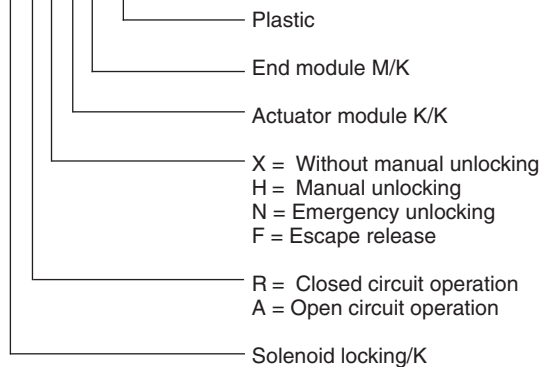
### ATTENTION !



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 SAFEMASTER STS. The requirements of the mounting and operating instruction must be fulfilled.

## Ordering Example

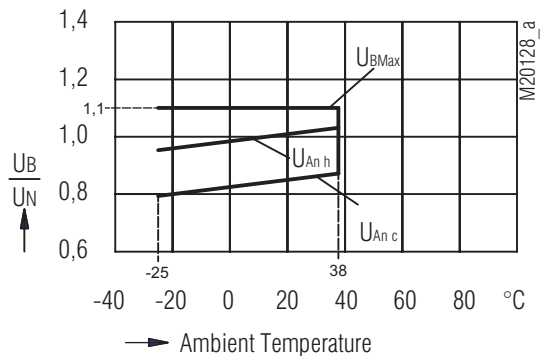
STS- Y R X K M /K



### Versions of the solenoid locking module

YRX Solenoid locking standby current principle  
YRH Solenoid locking standby principle with manual unlocking  
YRN Solenoid locking standby principle with emergency unlocking

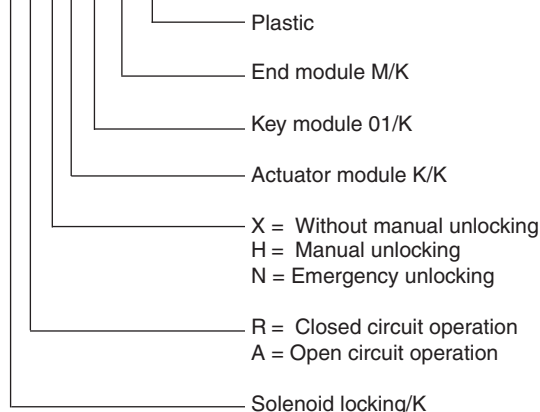
## Solenoid derating graph



$U_{BMax}$  maximum power supply dependent upon temperature  
 $U_{An c}$  response voltage at coil temperature = ambient temperature  
 $U_{An h}$  response voltage at preceding agitation at 1.1 x  $U_n$

## Ordering Example

STS- Y R X K 01 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

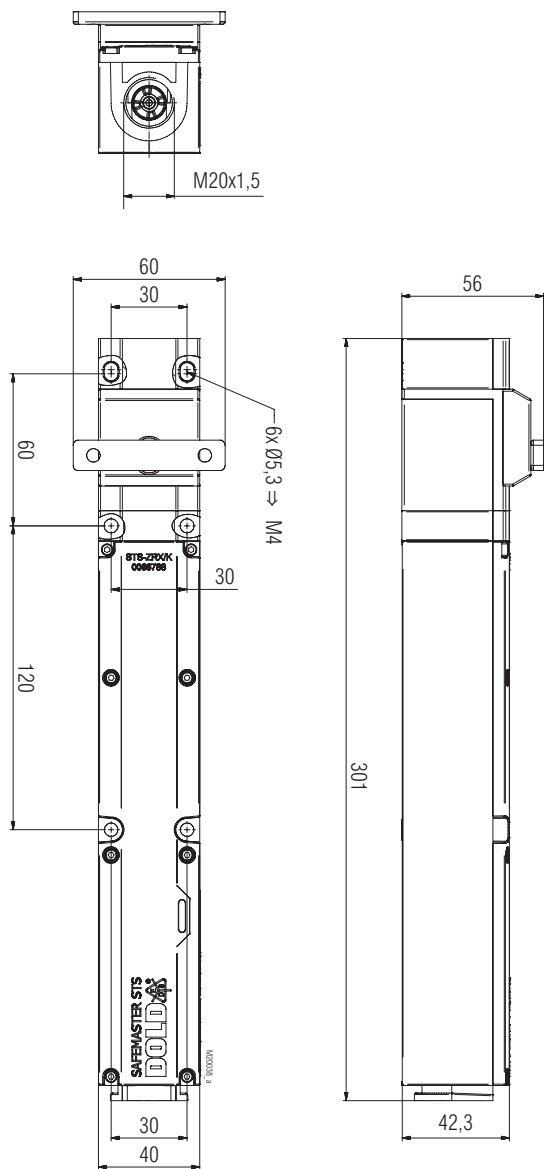
For additional information refer to the data sheets of the individual modules and other basic units.

### Data sheets

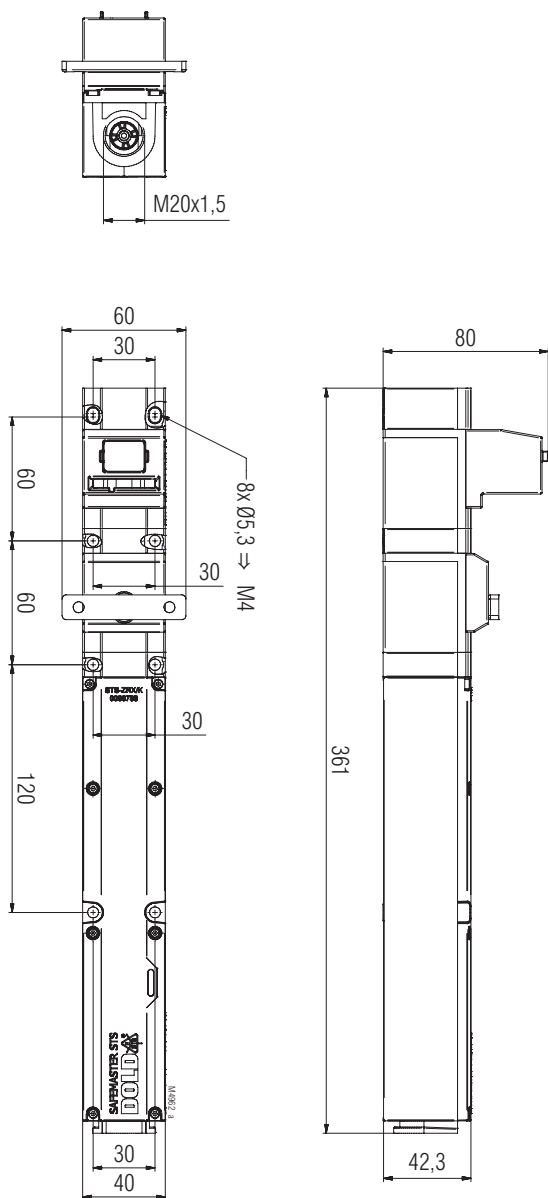
Switching module YRX/K / YRH/K / YAX/K  
Key module 01/K / 10/K  
Actuator module K/K  
End module M/K



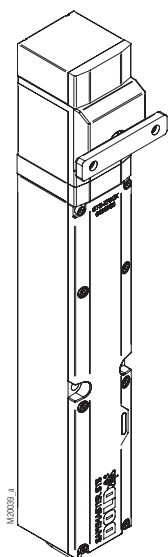
Take advantage of the advice of the **E. DOLD & SÖHNE KG** specialists regarding the choice of units and combination of a system.



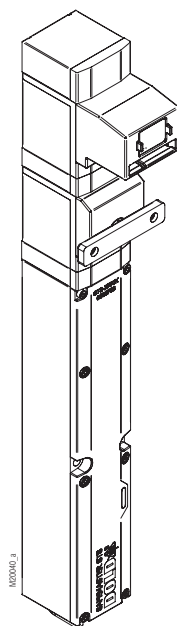
YRXKM/K  
Clearance tolerances ± 2%



YRXK01M/K  
Clearance tolerances ± 2%



YRXKM/K



YRXK01M/K