SAFEMASTER STS
Safety Switch- And Key Interlock System
Basic Unit RX10B01M and RX10K01M

Translation of the german original

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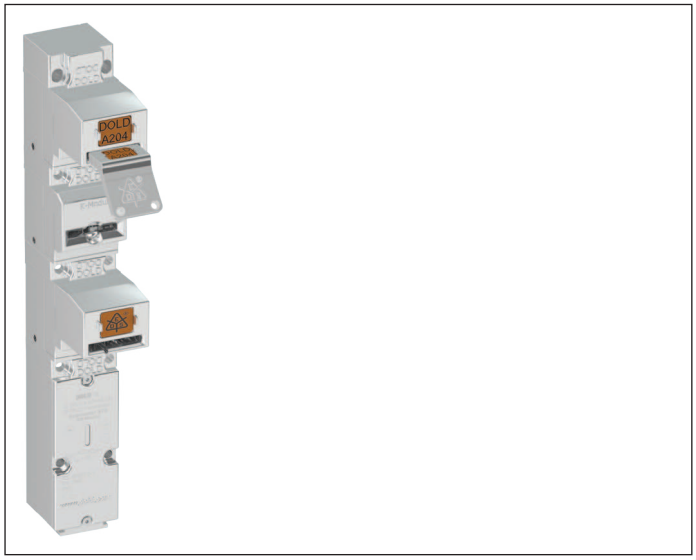


Presentation in the deactivated condition:
1st key inserted; Actuator and 2nd key removed

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 units are particularly suitable for applications with:
- Full body access (lock-in danger)
- Optional key removal
- Several secured entries
- Extremely rugged ambient conditions
- Feedback contacts of the second key position
- Required access rights

Approvals and marking

Function

Mechanical solenoid lockings for separating guards with forced key entry and optional key removal as well as electrical monitoring function.

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 the movable part of the guard can then be opened! and the dangerous location can be reached!

Optionally, another key can be removed. 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 into key module 10 the actuator can be removed from actuator module B and the access can thus be opened. The first key is blocked and the second key released after removing the actuator. The actuator is blocked when the second key is removed from key module 01. This ensures an escape route. Only after the second key and the actuator (access is locked) were returned to their starting position can the first key be removed again and the solenoid locking is activated.

RX10B01M and RX10K01M are 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, optionally to be removed, can serve as protection against lock-in or for the operating release of additional units (e.g. M10A, M11A, M12M, M10B01M). On the base unit RX10B01M the key can be assigned to a person with access rights.

Circuit Diagrams (RX10B01M and RX10K01M)

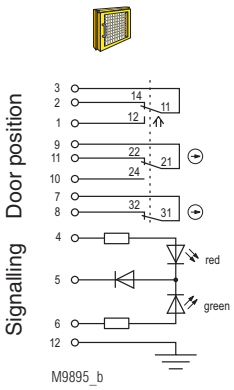


Fig. 1:
Locked while activated:
1st key removed,
Actuator inserted,
2nd key inserted,
Door closed

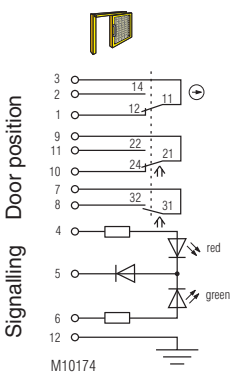


Fig. 2:
Lock deactivated:
1st key inserted,
Actuator removed,
2nd key removed
Door open

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 actuator
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
Locking force:	min. 4000 N
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:	≤ 50 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
Additional requirement for cat. 4 structure (as single unit):	Add 2nd actuator module, Type SXBA

Diagnostic coverage (DC), (mechanical):

Logic and output	**cat. 2**	**cat. 3**	**cat. 4**
RX10B01M:	90 %	90 %	90 %
RX10K01M:	90 %	90 %	90 %
RX10BB01M:	90 %	90 %	99 %
RX10KK01M:	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- RX 10 B 01 M

- End module M
- Key module 01
- Actuator module B
- Key module 10
- Switching module RX

Ordering Example

STS- RX 10 K 01 M

- End module M
- Key module 01
- Actuator module K
- Key module 10
- Switching module RX

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

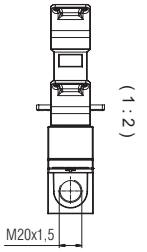
Functions	Safety switches design type 2	Safety switches design type 2 with solenoid lock	Mechanical units design type 2	Mechanical units with electrical monitoring	Mechanical units with electrical release
Units with standard function	SXA	ZRHA	M10A	RX10A RXK01M	YRXKM YRXK01M
Units with mechanical lock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

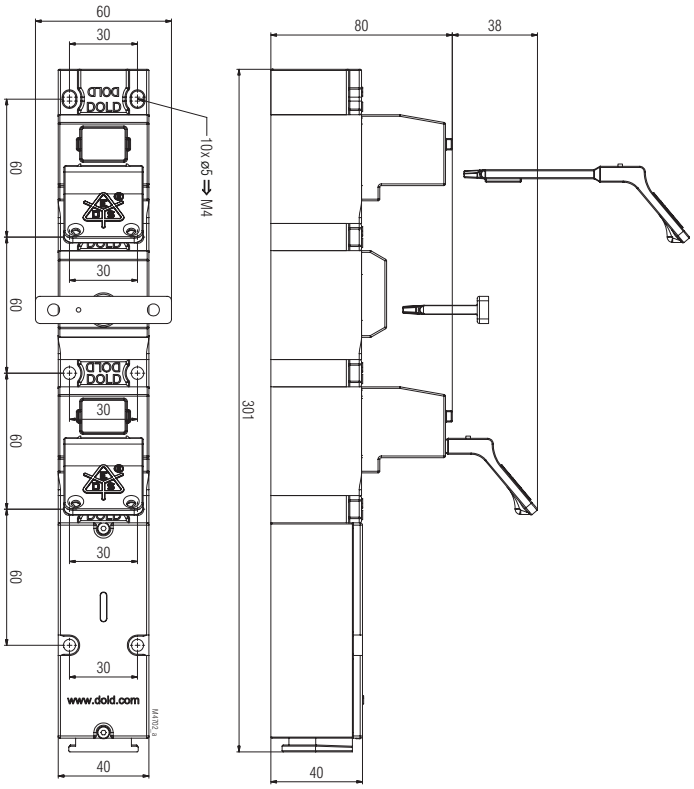
Data sheets

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

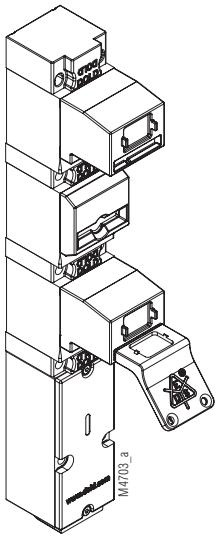
Info Take advantage of the advice of the **E. DOLD & SÖHNE KG** specialists regarding the choice of units and combination of a system.

Dimensional Drawing [mm]

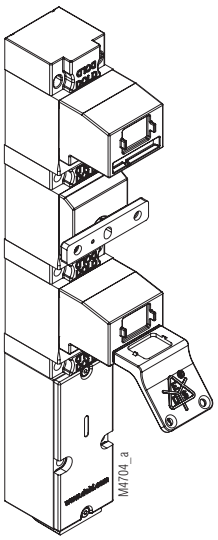




RX10B01M
Clearance tolerances ± 2%



RX10B01M



RX10K01M