



SAFEMASTER STS/K
Safety switch- and
key interlock system
Switch module
RX/K

**Translation
of the original instructions**



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Symbol and Notes Statement



DANGER:
Indicates that death or severe personal injury will result if proper precautions are not taken.



WARNING:
Indicates that death or severe personal injury can result if proper precautions are not taken.



CAUTION:
Indicates that a minor personal injury can result if proper precautions are not taken.



INFO:
Referred information to help you make best use of the product.



ATTENTION:
Warns against actions that can cause damage or malfunction of the device, the device environment or the hardware / software result.



Before installing, operating or maintaining this device, these instructions must be carefully read and understood.



The installation must only be done by a qualified electrician!



The installation must only be done by a qualified mechanic!



Do not dispose of household garbage!
The device must be disposed of in compliance with nationally applicable rules and requirements.



Storage for future reference.

To help you understand and find specific text passages and notes in the operating instructions, we have important information and information marked with symbols.

General Notes

The product hereby described was developed to perform safety functions as a part of a whole installation or machine. A complete safety system normally includes sensors (SAFEMASTER STS/K System), evaluation units, signals and logical modules for safe disconnections. The manufacturer of the installation or machine is responsible for ensuring proper functioning of the whole system. DOLD cannot guarantee all the specifications of an installation or machine that was not designed by DOLD. The total concept of the control system into which the device is integrated must be validated by the user. DOLD also takes over no liability for recommendations which are given or implied in the following description. The following description implies no modification of the general DOLD terms of delivery, warranty or liability claims.

Notes



Risk!
Danger to life or risk of serious injuries.

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



INFO

- For information regarding use in the system and validation according to EN ISO 13849-2, see SAFEMASTER STS application guide.
- Take advantage of the advice of the **E. DOLD & SÖHNE KG** specialists regarding the choice of units and combination of a system.



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.

SAFEMASTER STS/K Safety switch- and key interlock system Switch Module RX/K



STS/K-System Benefits

- EU-Test certificate according to the directive 2006/42/EG, annex IX
- For safety applications up to PLe/Cat. 4 according to DIN EN/ISO 13849-1
- Modular and expandable system
- Rugged stainless steel and plastic design
- Wireless mechanical safeguarding
- Combines the benefits of safety switch, locking module 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

- Switch module for access authorization applications or additional direct key/actuator monitoring of mechanical units
- Module expansions possible only above the module
- With integrated LEDs for status indication
- Optional single-channel / redundant / diverse switch-off possible
- This module is also available in stainless steel

Product Description

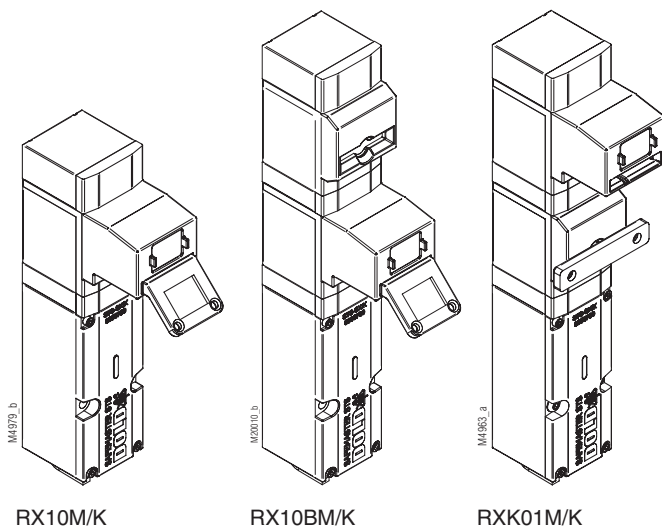
Switch modules RX/K is assembled together with other modules into a STS/K unit. They are used for access control or additional direct key / actuator monitoring of mechanical units with separating guard.

In case of authorization applications it must be ensured that the hazard is stopped and/or entries are cleared when inserting the key/actuator.

Approvals and Markings



Installation Examples



Design and Operation

Switch module RX/K is a rugged and flexible switch module monitoring the safe position of one or several entries, e.g. protective hood or door, in the system. For this purpose the module is used in connection with other mechanical STS/K modules, e.g. actuator module K/K, key modules 10/K and 10S/ and/or padlock module W/K. The key and padlock modules can only be installed above the switch module used.

Switch modules RX/K is typically used in systems where access rights are distributed via SAFEMASTER STS keys. For access authorizations users and service employees receive an STS key allowing entry to predefined plant areas. Examples for such units are RX10BM/K or RX11BM/K. With unit RX10BM/K a key must first be inserted before an access can be opened. With unit RX11BM/K a second key can be removed in addition. Also, these modules without actuator module can only be used to release keys in a key interlock system if access authorizations are used here. This function is applied in key interlock systems with central shut-off or where the shut-off must take place outside the system, for instance in Ex zones, with strong vibration or dirt build-up, etc.

Switch module RX/K is used to monitor an actuator (of a mechanical unit). These are examples of such SAFEMASTER STS/K units: RXK01M/K and RXE11M/K.

For additional information refer to the data sheet of actuator modules K/K.

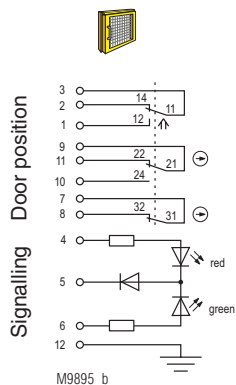


Fig. 1:
Locked while activated:
Key removed,
Actuator inserted,
Door closed

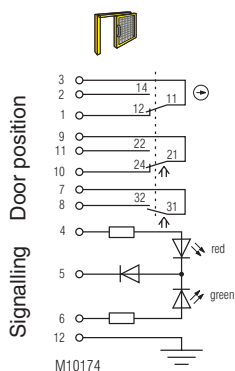


Fig. 2:
Lock deactivated:
Key inserted,
Door unlocked and open

Switching logic

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

■ closed
□ open

Technical Data

Mechanical Data

Mechanical principle: Rotating axis with redundant actuation
Enclosure: PA + GF
Internal parts: Stainless steel V4A / AISI 316 (acc. to EN 10027-2; 1.4401; 1.4404; 1.4542; 1.4301; 1.4310)
Degree of protection: IP 65
Operating speed: min. / max.: 100 / 250 mm/s

Input

Nominal voltage U_N (Rated voltage): AC/DC 24 V
Nominal voltage range: 0.85 ... 1.1 U_N
Power consumption: 0.3 W

Output

Contacts: 1 NC contact, 2 antivalent changeover contacts
Switching element: IEC EN 60947-5-1 Appendix K
Switching principle: Changeover contact with forced opening spring contact
Contact material: Ag / AgSnO₂
Max. switching frequency: 360/h
Max. operating current: 2 A
Utilization category of switching elements
to AC 15: 1 A
to DC 13: 0.5 A
Electrical service life: 5 x 10⁶ switching cycles
Short circuit strength, Max. fuse rating: 2 A gG
Conditional rated short-circuit current: (rated conditional short circuit current): 1000 A
Mechanical life: 1 x 10⁶ switching cycles

General Data

Temperature range: - 25°C to + 45°C
Storage temperature: - 25°C to + 60°C
Rated impuls voltage: 0.8 kV
Rated insulation voltage: ≤ 50 V
Overvoltage category: III
Pollution degree: 2
Connection: Cage clamp terminals
Cross sections min. / max.: 0.25 / 0.75 mm² (with ferrules and sleeve according to DIN 46228-4)
Cable entry with thread: 1 x M20x1.5
Intended use: Up to max. cat. 4, PL e according EN ISO 13849-1
Mounting: To DIN EN 50041
Test principles: EN ISO 13849-1:2015
DIN EN ISO 14119:2014-03
EN 60947-5-1:2017
GS-ET-15:2019-06
GS-ET-19:2019-06
GS-ET-31:2010-02

Safety Related Data

Data suitable for the PFH_D summation method according to EN ISO13849-1:2016

Data according to EN ISO13849-1:2016	Switch Module RX/K			
Category	2	3	3	4
PL	d	d	e	e
PFH _D	1,061E-09	6,84592E-10	5,44569E-10	1,00122E-10
T _{10D}	20	20	20	20
CCF required	65-100	85-100	85-100	85-100
B _{10d}	2.000.000	2.000.000	2.000.000	2.000.000
d _{op} (d/a)	365	365	365	365
h _{op} (h/d)	24	24	24	24
t _{cycle} (h)	1	1	1	1
n _{op}	8760	8760	8760	8760
Diagnostic coverage DC	60%	60%	90%	99%
Test interval according to ISO14119	1 / year	1 / year	1 / month	1 / month

Category 2: The prerequisites for installation and integration into a category 2 architecture must be met

Category 3: The prerequisites for installation and integration into a category 3 architecture must be met

Category 4: The prerequisites for installation and integration into a category 4 architecture must be met, in particular 2 actuators must be used

PFH_D: A single module has no function. As a result, an individual module cannot have any safety-related characteristic values. The safety-related characteristic data in the table only serve to determine the values of a unit into which it is integrated.

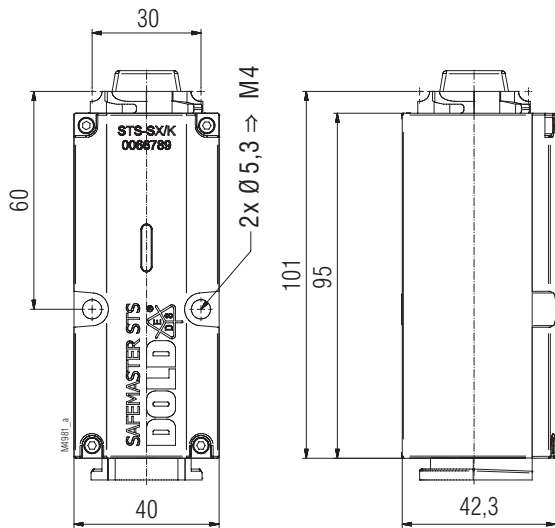
When used as part of a **key transfer system**:

- PFH_D total STS system = SUM PFH_{D1} + ... PFH_{Dn}
- Lowest category of a module = category of whole STS system
- Lowest DC of a module = DC entire STS unit



If the design of a unit is changed, the safety-related data may also change.

Dimension [mm]



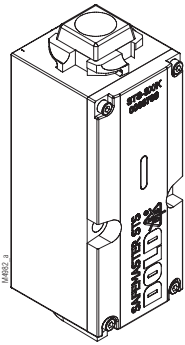
Variants and Accessories

Switch modules SX/K

For applications where the key modules 01/K, 01S/K or actuator module B/K shall be installed above the switch module, version SX/K is available. For more information, refer to the data sheet for switch modules SX/K.

Ordering Designation

Switching module RX/K
Article number: 0066967



DE	Notizen
EN	Notice
FR	Note

