

## MKey RFID

### Interlock safety switch with guard locking

[EN] The complete Product manual and Declarations of conformity can be found at:

[new.abb.com/low-voltage/products/safety-products](http://new.abb.com/low-voltage/products/safety-products)

Model	Product ID / Description
MKey9RF	2TLA050007R0602 / MKey9RF No Key Plastic M20
MKey9RFQC	2TLA050007R2602 / MKey9RFQC No Key Plastic M12
MKey8RF	2TLA050011R0612 / MKey8RF No Key Die-cast M20
MKey8RFQC	2TLA050011R2612 / MKey8RFQC No Key Die-cast M12
MKey8ZRF	2TLA050011R0622 / MKey8ZRF No Key Stainless steel M20
MKey8ZRFQC	2TLA050011R2622 / MKey8ZRFQC No Key Stainless steel M12
MKey10RF	2TLA050012R0612 / MKey10RF No Key Die-cast M20
MKey10RFER	2TLA050012R0652 / MKey10RFER No key Die-cast M20 Escape Release

### Safety precautions

The safety precautions must be followed during installation, operation, maintenance, and troubleshooting.

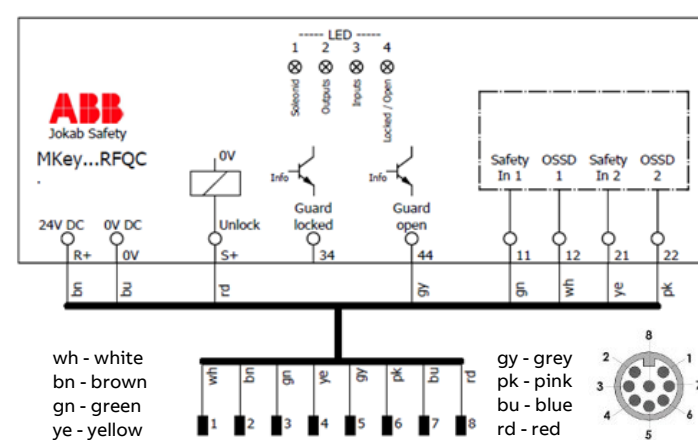
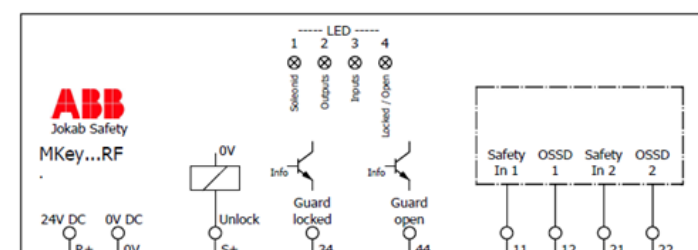
It is the responsibility of the user to ensure the correct overall functionality.

- Warning!** Carefully read through the entire product manual before using the device.
- Warning!** The devices shall be installed by authorized personnel following applicable Safety regulations, standards, and legislation.
- Warning!** Failure to comply with instructions, operation that is not in accordance with the use prescribed in the instructions, improper installation or handling of the device can affect the safety of people and the plant.
- Warning!** For installation and prescribed use of the product, the special notes in the instructions must be carefully observed and the technical standards relevant to the application must be considered.
- Warning!** In case of failure to comply with the instructions or standards, especially when tampering with and/or modifying the product, any liability is excluded.

### Product description

MKey RFID is used as an interlocking device for moveable guards, with a safe locking function. MKey RFID products consists of two separate parts, a switch and its RFID actuator which must be ordered separately. It is fitted with an input- and output-OSSD interface. Combined with a suitable mechanical accessory it is easy to reach the highest safety level according to applicable standards.

### Connections



- Warning!** The information signal is not a failsafe signal and must never be used for the safety purpose(s).

### Installation

- M5 mounting bolts must be used to fix the switch and actuator; the tightening torque to ensure a reliable fix is 4.0 Nm.
- Tightening torque for the lid screws, plugs and glands is 1.5 Nm to ensure the IP seal. The head's bolts torque is 1.5 Nm.
- The  $S_{ar}$  distance must be used in calculations (e.g., for minimum safety distance).
- Tightening torque for terminal screws is 0.7 Nm, max conductor size is 1.0 mm<sup>2</sup> or AWG 16.

- Caution!** Do not mount adjacent RFID actuators or switches closer than 100 mm.

- Warning!** All safety functions shall be tested before starting up the system.

### Maintenance

Maintenance shall be done in accordance with a risk assessment for the individual application.

- Warning!** The safety functions and the mechanics shall be tested regularly, at least once every year to confirm that all the safety functions are working properly.

- Warning!** In case of breakdown or damage to the product, contact ABB. Do not try to repair the product It might accidentally cause permanent damage, impairing the safety of the device and in turn lead to serious injury to personnel.

### Technical data

Information for use in USA/Canada																			
Rated operating voltage	24 VDC (+/- 10 %) SELV/PELV or Class 2																		
Current consumption	R+ (50 mA Max.) S+ (500 mA Max.) (Solenoid)																		
Ambient temperature	Operation: -25 °C to +40 °C (continuous solenoid voltage) Storage: -25 °C to +80 °C																		
Humidity range	Tested 55 °C, 93 % R.H. 35 to 85 % (with no icing and condensation)																		
Enclosure	Type 1, 4, 4x																		
Intended use	Applications according to NFPA 79																		
Power source	Only suitable for use in a limited voltage / current circuitry. The limited voltage / current source must comply with one of the following: a) An isolating device such that the maximum open circuit voltage potential available to the circuit is not more than +24 VDC and the current is limited to a value not exceeding 8 A measured after 1 min of operation. or b) A suitable isolating source in conjunction with a fuse in accordance with UL248. The fuse shall be rated max. 4 A and be installed in the +24 VDC power supply to the device to limit the available current.																		
Cables assemblies	Any listed (CYJV/7), M12, 8-pin, A-coding mating connector. Cord provided shall be 24 AWG (0.2 mm <sup>2</sup> ) minimum when one end is provided with leads for connection to the source.																		
Conductor size	Maximum ampere ratings of the overcurrent protection: <table border="1"> <thead> <tr> <th>AWG</th> <th>(mm<sup>2</sup>)</th> <th>Ampere</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>(1.3)</td> <td>4</td> </tr> <tr> <td>18</td> <td>(0.82)</td> <td>4</td> </tr> <tr> <td>20</td> <td>(0.52)</td> <td>3</td> </tr> <tr> <td>22</td> <td>(0.32)</td> <td>2</td> </tr> <tr> <td>24</td> <td>(0.20)</td> <td>2</td> </tr> </tbody> </table>	AWG	(mm <sup>2</sup> )	Ampere	16	(1.3)	4	18	(0.82)	4	20	(0.52)	3	22	(0.32)	2	24	(0.20)	2
AWG	(mm <sup>2</sup> )	Ampere																	
16	(1.3)	4																	
18	(0.82)	4																	
20	(0.52)	3																	
22	(0.32)	2																	
24	(0.20)	2																	

### Directives / Harmonized standards / Designated standards

Conformity	European Machinery Directive 2006/42/EC 2014/30/EU – EMC 2011/65/EU – RoHS II + 2015/863 EN ISO 13849-1 EN 62061 EN ISO 14119 EN 60947-5-1 EN 60947-5-3 UL 60947-5-1
EN 62061	SIL3, PFH (1/h) = 1.0 x 10 <sup>-9</sup> SIL3, PFD (Av.) = 8.7 x 10 <sup>-5</sup> Proof Test Interval T1 = 20a
EN ISO 13849-1	PL e, category 4
EN ISO 14119	Type 4, high level coded
Certificates	TÜV, cULus

### Information for use in EU

Authorized to compile the technical file	ABB Electrification Sweden AB SE-721 61 Västerås Sweden
--	---

### Information for use in UK

Importer address	ABB Ltd. Tower Court Coventry CV6 5NX United Kingdom
Authorized to compile the technical file	
Conformity UK	2008 No 1597 – Supply of Machinery (Safety) Regulations (MD) 2016 No. 1091 – Electromagnetic Compatibility Regulations (EMC) 2012 No 3032 – Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations (RoHS)

### RFID code teach-in procedure

The RFID code is taught after the actuator and switch has been mounted and cables connected during installation. Follow the below step-by-step instruction.

1. Power off, insert new actuator.
2. Power on, each red LED on in sequence (LEDs chase across the switch).
3. Power off.
4. Power on, all LEDs flash red together (all on, all off).
5. Power off.
6. Power on, new tag is now paired with the MKey RFID.