

MF SERIES RFID NON-CONTACT SAFETY SWITCH

Features

- Actuation without contact, using RFID technology
- Digitally coded actuator
- 3 LEDs for status display
- Connecting up to 32 sensors in series
- Short-circuit protection, polarity-reversing protection
- Safety category: up to SIL 3, PL e and Category 4



Specifications

Standards:	ISO/IEC 14443 Type A MIFARE®
Enclosure:	glass-fibre reinforced thermo-plastic, self-extinguishing
Operating principle:	RFID
Actuator:	MF1-S
Series-wiring:	Unlimited number of components
Connection:	Connector plug M12, 8-pole
Switching distances to IEC 60947-5-3:	
Typical switching distance s_{typ} :	12 mm
Assured switching distance s_{ao} :	10 mm
Assured switch-off distance s_{ar} :	15 mm
Repeat accuracy R:	< 0.5 mm
Ambient conditions:	
Ambient temperature:	-25 °C ... +70 °C
Storage and transport temperature:	-25 °C ... +85 °C
Protection class:	IP65 / IP67 to IEC 60529, IP69K to DIN 40050-9
Resistance to vibration:	10...55 Hz, Amplitude 1 mm
Resistance to shock:	30 g /11 ms
Switching frequency f:	1 Hz
Response time:	≤ 100 ms
Duration of risk:	≤ 200 ms
Time to readiness:	≤ 3 s
Electrical data:	
Rated operating voltage U_e :	24 VDC -15% / +10% (PELV to IEC 60204-1)
Minimum operating current I_m :	0.5 mA
Rated insulation voltage U_i :	32 V
No-load current I_o :	10 mA
Residual current I_r :	<0.5 mA
Protection class:	III
Degree of pollution:	3
Safety inputs IN1/IN2:	
Rated operating voltage U_{e1} :	24 VDC -15% / +10% (PELV unit)
Power consumption per input:	5 mA
Safety outputs GPIO_OUT1/GPIO_OUT2:	
	p-type, short-circuit proof
Operating current I_{e1} :	Max 0,2 A
Utilisation category:	24 VDC / 0.2A
Voltage drop:	$U_e < 2 V$
Safety classification:	
Standards:	EN ISO 13849-1, IEC 61508, IEC 62061, IEC 60947-5-3
PL:	e
Control Category:	4
PFH value:	$2.7 \times 10^{-10} / h$
PFD:	2.1×10^{-5}
SIL:	suitable for SIL 3 applications
Service life:	20 years

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Selection Guide:

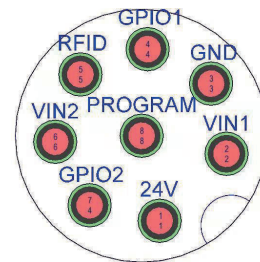
MF Code Mechanism 1: Low level** 2: High level** 3: Blank actuator***	D Output Configuration 1: Standard 7 outputs 2: With external device monitoring output 3: Inverse RFID output	L2 Connection Type L01: 0.1m cable L05: 0.5m cable L2: 2m cable L10: 10m cable M: M12 connector	S Actuator* 0: Sensor only S: Standard actuator E: Extended-range actuator
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* For actuator only, part number would be: MF1, MF2 or MF3 followed by -S or -E
 ** Low level means the sensor recognises all low level coded actuators. High level are defined by one to one correspondence
 *** Blank actuators sold separately can be programmed into high level actuators by putting them near the intended sensor and waiting for RFID_OUT Led blinking 5 times. Afterwards, The actuator can be recognised.

Wiring:

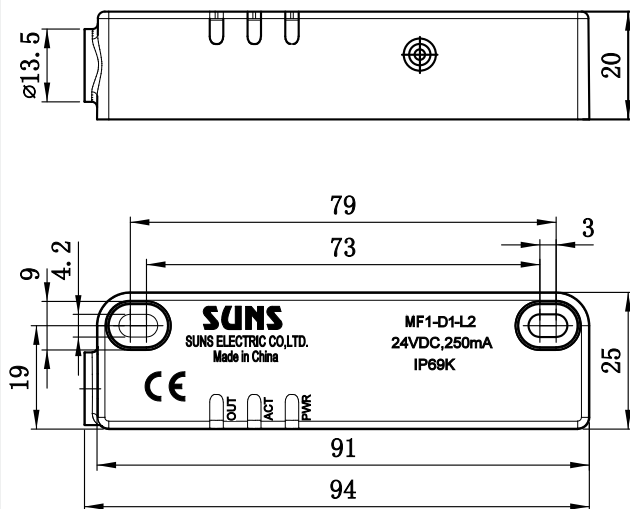
Brown	VCC (10-30V)
Blue	GND (Ground line)
Orange	GPIO_OUT1 (Safety output)
Red	GPIO_OUT2 (Safety output)
Green	RFID_OUT (RFID authentication through output)
White	IN1 (input 1)
Yellow	IN2 (input 2)
Black	PROGRAM (Programming mouth)

Pin Configuration:



Dimensions:

Sensor



Actuator

