DATASHEET

MZM 100 B ST2-SD2PREM-A

- Actuator monitored
- Connector M12, 8-pole
- Power to lock
- serial diagnostic output
- Automatic latching
- Solenoid interlocks with innovating and unique operating principle
- 40 mm x 179 mm x 40 mm
- Electronic contact-free, coded system
- Thermoplastic enclosure
- Max. length of the sensor chain 200 m
- 3 LEDs to show operating conditions
- Sensor technology permits an offset between actuator and interlock of ± 5 mm vertically and ± 3 mm horizontally
- Intelligent diagnosis
- Self-monitoring series-wiring
- Patented

Data

Ordering data

Product type description	MZM 100 B ST2-SD2PREM-A
Article number (order number)	101211153
EAN (European Article Number)	4030661389431
eCl@ss number, version 12.0	27-27-26-03
eCl@ss number, version 11.0	27-27-26-03
eCl@ss number, version 9.0	27-27-26-03
ETIM number, version 7.0	EC002593
ETIM number, version 6.0	EC002593

Approvals - Standards

Certificates	TÜV cULus UKCA

General data

Standards	EN ISO 13849-1 EN ISO 14119 EN IEC 60947-5-3 EN IEC 61508
Coding	Universal coding
Coding level according to EN ISO 14119	Low
Working principle	inductive
Housing material	Plastic, glass-fibre reinforced thermoplastic, self-extinguishing
Reaction time, maximum	150 ms
Duration of risk, maximum	150 ms
Gross weight	620 g

General data - Features

Power to lock	Yes
Actuator monitored	Yes
Serial diagnostics	Yes
Latching	Yes
Short circuit detection	Yes
Cross-circuit detection	Yes
Series-wiring	Yes
Safety functions	Yes
Integral system diagnostics, status	Yes
Number of safety contacts	2

Number of series-wiring of sensors	31

Safety classification

Standards	EN ISO 13849-1 EN IEC 61508

Safety classification - Interlocking function

Performance Level, up to	e
Category	4
PFH value	3.54 x 10^{-9} /h
Safety Integrity Level (SIL), suitable for applications in	3
Mission time	20 Year(s)

Mechanical data

Mechanical life, minimum	1,000,000 Operations
Note (Mechanical life)	Actuating speed ≤ 0.5 m/s Operations for door weights ≤ 5 kg
Holding force, typically	750 N
Holding force, guaranteed	500 N
Latching force, minimum	45 N
Latching force, maximum	115 N
Type of the fixing screws	2x M6
Tightening torque of the fixing screws	8 Nm

Mechanical data - Switching distances according EN IEC 60947-5-3

Assured switching distance "ON" S_{ao}	0 mm

Assured switching distance "OFF" S_{ar}	1 mm

Mechanical data - Connection technique

Length of sensor chain, maximum	200 m
Note (length of the sensor chain)	Cable length and cross-section change the voltage drop dependiing on the output current
Note (series-wiring)	Unlimited number of devices, oberserve external line fusing, max. 31 devices in case of serial diagnostic SD
Termination	Connector M12, 8-pole

Mechanical data - Dimensions

Length of sensor	40 mm
Width of sensor	40 mm
Height of sensor	177.5 mm

Ambient conditions

Degree of protection	IP65 IP67
Ambient temperature	-25 ... +55 °C
Storage and transport temperature, minimum	-25 °C
Storage and transport temperature, maximum	+70 °C
Relative humidity, minimum	30 %
Relative humidity, maximum	95 %
Note (Relative humidity)	non-condensing non-icing
Resistance to vibrations	10 ... 150 Hz, amplitude 0.35 mm / 5 g
Restistance to shock	30 g / 11 ms

Protection class	III
Permissible installation altitude above sea level, maximum	2,000 m

Ambient conditions - Insulation values

Rated insulation voltage U_i	32 VDC
Rated impulse withstand voltage U_{imp}	0.8 kV
Overvoltage category	III
Degree of pollution	3

Electrical data

Operating voltage	24 VDC -15 % / +10 % (stabilised PELV power supply)
No-load supply current I_0, typical	100 mA
Current consumption with magnet ON, average	350 mA
Current consumption with magnet ON, peak	550 mA / 10 ms
Rated operating voltage	24 VDC
Operating current	1,100 mA
Required rated short-circuit current	100 A
External wire and device fuse rating	2 A gG
Time to readiness, maximum	4,000 ms
Switching frequency, maximum	1 Hz

Electrical data - Magnet control

Designation, Magnet control	IN

Switching thresholds	-3 V ... 5 V (Low) 15 V ... 30 V (High)
Current consumption at 24 V	10 mA
Magnet switch-on time	100 %
Test pulse duration, maximum	5 ms
Test pulse interval, minimum	40 ms
Classification ZVEI CB24I, Sink	C0
Classification ZVEI CB24I, Source	C1 C2 C3

Electrical data - Safety digital inputs

Designation, Safety inputs	X1 and X2
Switching thresholds	−3 V ... 5 V (Low) 15 V ... 30 V (High)
Current consumption at 24 V	5 mA
Test pulse duration, maximum	1 ms
Test pulse interval, minimum	100 ms
Classification ZVEI CB24I, Sink	C1
Classification ZVEI CB24I, Source	C1 C2 C3

Electrical data - Safety digital outputs

Designation, Safety outputs	Y1 and Y2
Rated operating current (safety outputs)	250 mA
Design of control elements	short-circuit proof, p-type
Voltage drop U_d, maximum	1 V
Leakage current I_r, maximum	0.5 mA
Voltage, Utilisation category DC-13	24 VDC

Current, Utilisation category DC-13	0.25 A
Test pulse interval, typical	1000 ms
Test pulse duration, maximum	1 ms
Classification ZVEI CB24I, Source	C1
Classification ZVEI CB24I, Sink	C1

Electrical data - Diagnostic outputs

Design of control elements	short-circuit proof, p-type

Electrical data - Serial diagnostic SD

Designation, Serial diagnostic SD	OUT
Operation current	150 mA
Design of control elements	short-circuit proof, p-type
Wiring capacitance	50 nF

Status indication

Note (LED switching conditions display)	Operating condition: LED green Error / functional defect: LED red Supply voltage UB: LED green

Pin assignment

PIN 1	A1 Supply voltage UB
PIN 2	X1 Safety input 1
PIN 3	A2 GND
PIN 4	Y1 Safety output 1
PIN 5	OUT serial diagnostic output
PIN 6	X2 Safety input 2

PIN 7	Y2 Safety output 2
PIN 8	IN serial diagnostic input

Scope of delivery

Scope of delivery	Actuator must be ordered separately.

Accessory

Recommendation (actuator)	MZM 100-B1.1

Note

Note (General)	As long as the actuating unit is applied to the solenoid interlock, the unlocked safety guard can be relocked. In this case, the safety outputs are re-enabled, so that the safety guard must not be opened.

Ordering code

Product type description:
MZM 100(1)(2)(3)(4)(5)-A

(1)

without	Solenoid interlock monitored
B	Actuator monitored

(2)

ST2	Connector plug M12, 8-pole
ST	Connector plug M23, 8+1-pole

(3)

1P2P	1 p-type diagnostic output and 2 p-type safety outputs (only in connection with "Solenoid interlock monitored")

1P2PW	Similar to -1P2P, combined diagnostic signal: guard door closed and solenoid interlock locked (only in connection with "Solenoid interlock monitored")
1P2PW2	Similar to -1P2P, combined diagnostic signal: guard door closed and can be locked (only in connection with "Actuator monitored")
SD2P	serial diagnostic output and 2 p-type safety outputs

(4)

without	without latching (only in connection with "Solenoid interlock monitored")
R	electrical latching force, typically 30 N
RE	electrically adjustable latching force 30 ... 100 N

(5)

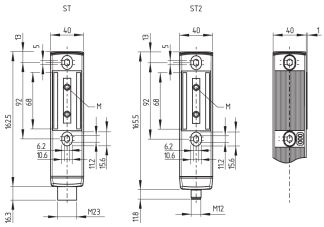
M	permanent magnet, typically 15 N

Pictures

Product picture (catalogue individual photo)

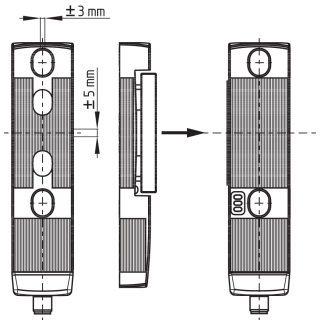
ID: kmzm1f35
| 1.9 MB | .jpg | 352.778 x 1222.375 mm - 1000 x 3465 px - 72 dpi
| 167.1 kB | .png | 74.083 x 256.469 mm - 210 x 727 px - 72 dpi
| 26.3 kB | .jpg | 35.631 x 123.472 mm - 101 x 350 px - 72 dpi

Dimensional drawing basic component



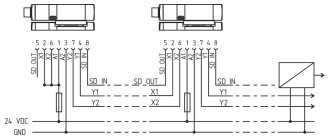
ID: 1mzm1g14
| 20.7 kB | .swf |
| 5.2 kB | .png | 74.083 x 50.8 mm - 210 x 144 px - 72 dpi
| 160.8 kB | .jpg | 352.778 x 242.358 mm - 1000 x 687 px - 72 dpi

Dimensional drawing miscellaneous



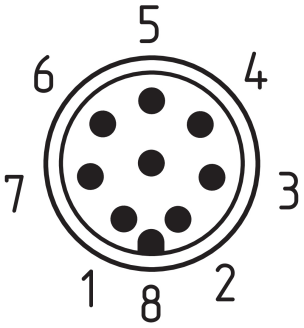
ID: 1mzm1g15
| 12.9 kB | .swf |
| 290.8 kB | .jpg | 352.425 x 362.656 mm - 999 x 1028 px - 72 dpi

Wiring example



ID: kmzm1l04
| 38.1 kB | .cdr |
| 83.1 kB | .jpg | 352.778 x 144.639 mm - 1000 x 410 px - 72 dpi

Contact arrangement



ID: km23-k8b
| 5.3 kB | .png | 73.731 x 79.728 mm - 209 x 226 px - 72 dpi
| 139.8 kB | .jpg | 352.778 x 380.647 mm - 1000 x 1079 px - 72 dpi