



## MZM 100 B ST2-1P2PW2RE-A

- Actuator monitored
- Connector M12, 8-pole
- Power to lock
- 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  $\pm 5$  mm vertically and  $\pm 3$  mm horizontally
- Intelligent diagnosis
- Self-monitoring series-wiring

## Data

### Ordering data

Product type description	MZM 100 B ST2-1P2PW2RE-A
Article number (order number)	101211070
EAN (European Article Number)	4030661389080
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
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## 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	700 g

## General data - Features

Power to lock	Yes
Actuator monitored	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

## Safety classification

Standards	EN ISO 13849-1 EN IEC 61508
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## Safety classification - Interlocking function

Performance Level, up to	e
Category	4
PFH value	$3.54 \times 10^{-9} /h$
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 $\leq 0.5$ m/s Operations for door weights $\leq 5$ kg
Holding force, typically	750 N
Holding force, guaranteed	500 N
Latching force, minimum	30 N
Latching force, maximum	100 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 depending on the output current
Note (series-wiring)	Unlimited number of devices, observe 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	-25 ... +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
Resistance 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,	C1
Source	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

Designation, Diagnostic outputs	OUT
Design of control elements	short-circuit proof, p-type
Voltage drop $U_d$ , maximum	2 V
Voltage, Utilisation category DC-13	24 VDC
Current, Utilisation category DC-13	0.05 A

## Status indication

Note (LED switching conditions display)	Operating condition: LED green Error / functional defect: LED red Supply voltage UB: LED green
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## 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 Diagnostic output
PIN 6	X2 Safety input 2
PIN 7	Y2 Safety output 2
PIN 8	IN Solenoid control

## Scope of delivery

Scope of delivery	Actuator must be ordered separately.
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## Accessory

Recommendation (actuator)	MZM 100-B1.1
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## 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.
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## Ordering code

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

(1)

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**without**

Guard locking monitored

**B**

Actuator monitored

(2)

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<b>ST</b>	Connector plug M23, 8+1-pole
<b>ST2</b>	Connector plug M12, 8-pole
(3)	
<b>1P2P</b>	1 p-type diagnostic output and 2 p-type safety outputs (only in connection with "Solenoid interlock monitored")
<b>1P2PW</b>	Similar to -1P2P, combined diagnostic signal: guard door closed and solenoid interlock locked (only in connection with "Solenoid interlock monitored")
<b>1P2PW2</b>	Similar to -1P2P, combined diagnostic signal: guard door closed and can be locked (only in connection with "Actuator monitored")
<b>SD2P</b>	serial diagnostic output and 2 p-type safety outputs
(4)	
<b>without</b>	without latching (only in connection with "Solenoid interlock monitored")
<b>R</b>	electrical latching force, typically 30 N
<b>RE</b>	adjustable latching force, typically 30 ... 100 N
(5)	
<b>M</b>	permanent magnet, typically 15 N

## Pictures

### Product picture (catalogue individual photo)



ID: kmzm1f25

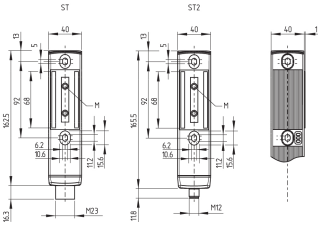
| 1.8 MB | .jpg | 352.778 x 1222.375 mm - 1000 x 3465 px - 72 dpi

| 171.6 kB | .png | 74.083 x 256.469 mm - 210 x 727 px - 72 dpi

| 25.5 kB | .jpg | 35.631 x 123.472 mm - 101 x 350 px - 72 dpi

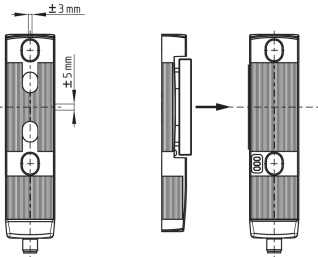
### Dimensional drawing basic component





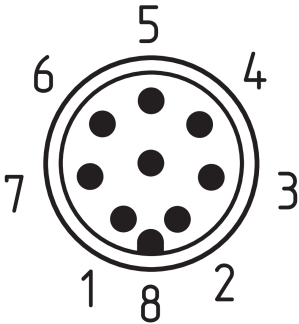
ID: 1mzm1g14  
 | 20.7 kB | .swf |  
 | 5.2 kB | .png | 74.083 x 50.8 mm - 210 x 144 px - 72 dpi  
 | 160.8 kB | .jpg | 352.778 x 242.358 mm - 1000 x 687 px - 72 dpi

## Dimensional drawing miscellaneous



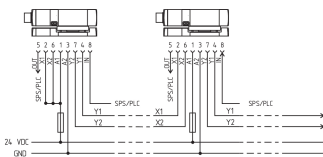
ID: 1mzm1g15  
 | 12.9 kB | .swf |  
 | 141.1 kB | .jpg | 352.778 x 283.986 mm - 1000 x 805 px - 72 dpi

## 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

## Wiring example



ID: kmzm1I03  
 | 37.0 kB | .cdr |  
 | 86.9 kB | .jpg | 352.778 x 161.572 mm - 1000 x 458 px - 72 dpi

Schmersal India Pvt. Ltd., Plot No - G-7/1, Ranjangaon MIDC, Tal. - Shirur, Dist.- Pune 412 220

The details and data referred to have been carefully checked. Images may diverge from original. Further technical data can be found in the manual. Technical amendments and errors possible.

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