



## MZM 100 B ST2-1P2PW2REM-A-DU

- Actuator monitored
- Connector M12, 8-pole
- Power to lock
- Automatic latching
- Solenoid interlocks (for the protection of man) 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
- Patented

## Data

### Ordering data

Product type description	MZM 100 B ST2-1P2PW2REM-A-DU
Article number (order number)	103044828
EAN (European Article Number)	4030661563954
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 EAC
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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
Enclosure material	Glass-fibre, reinforced thermoplastic
Gross weight	705 g
Time to readiness, maximum	4,000 ms
Reaction time, maximum	150 ms
Duration of risk, maximum	150 ms

## 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
Number of series-wiring of sensors	31

## 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 0.5 m/s Operations for door weights $\leq 5$ kg
Holding force, typically	750 N
Holding force, guaranteed	500 N
Latching force, minimum	45 N
Latching force, maximum	115 N

## Mechanical data - Connection technique

Termination	Connector M12, 8-pole
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## Mechanical data - Dimensions

Length of sensor	40 mm
Width of sensor	40 mm
Height of sensor	179 mm

## Ambient conditions

Degree of protection	IP65 IP67
Ambient temperature, minimum	-25 °C
Ambient temperature, maximum	+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 vibration to EN 60068-2-6	10 ... 150 Hz, amplitude 0.35 mm
Resistance to shock	30 g / 11 ms
Protection class	III

## Ambient conditions - Insulation values

Rated insulation voltage $U_i$	32 VDC
Rated impulse withstand voltage $U_{imp}$	0.8 kV
Overtoltage category	III
Degree of pollution to VDE 0100	3

## Electrical data

Operating voltage, minimum	20.4 VDC
Operating voltage, maximum	26.4 VDC
No-load supply current $I_0$ , maximum	600 mA
Operating current	1,000 mA 50 mA

Required rated short-circuit current to EN 60947-5-1 100 A

Note Cable length and cable section alter the voltage drop depending on the output current

Switching frequency, maximum 1 Hz

### Electrical data - Magnet control

Switching thresholds -3 V ... 5 V (Low)  
15 V ... 30 V (High)

Classification ZVEI CB24I, Sink C0

Classification ZVEI CB24I, Source C1  
C2  
C3

### Electrical data - Safety digital inputs

Switching thresholds -3 V ... 5 V (Low)  
15 V ... 30 V (High)

Classification ZVEI CB24I, Sink C1

Classification ZVEI CB24I, Source C1  
C2  
C3

### Electrical data - Safety digital outputs

Rated operating current (safety outputs) 250 mA

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

Classification ZVEI CB24I, Source C1

Classification ZVEI CB24I, Sink C1

## Electrical data - Diagnostic outputs

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	Actuators 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.

## Ordering code

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

(1)

<b>without</b>	Solenoid interlock monitored
<b>B</b>	Actuator monitored

(2)

<b>ST2</b>	Connector plug M12, 8-pole
<b>ST</b>	Connector plug M23, 8+1-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>	electrically adjustable latching force 30 ... 100 N

(5)

<b>M</b>	permanent magnet, typically 15 N
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## Pictures

## Product picture (catalogue individual photo)

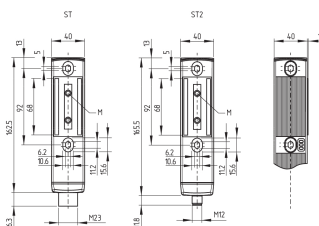


ID: kmzm1f25

| 273.6 kB | .jpg | 352.778 x 477.661 mm - 1000 x 1354 px - 72 dpi

| 22.1 kB | .png | 74.083 x 100.189 mm - 210 x 284 px - 72 dpi

## Dimensional drawing basic component



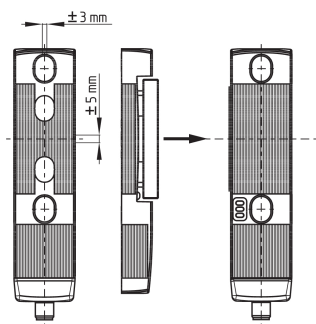
ID: 1mzm1g14

| 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

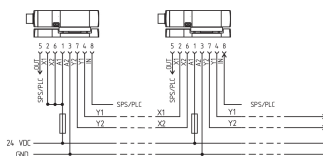


ID: 1mzm1g15

| 12.9 kB | .swf |

| 290.8 kB | .jpg | 352.425 x 362.656 mm - 999 x 1028 px - 72 dpi

## Wiring example



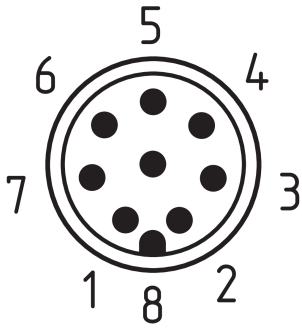
ID: kmzm1I03

| 37.0 kB | .cdr |

| 86.9 kB | .jpg | 352.778 x 161.572 mm - 1000 x 458 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

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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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