# **DATASHEET**





# **MZM 100 B ST2-1P2PW2R-A**

- 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 ST2-1P2PW2R-A

Article number (order number) 101206028

EAN (European Article Number) 4030661379678

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 623 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

## Safety classification - Interlocking function

Performance Level, up to

4 Category

PFH value  $3.54 \times 10^{-9} / h$ 

Safety Integrity Level (SIL), suitable for applications in

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 30 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<sub>ar</sub>

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

-25 ... +55 °C Ambient temperature

Storage and transport

-25 ... +70 °C

temperature

30 % Relative humidity, minimum

Relative humidity, maximum 95 %

Note (Relative humidity) non-condensing

non-icing

Resistance to vibrations  $10 \dots 150$  Hz, amplitude 0.35 mm / 5 g

Restistance to shock 30 g / 11 ms

Protection class Ш

Permissible installation altitude 2,000 m

above sea level, maximum

### **Ambient conditions - Insulation values**

32 VDC Rated insulation voltage U;

Rated impulse withstand

0.8 kV

 $voltage U_{imp}$ 

Overvoltage category Ш

Degree of pollution 3

#### **Electrical data**

24 VDC -15 % / +10 % (stabilised PELV power supply) Operating voltage

No-load supply current I<sub>0</sub>,

100 mA

typical

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

100 A

current

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, C1

Source C2

C3

## **Electrical data - Safety digital inputs**

Designation, Safety inputs X1 and X2

Switching thresholds  $-3 \text{ V} \dots 5 \text{ V} \text{ (Low)}$ 

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

С3

## **Electrical data - Safety digital outputs**

Designation, Safety outputs Y1 and Y2

Rated operating current (safety 250 mA

outputs)

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

Voltage drop U<sub>d</sub>, maximum 1 V

Leakage current I<sub>r</sub>, 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

 ${\sf Voltage\ drop\ U}_{\sf d},\,{\sf maximum}$ 

2 V

Voltage, Utilisation category

24 VDC

DC-13

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

# 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.

### **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 Guard locking monitored

**B** Actuator monitored

(2)

ST Connector plug M23, 8+1-pole

ST2	Connector plug M12, 8-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	adjustable latching force, typically 30 100 N

# **Pictures**

(5)

М

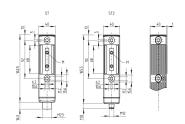
# **Product picture (catalogue individual photo)**



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

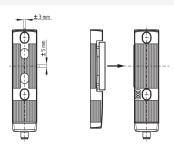
permanent magnet, typically 15 N

# **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

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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