

## MZM100ST-SD2P-A



- Patented
- Power to lock
- Automatic latching
- Intelligent diagnosis
- 40 mm x 179 mm x 40 mm
- Thermoplastic enclosure
- Guard locking monitored
- Connector M23, 8+1-pole
- serial diagnostic output
- Self-monitoring series-wiring
- 3 LEDs to show operating conditions
- Electronic contact-free, coded system
- Max. length of the sensor chain 200 m
- Solenoid interlocks (for the protection of man) with innovating and unique operating principle
- Sensor technology permits an offset between actuator and interlock of  $\pm 5$  mm vertically and  $\pm 3$  mm horizontally

### Data

#### Ordering data

MZM 100 ST-SD2P-A  
101183538

EAN (European Article Number) 4030661343433

eCl@ss number, Version 9.0 27-27-26-03

#### Approval - Standards

TÜV  
cULus  
EAC

#### General data

MZM 100  
IEC 61508

general information Universal coding

Coding level according to ISO 14119 Low

|                            |                                       |
|----------------------------|---------------------------------------|
| Active principle           | inductive                             |
| Enclosure material         | Glass-fibre, reinforced thermoplastic |
| Gross weight               | 650 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 |
| Guard locking monitored             | Yes |
| Serial diagnostics                  | Yes |
| Short circuit detection             | Yes |
| Short-circuit recognition           | 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 appraisal

IEC 61508

#### Safety appraisal - Interlocking

|                                              |                          |
|----------------------------------------------|--------------------------|
| Performance level, up to                     | e                        |
| Control category                             | 4                        |
| PFH-value                                    | $3.54 \times 10^{-9}$ /h |
| Safety Integrity Level (SIL), applicable for | 3                        |
| Mission Time                                 | 20 Year(s)               |

#### Mechanical data

|                            |                                                                      |
|----------------------------|----------------------------------------------------------------------|
| Mechanical life, minimum   | 1,000,000 Operations                                                 |
| Note (Mechanical lifetime) | Actuating speed < 0.5 m/s<br>Operations for door weights $\leq 5$ kg |
| Clamping force, typically  | 750 N                                                                |
| Clamping force, guaranteed | 500 N                                                                |

#### Mechanical data - Connection technique

|                    |                         |
|--------------------|-------------------------|
| Terminal Connector | Connector M23, 8+1-pole |
|--------------------|-------------------------|

### Mechanical data - Dimensions

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

### Ambient conditions

|                                            |                                                             |
|--------------------------------------------|-------------------------------------------------------------|
| Protection class                           | IP 65 to IEC/EN 60529<br>IP 67 to IEC/EN 60529              |
| 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<br>non-icing                                 |
| Resistance to vibrations to EN 60068-2-6   | 10 ... 150 Hz, amplitude 0.35 mm<br><br>30 g / 11 ms<br>III |

### Ambient conditions - Insulation value

|                                 |                            |
|---------------------------------|----------------------------|
| Rated impulse withstand voltage | 0.8 kV<br><br>III<br><br>3 |
|---------------------------------|----------------------------|

### Electrical data

|                                                      |                                                                                       |
|------------------------------------------------------|---------------------------------------------------------------------------------------|
| Operating voltage, minimum                           | 20.4 VDC                                                                              |
| Operating voltage, maximum                           | 26.4 VDC                                                                              |
| No-load current                                      | 600 mA                                                                                |
| Operating current                                    | 50 mA                                                                                 |
| Required rated short-circuit current to EN 60947-5-1 | 100 A                                                                                 |
| Switching frequency, maximum                         | 1 Hz                                                                                  |
| Note                                                 | Cable length and cable section alter the voltage drop depending on the output current |

### Electrical data - Solenoid control

-3 V ... 5 V (Low)  
15 V ... 30 V (High)  
C0  
C1  
C2  
C3

### Electrical data - Fail-safe digital inputs

-3 V ... 5 V (Low)  
15 V ... 30 V (High)  
C1  
C1  
C2  
C3

### Electrical data - Fail-safe digital outputs

|                                             |        |
|---------------------------------------------|--------|
| Rated operating current<br>(safety outputs) | 250 mA |
| Voltage drop $U_d$ , maximum                | 1 V    |
| Current leakage                             | 0.5 mA |
| Voltage, Utilisation category<br>DC13       | 24 VDC |
| Current, Utilisation category<br>DC13       | 0.3 A  |
|                                             | C1     |
|                                             | C1     |

### Electrical data - Diagnostic output

|                                       |        |
|---------------------------------------|--------|
| Voltage drop $U_d$ , maximum          | 2 V    |
| Voltage, Utilisation category<br>DC13 | 24 VDC |
| Current, Utilisation category<br>DC13 | 0.1 A  |

### Status indication

|                                            |                                    |
|--------------------------------------------|------------------------------------|
| Note (LED switching<br>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   |
| PIN 9 | without function             |

Scope of delivery

|                      |                                       |
|----------------------|---------------------------------------|
| Included in delivery | Actuators must be ordered separately. |
|----------------------|---------------------------------------|

Accessory

MZM 100-B1.1

Notes

|                |                                                                                                                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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)

**ST** Connector M23, (8+1 pole)

**ST2** Connector M12, 8-pole

(2)

**1P2PW** 1 diagnostic output and 2 safety outputs, p-type, combined diagnostic signal: guard system closed and interlock locked

**SD2P** serial diagnostic output and 2 p-type safety outputs

(3)

**without** without latching force

**RE** electrically adjustable latching force 30 ... 100 N

(4)

**M** Permanent magnet approx. 30 N

(1)

**ST** Connector M23, (8+1 pole)

**ST2** Connector M12, 8-pole

(2)

- 1P2PW2**

1 diagnostic output and 2 safety outputs, all p-type and combined diagnostic signal: safety guard closed and solenoid interlock locked.
- SD2P**

serial diagnostic output and 2 p-type safety outputs

(3)

- M**

Permanent magnet approx. 30 N
- NB, MBN, BN**

Actuator monitored
- RE**

electrically adjustable latching force 30 ... 100 N
- A**

Power to lock

Pictures

Photo/Product/Catalogue

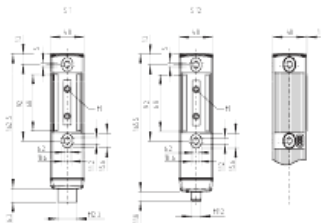


ID: kmzm1f08

| 1,4 MB | .jpg | 216.253 x 833.261 mm - 613 x 2362  
Pixel - 72 dpi

| 235,7 kB | .png | 74.083 x 285.397 mm - 210 x 809  
Pixel - 72 dpi

Dimension/Product/Basic

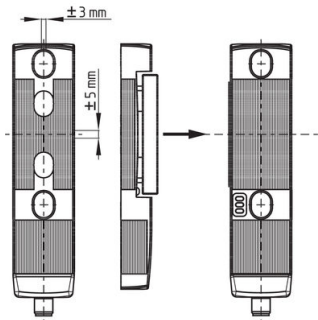


ID: 1mzm1g14

| 160,8 kB | .jpg | 352.778 x 242.358 mm - 1000 x 687  
Pixel - 72 dpi

| 5,2 kB | .png | 74.083 x 50.8 mm - 210 x 144 Pixel -  
72 dpi

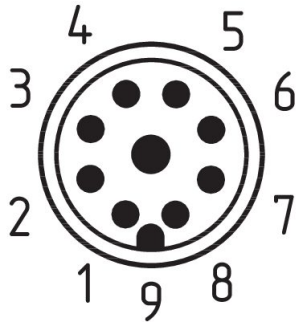
Dimension/Other



ID: 1mzm1g15

| 290,8 kB | .jpg | 352.425 x 362.656 mm - 999 x 1028  
Pixel - 72 dpi

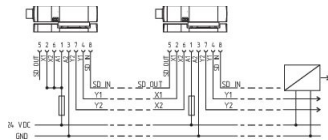
Graphic/Product/PIN



ID: km23-k9d

| 18,5 kB | .cdr |

## Graphic/Product/Wiring



ID: kmzm1l04

| 38,1 kB | .cdr |

| 83,1 kB | .jpg | 352.778 x 144.639 mm - 1000 x 410

Pixel - 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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