



## AZM 161 Z ST2-AS RA

- Solenoid supply aus AS interface
- Guard locking monitored
- Manual release
- Solenoid interlock
- Thermoplastic enclosure
- High holding force 2000
- 130 mm x 90 mm x 30 mm
- Interlock with protection against incorrect locking.
- Double-insulated
- Long life
- Integrated AS-Interface

## Data

### Ordering data

|                               |               |
|-------------------------------|---------------|
| EAN (European Article Number) | 4030661405629 |
| eCl@ss number, Version 9.0    | 27-27-26-03   |
| eCl@ss number, Version 11.0   | 27-27-26-03   |

### Approval - Standards

|              |                                |
|--------------|--------------------------------|
| Certificates | TÜV<br>cULus<br>ASi-SaW<br>EAC |
|--------------|--------------------------------|

### General data

|                        |                                                                   |
|------------------------|-------------------------------------------------------------------|
| Standards              | IEC 61508<br>EN 60947-5-1<br>EN 62026-2<br>EN ISO 13849-1         |
| Active principle       | electromechanical                                                 |
| Enclosure material     | Plastic, glass-fibre reinforced thermoplastic, self-extinguishing |
| Gross weight           | 465 g                                                             |
| Reaction time, maximum | 100 ms                                                            |

### General data - Features

|                                     |     |
|-------------------------------------|-----|
| Power to lock                       | Yes |
| Guard locking monitored             | Yes |
| Manual release                      | Yes |
| Integral System Diagnostics, status | Yes |
| Number of actuating directions      | 3   |

### Safety appraisal

|                                                            |                                          |
|------------------------------------------------------------|------------------------------------------|
| Standards                                                  | IEC 61508                                |
| Performance level, up to                                   | c                                        |
| Control category to EN13849                                | 1                                        |
| PFH-value                                                  | $1.14 \times 10^{-6} / \text{h}$         |
| Note (PFH-value)                                           | up to max. 100,000 switching cycles/year |
| Safety Integrity Level (SIL), suitable for applications in | 1                                        |
| Mission Time                                               | 20 Year(s)                               |

### Safety appraisal - Fault exclusion

|                                                            |                                                                                                                                                                               |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Please note:                                               | Einsetzbar wenn ein Fehlerausschluss für eine gefahrbringende Beschädigung der 1-kanaligen Mechanik zulässig ist und ein ausreichender Manipulationsschutz gewährleistet ist. |
| Performance Level, up to                                   | d                                                                                                                                                                             |
| Control category to EN13849                                | 3                                                                                                                                                                             |
| PFH-value                                                  | $1.01 \times 10^{-7}$ /h                                                                                                                                                      |
| Note (PFH-value)                                           | up to max. 100,000 switching cycles/year                                                                                                                                      |
| Safety Integrity Level (SIL), suitable for applications in | 2                                                                                                                                                                             |
| Mission time                                               | 20 Year(s)                                                                                                                                                                    |

### Mechanical data

|                                          |                      |
|------------------------------------------|----------------------|
| Mechanical life, minimum                 | 1,000,000 Operations |
| Actuating play in direction of actuation | 5.5 mm               |
| Clamping force                           | 2,000 N              |
| Latching force                           | 30 N                 |
| Actuating speed, maximum                 | 2 m/s                |

### Mechanical data - Connection technique

|                    |                                        |
|--------------------|----------------------------------------|
| Terminal Connector | Connector plug M12, 4-pole, (A-coding) |
| Connector position | Right                                  |

### Mechanical data - Dimensions

|                  |        |
|------------------|--------|
| Length of sensor | 30 mm  |
| Width of sensor  | 130 mm |
| Height of sensor | 90 mm  |

### Ambient conditions

|                      |                  |
|----------------------|------------------|
| Degree of protection | IP67 to EN 60529 |
|----------------------|------------------|

|                                            |                                     |
|--------------------------------------------|-------------------------------------|
| Ambient temperature, minimum               | -25 °C                              |
| Ambient temperature, maximum               | +60 °C                              |
| Storage and transport temperature, minimum | -25 °C                              |
| Storage and transport temperature, maximum | +85 °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 Hz ... 150 Hz, amplitude 0.35 mm |
| Resistance to shock                        | 30 g / 11 ms                        |
| Protection rating                          | II                                  |

### Ambient conditions - Insulation value

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

### Electrical data

|                     |          |
|---------------------|----------|
| Switching frequency | 1,000 /h |
|---------------------|----------|

### Electrical data - AS Interface

|                                     |          |
|-------------------------------------|----------|
| AS-i Operating voltage, minimum     | 26.5 VDC |
| AS-i Operating voltage AS-i maximum | 31.6 VDC |

Note (AS-i Operatingvoltage)    Protection against polarity reversal

AS-i Current consumption,  
maximum                      250 mA

## Electrical data - AS-Interface specification

|                                  |                                                                                                     |
|----------------------------------|-----------------------------------------------------------------------------------------------------|
| AS-i Specification               | Safety-Slave                                                                                        |
| AS-i Version                     | V 2.1                                                                                               |
| AS-i Profile                     | S-7.B.F.E                                                                                           |
| AS-i, IO-Code                    | 0x7                                                                                                 |
| AS-i, ID-Code                    | 0xB                                                                                                 |
| AS-i, ID-Code1                   | 0xF                                                                                                 |
| AS-i, ID-Code2                   | 0xE                                                                                                 |
| AS-i Input, Channel 1            | Data bits DI 0 / DI 1 = dynamic code transmission                                                   |
| AS-i Input, Channel 2            | Data bits DI 2 / DI 3 = dynamic code transmission                                                   |
| AS-i Outputs, DO 0               | Solenoid control                                                                                    |
| AS-i Outputs, DO 1               | No Function                                                                                         |
| AS-i Outputs, DO 2               | No Function                                                                                         |
| AS-i Outputs, DO 3               | No Function                                                                                         |
| AS-i Parameter bits, P0          | Actuator detected                                                                                   |
| AS-i Parameter bits, P1          | Solenoid interlock locked                                                                           |
| AS-i Parameter bits, P2          | Magnet voltage in tolerance range                                                                   |
| AS-i Parameter bits, P3          | Error message - locking/unlocking of the solenoid interlock blocked                                 |
| Note (AS-i Parameter bits)       | Set the parameter outputs to "1111" (0xF)<br>FID: periphery error                                   |
| AS-i Input module address        | 0                                                                                                   |
| Note (AS-i Input module address) | Preset to address 0, can be changed through AS-interface bus master or hand-held programming device |

## Status indication

|                                         |                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Note (LED switching conditions display) | (1) LED yellow: Channel 2 / AS-i SaW Bit 2.3                                                                          |
|                                         | (2) LED green/red (AS-i duo LED): Supply voltage / communication error / slave address = 0 / periphery error detected |
|                                         | (3) LED yellow: Channel 1 / AS-i SaW Bit 0.1                                                                          |

## Other data

|                     |                      |
|---------------------|----------------------|
| Note (applications) | sliding safety guard |
|                     | removable guard      |
|                     | hinged safety guard  |

## Pin assignment

|       |                |
|-------|----------------|
| PIN 1 | AS-i +         |
| PIN 2 | Aux - (P)      |
| PIN 3 | AS-Interface - |
| PIN 4 | Aux + (P)      |

## Scope of delivery

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

## Notes

|                       |                                                                                                                                                                                                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note (General)        | Interlocks with the power to lock principle may only be used in special cases after a thorough evaluation of the accident risk, since the guarding device can immediately be opened on failure of the electrical power supply or when the main switch is opened. |
| Note (Manual release) | For maintenance, installation, etc.                                                                                                                                                                                                                              |
|                       | For manual release using M5 triangular key, available as accessory                                                                                                                                                                                               |

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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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