

Technical data sheet

Muting interface

Part no.: 549992

MSI-MD-FB

Contents

- Technical data
- Electrical connection



For illustration purposes only



Technical data

Basic data

| | |
|-------------|--|
| Series | MSI-MD-FB |
| Application | Muting interface for muting applications in combination with standard variants of the MLC and ELC safety light curtains, as well as MLD multiple light beam safety devices |

Functions

| | |
|-----------|---|
| Functions | Muting enable function Muting-timeout extension Sequence controlled 2-sensor muting Sequence controlled 4-sensor muting Timing controlled 2-sensor muting |
| Restart | Automatic Manual |

Characteristic parameters

| | |
|-----------------------------|--------------------------|
| SIL | 3, IEC 61508 |
| SILCL | 3, IEC/EN 62061 |
| Performance Level (PL) | e, EN ISO 13849-1 |
| PFH _D | 2.5E-09 per hour |
| Mission time T _M | 20 years, EN ISO 13849-1 |
| Category | 4, EN ISO 13849-1 |

Electrical data

| | |
|--------------------|---|
| Protective circuit | Overvoltage protection Polarity reversal protection Short circuit protected |
|--------------------|---|

Performance data

| | |
|-------------------------------|---|
| Supply voltage U _B | 24 V, DC, -20 ... 20 %, Compensation necessary at 20 ms voltage dip, min. 250 mA (+ external loads) |
| Current consumption, max. | 150 mA, Without external load |
| Power consumption, max. | 3.6 W |
| Residual ripple | -5 ... 5 %, From U _B |

Inputs

| | |
|---|------------|
| Number of safety-related switching inputs | 2 Piece(s) |
| Number of digital switching inputs | 8 Piece(s) |

Switching inputs

| | |
|------------------------------|-------------------------|
| Type | Digital switching input |
| Switching voltage high, min. | 27 V |
| Switching voltage low, max. | 2.5 V |
| Switching voltage, type. | 24 V |
| Voltage type | DC |

Digital switching input 1

| | |
|----------|--|
| Function | Control input for Reset Control input, reset of the control |
|----------|--|

Digital switching input 2

| | |
|----------|---|
| Function | Control input, muting sensor 1 of the control |
|----------|---|

Digital switching input 3

| | |
|----------|---|
| Function | Control input, muting enable/muting timeout |
|----------|---|

Digital switching input 4

| | |
|----------|-------------------------|
| Function | Control input for Reset |
|----------|-------------------------|

Digital switching input 5

| | |
|----------|-----------------------------------|
| Function | Control input for muting sensor 1 |
| | Control input for muting sensor 2 |
| | Control input for muting sensor 3 |
| | Control input for muting sensor 4 |

Safety-related switching inputs

| | |
|------------------------------|------------------------|
| Type | Safety switching input |
| Voltage type | DC |
| Switching voltage high, min. | 27 V |
| Switching voltage low, max. | 18 V |
| Switching voltage, type. | 24 V |

Outputs

| | |
|--|------------|
| Number of safety-related switching outputs (OSSDs) | 2 Piece(s) |
| Number of digital switching outputs | 3 Piece(s) |

Safety-related switching outputs

| | |
|------------------------------|--------------------------------------|
| Type | Safety-related switching output OSSD |
| Switching voltage high, min. | 18 V |
| Switching voltage low, max. | 2.5 V |
| Switching voltage, type. | 24 V |
| Voltage type | DC |
| Switching current, max. | 380 mA |
| Load inductivity | 2,000 µH |
| Load capacity | 0.3 µF |
| Residual current, max. | 0.2 mA |
| Residual current, type. | 0.002 mA |

Safety-related switching output 1

| | |
|-------------------|-----------------|
| Switching element | Transistor, PNP |
|-------------------|-----------------|

Safety-related switching output 2

| | |
|-------------------|-----------------|
| Switching element | Transistor, PNP |
|-------------------|-----------------|

Switching outputs

| | |
|--------------------------|--------------------------|
| Type | Digital switching output |
| Switching voltage, type. | 24 V |
| Voltage type | DC |

Switching output 1

| | |
|-------------------|-----------------------|
| Switching element | Transistor, PNP |
| Function | "Error" signal output |

Switching output 2

| | |
|-------------------|-----------------------------|
| Switching element | Transistor, PNP |
| Function | ReadyForReset signal output |

Switching output 3

| | |
|-------------------|------------------------------|
| Switching element | Transistor, PNP |
| Function | "Muting state" signal output |

Time behavior

| | |
|--------------------|--------|
| Restart delay time | 100 ms |
| Regression delay | 5 ms |

Connection

| | |
|-----------------------|------------|
| Number of connections | 8 Piece(s) |
|-----------------------|------------|

Technical data

Connection 1

| | |
|--------------------|-------------------|
| Function | Machine interface |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 8 -pin |

Connection 2

| | |
|--------------------|----------------------------|
| Function | Connection - safety sensor |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |

Connection 3

| | |
|--------------------|-------------------------------|
| Function | Connection - muting indicator |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |

Connection 4

| | |
|--------------------|----------------------------------|
| Function | Connection - acknowledgment unit |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |

Connection 5

| | |
|--------------------|-------------------------------------|
| Function | Connections for four muting sensors |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |

Connection 6

| | |
|--------------------|-------------------|
| Function | Service interface |
| Type of connection | USB |
| Connector type | USB 2.0 Micro-B |

Cable properties

| | |
|--|----------------------|
| Permissible conductor cross section, type. | 0.25 mm ² |
| Length of connection cable, max. | 50 m |

Mechanical data

| | |
|-----------------------|--|
| Dimension (W x H x L) | 60 mm x 38.3 mm x 225 mm |
| Net weight | 560 g |
| Housing color | Yellow |
| Type of fastening | Mounting plate Mounting plate with L-angle Through-hole mounting |

Operation and display

| | |
|-------------------------------------|-----------------------------|
| Type of display | LED |
| Number of LEDs | 14 Piece(s) |
| Operational controls | DIP switch |
| Function of the operational control | Selection of operating mode |

Environmental data

| | |
|------------------------------------|---------------|
| Ambient temperature, operation | -30 ... 60 °C |
| Ambient temperature, storage | -40 ... 70 °C |
| Relative humidity (non-condensing) | 0 ... 95 % |

Certifications

| | |
|--|----------------------|
| Degree of protection | IP 67 |
| Protection class | III |
| Approvals | c UL US TÜV Süd |
| Test procedure for oscillation in accordance with standard | IEC/EN 60068-2-6 |
| Shock resistance | 100 m/s ² |
| Test procedure for shock in accordance with standard | IEC/EN 60068-2-6 |
| US patents | US 6,418,546 B |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85369095 |
| ECLASS 5.1.4 | 27371811 |
| ECLASS 8.0 | 27371811 |
| ECLASS 9.0 | 27371811 |
| ECLASS 10.0 | 27371811 |
| ECLASS 11.0 | 27371819 |
| ECLASS 12.0 | 27371819 |
| ECLASS 13.0 | 27371819 |
| ECLASS 14.0 | 27371819 |
| ECLASS 15.0 | 27371819 |
| ECLASS 16.0 | 27371819 |
| ETIM 5.0 | EC001448 |
| ETIM 6.0 | EC001448 |
| ETIM 7.0 | EC001448 |
| ETIM 8.0 | EC001449 |
| ETIM 9.0 | EC001449 |
| ETIM 10.0 | EC001449 |
| UNSPSC 26.08 | 32151800 |

Electrical connection

Connection 1

SC

| | |
|--------------------|-------------------|
| Function | Machine interface |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 8 -pin |
| Encoding | A-coded |

Connection 2

LC/LG

| | |
|--------------------|----------------------------|
| Function | Connection - safety sensor |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Connection 3

ML

| | |
|--------------------|-------------------------------|
| Function | Connection - muting indicator |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Connection 4

RES

| | |
|--------------------|----------------------------------|
| Function | Connection - acknowledgment unit |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Connection 5

MS1 ... MS4

| | |
|--------------------|-------------------------------------|
| Function | Connections for four muting sensors |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Connection 6

| | |
|--------------------|-------------------|
| Function | Service interface |
| Type of connection | USB |