



**Part no.: 547931**  
**MSI-TRMB-01**  
**Safety relay**



Figure can vary

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## Technical data

<b>Basic data</b>	
Series	MSI-TRM
<b>Functions</b>	
Functions	Start/restart interlock (RES)
Restart	Manual Automatic
<b>Characteristic parameters</b>	
Type	4, IEC/EN 61496
SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	Up to and including e, EN ISO 13849-1
MTTF <sub>d</sub>	100 years, EN ISO 13849-1
PFH <sub>D</sub>	0.0000000215 per hour
PFH <sub>D</sub>	2.15E-09 per hour
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1
Category	4, EN ISO 13849
<b>Electrical data</b>	
Protective circuit	Short circuit protected Polarity reversal protection
<b>Performance data</b>	
Supply voltage	24 V, DC, -20 ... 20 %
Current consumption, max.	200 mA
Power consumption, max.	3 W
Residual ripple	0 ... 15 %
Fuse	External with max. 3 A
<b>Inputs</b>	
Number of safety-related switching inputs	2 Piece(s)
Number of digital switching inputs	2 Piece(s)
<b>Switching inputs</b>	
Type	Digital switching input
Switching voltage high, min.	18.2 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	23 V
Voltage type	DC
<b>Digital switching input 1</b>	
Function	Control input for start/restart interlock (RES)
<b>Digital switching input 2</b>	
Function	Control input for start/restart interlock (RES)
<b>Safety-related switching inputs</b>	
Type	Safety switching input
Voltage type	DC
Switching voltage high, min.	18.2 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	23 V

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### 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
Voltage type	AC/DC

#### Safety-related switching output 1

Switching element	Relay, NO
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#### Safety-related switching output 2

Switching element	Relay, NO
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#### Switching outputs

Type	Digital switching output
Switching voltage high, min.	18.2 V
Switching voltage low, max.	2.5 V
Switching voltage, typ.	23 V
Voltage type	DC

#### Switching output 1

Switching element	Transistor, PNP
Function	Switching output

#### Switching output 2

Switching element	Transistor, PNP
Function	Switching output

#### Switching output 3

Switching element	Transistor, PNP
Function	"Error" signal output

### Timing

Response time	30 ms
Sensor response time on test request	0.5 ... 8.5 ms

### Connection

Number of connections	1 Piece(s)
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#### Connection 1

Type of connection	Terminal
Function	Voltage supply Connection to receiver Connection to transmitter
Type of terminal	Screw terminal
No. of pins	16 -pin

#### Cable properties

Connection cross sections	0.2 to 1.5 mm <sup>2</sup>
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### Mechanical data

Dimension (W x H x L)	22.5 mm x 99 mm x 114.1 mm
Housing material	Plastic, Unreinforced polyamide PA
Net weight	155 g
Housing color	Gray
Type of fastening	Snap-on mounting

### Operation and display

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Type of display	LED
Number of LEDs	6 Piece(s)

**Environmental data**

Ambient temperature, operation	-25 ... 55 °C
Ambient temperature, storage	-25 ... 75 °C
Relative humidity (non-condensing)	0 ... 75 %

**Certifications**

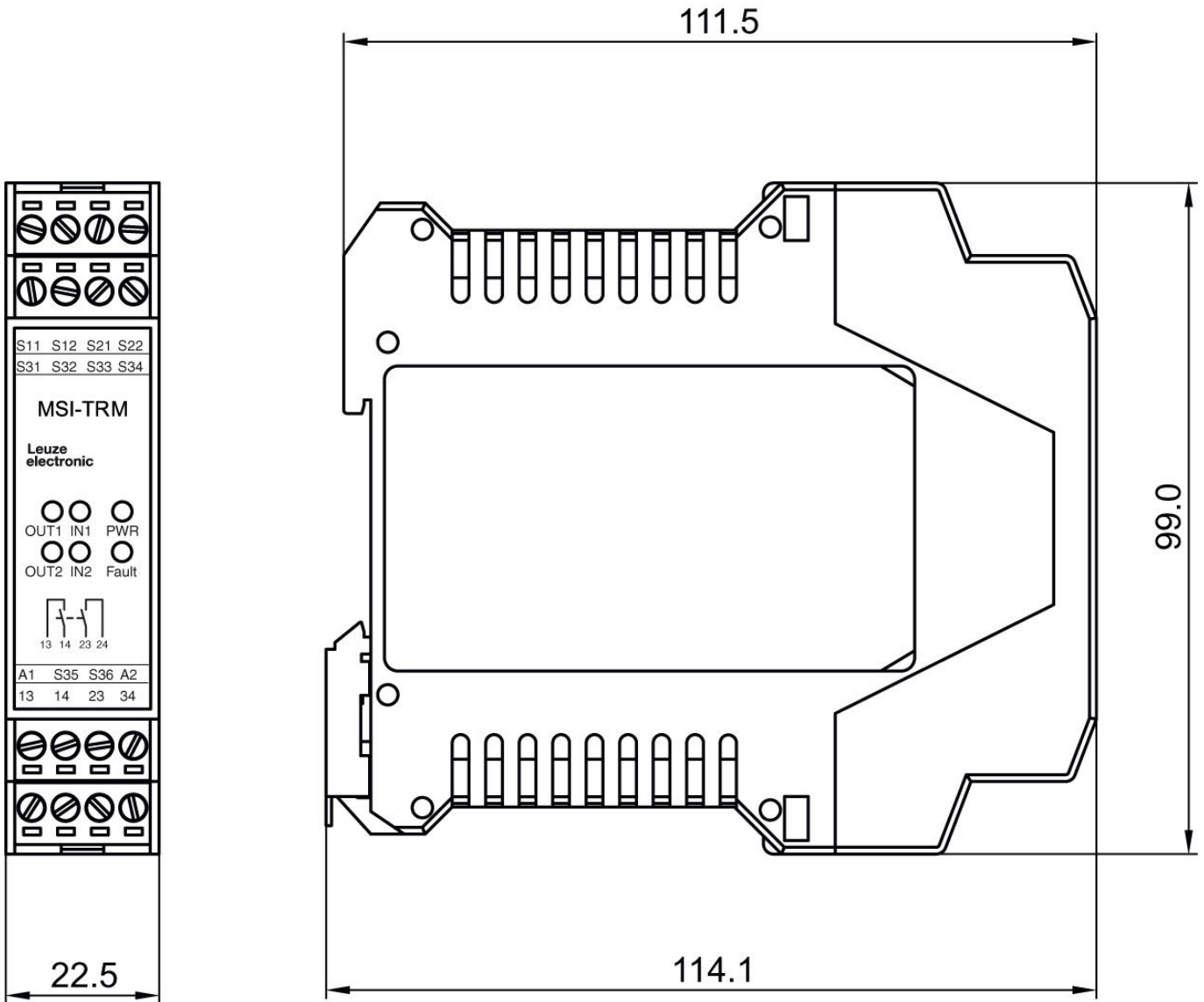
Degree of protection	IP 20 (terminals) IP 20 (housing)
Protection class	III
Certifications	c UL US

**Classification**

eCl@ss 8.0	27371819
eCl@ss 9.0	27371819
ETIM 5.0	EC001449

## Dimensioned drawings

All dimensions in millimeters



### Electrical connection

Connection 1	
Type of connection	Terminal
Function	Voltage supply Connection to receiver Connection to transmitter
Type of terminal	Screw terminal
No. of pins	16 -pin

Terminal	Assignment
5	+24V
6	GND
7	Safety ON
8	ERROR
13	EDM
14	Test (transmitter)

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Terminal	Assignment
15	Receiver
16	RES/Start
21	Reset
22	WA
23	MODE
24	Auto WA
29	OSSD1
30	OSSD2
31	SSD1
32	SSD2

## Operation and display

### LEDs

LED	Display	Meaning
1		
2		
3		
4		
5		
6		

## Notes

### Observe intended use!

- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.