Technical data sheet
Safety relay
Part no.: 547931
MSI-TRMB-01

Figure can vary

Contents

Technical data

Basic data

Series	MSI-TRM

Functions

Functions	Start/restart interlock (RES)
Restart	Automatic
	Manual

Characteristic parameters

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
$MTTF_d$	100 years, EN ISO 13849-1
PFH_D	2.15E-09 per hour
Mission time T_M	20 years, EN ISO 13849-1
Category	4, EN ISO 13849

Electrical data

Protective circuit	Polarity reversal protection
	Short circuit protected

Performance data

Supply voltage U_B	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

Inputs

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

Switching inputs

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

Digital switching input 1

Function	Control input for start/restart interlock (RES)

Digital switching input 2

Function	Control input for start/restart interlock (RES)

Safety-related switching inputs

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

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

Safety-related switching output 2

Switching element	Relay, NO

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)

Connection 1

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

Cable properties

Connection cross sections	0.2 to 1.5 mm²

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

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

Technical data

Environmental data

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

Certifications

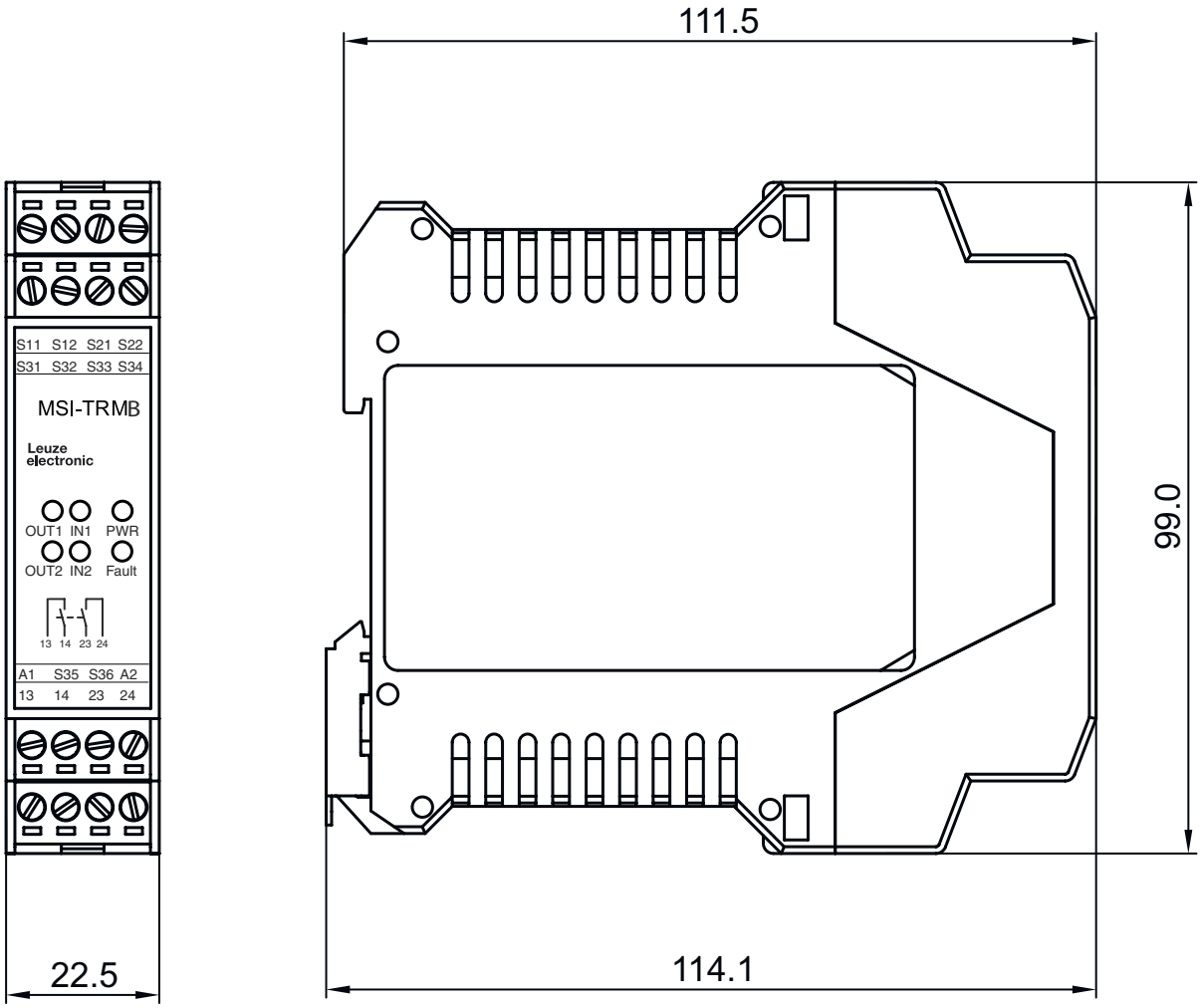
Degree of protection	IP 20 (housing)
	IP 20 (terminals)
Protection class	III
Certifications	c UL US

Classification

Customs tariff number	85371098
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

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

Pin	Pin assignment
	S11
1	OUT 1
	S12
2	IN1
	S21
3	OUT 2
	S22
4	IN1
	S31
5	ERROR
	S32
6	n.c.
	S33
7	RES/Start
	S34
8	RES/Start
	A1
9	+24V
	S35
10	WA
	S36
11	WA
	A2
12	GND
	13
13	OSSD1
	14
14	OSSD1
	23
15	OSSD2
	24
16	OSSD2

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.