

Technical data sheet

Safety relay

Part no.: 50133025

MSI-SR-ES20-03

Contents

- Technical data
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- Electrical connection
- Circuit diagrams
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Figure can vary



Technical data

Basic data

Series	MSI-SR-ES20
Application	Base device for E-Stop applications

Functions

Functions	Monitoring of E-Stop circuits
	Monitoring of position switches
	Monitoring of proximity switches
Restart	Automatic
	Manual

Characteristic parameters

SIL	2, IEC 61508
SILCL	2, IEC/EN 62061
Performance Level (PL)	d, EN ISO 13849-1
PFH _D	2E-07 per hour
Mission time T _M	20 years, EN ISO 13849-1
Category	3, EN ISO 13849

Electrical data

Supply circuit

Nominal voltage U_N 24 V AC/DC

Nominal frequency 50 ... 60 Hz

Rated control supply voltage U_s at AC 60 Hz 20.4 V

Rated control supply voltage U_s at AC 50 Hz 26.4 V

Max. rated control supply voltage at AC 50 Hz 26.4 V

Min. rated control supply voltage U_s at AC 50 Hz 20.4 V

Min. rated control supply voltage U_s at DC 20.4 V

Max. rated control supply voltage at DC 26.4 V

Min. rated control supply voltage at DC 20.4 V

Rated power AC 2 V·A

Rated power DC 1 W

Galvanic isolation between supply and control circuit No

Output circuit

Number of outputs, safety-oriented, undelayed, contact-based 2 Piece(s)

Release current paths NO

Contact material Ag alloy

Usage category AC-15 (NO contact) Ue 230V, Ie 3A

Usage category DC-13 (NO contact) Ue 24V, Ie 3A

Short circuit protection (NO contact) gG class safety fuse 6A, melting integral

Nominal switching voltage, release current paths AC 240 V

Nominal switching voltage, release current paths DC 50 V

Max. thermal continuous current I_{th}, release current paths 6 A

Max. total current I² of all current paths 72 A²

Mechanical life time 100,000,000 switching cycles

Control circuit

Evaluation of the inputs	One-channel
Nominal output voltage DC	24 V
Input current at the control inputs (safety circuit/reset circuit)	50 mA
Max. peak current at the control inputs (safety circuit/reset circuit)	70 mA
Max. cable resistance, per channel	$\leq (5 + (1.333 \times U_B / U_N - 1) \times 200) \Omega$
Minimum switch-on time	30 ms
Response time (automatic start t _{A2})	70 ms
Response time (manual start t _{A1})	20 ms
Release time t _R	70 ms
Recovery time t _w	200 ms

Connection

Number of connections	1 Piece(s)
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Connection 1

Function	Signal IN
	Signal OUT
	Voltage supply

Type of connection Terminal

Type of terminal Spring-cage terminal

No. of pins 8 -pin

Cable properties

Connection cross sections	2 x 0.2 to 1.5 mm ² , wire
	2 x 0.2 to 1.5 mm ² , wire
	2 x 0.25 to 1.5 mm ² , wire with wire-end sleeve

Mechanical data

Dimension (W x H x L)	22.5 mm x 96.5 mm x 91.5 mm
Net weight	120 g
Housing color	Gray
Type of fastening	Snap-on mounting

Certifications

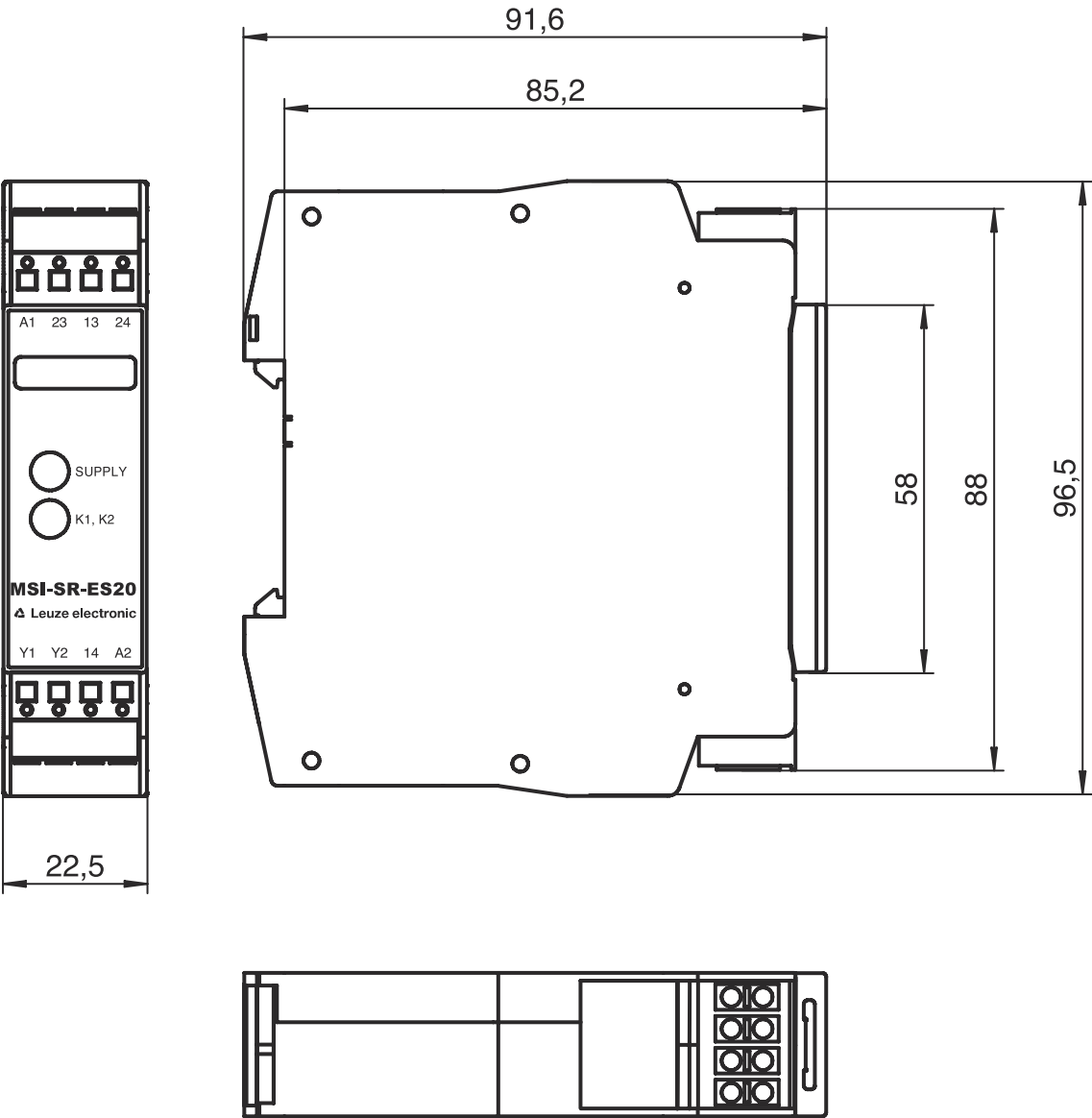
Certifications	c UL US
	TÜV Rheinland

Classification

Customs tariff number	85364900
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

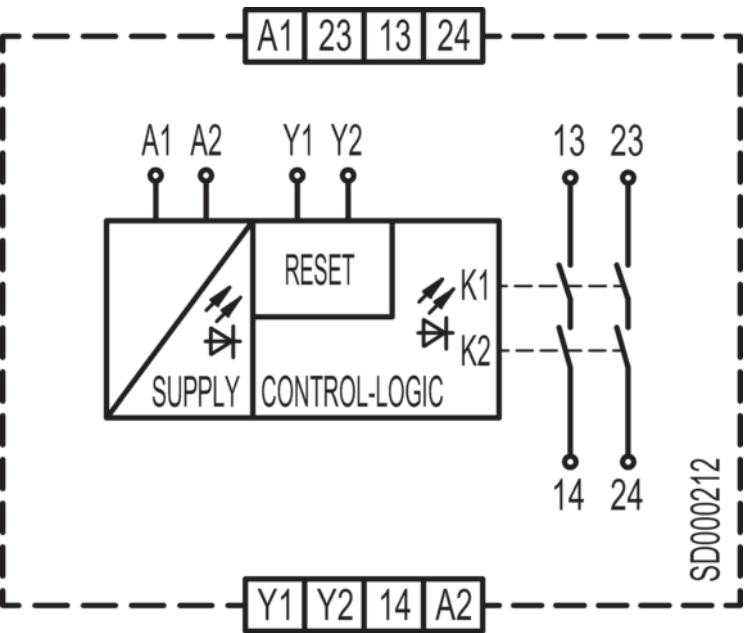
Connection 1

Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Terminal
Type of terminal	Spring-cage terminal
No. of pins	8 -pin

Electrical connection

Pin	Pin assignment
	13
1	Release current path 1 (NO contact)
	14
2	Release current path 1 (NO contact)
	23
3	Release current path 2 (NO contact)
	24
4	Release current path 2 (NO contact)
	A1
5	+24V
	A2
6	GND
	Y1
7	Control circuit of reset button
	Y2
8	Control circuit of reset button

Circuit diagrams



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.