

Technical data sheet

Safety relay

Part no.: 50133024

MSI-SR-ES20-01

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- Circuit diagrams
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For illustration purposes only



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 13849-1

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, non-delayed, 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 I ² of all current paths	72 A ²
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	≤ (5 + (1.333 × U _B / U _N - 1) × 200) Ω
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	Screw terminal
No. of pins	8 -pin

Cable properties

Connection cross sections	1 × 0.2 to 2.5 mm ² , wire
	1 × 0.2 to 2.5 mm ² , wire
	1 × 0.25 to 2.5 mm ² , wire with wire-end sleeve
	2 × 0.2 to 1.0 mm ² , wire
	2 × 0.2 to 1.0 mm ² , wire
	2 × 0.25 to 1.0 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

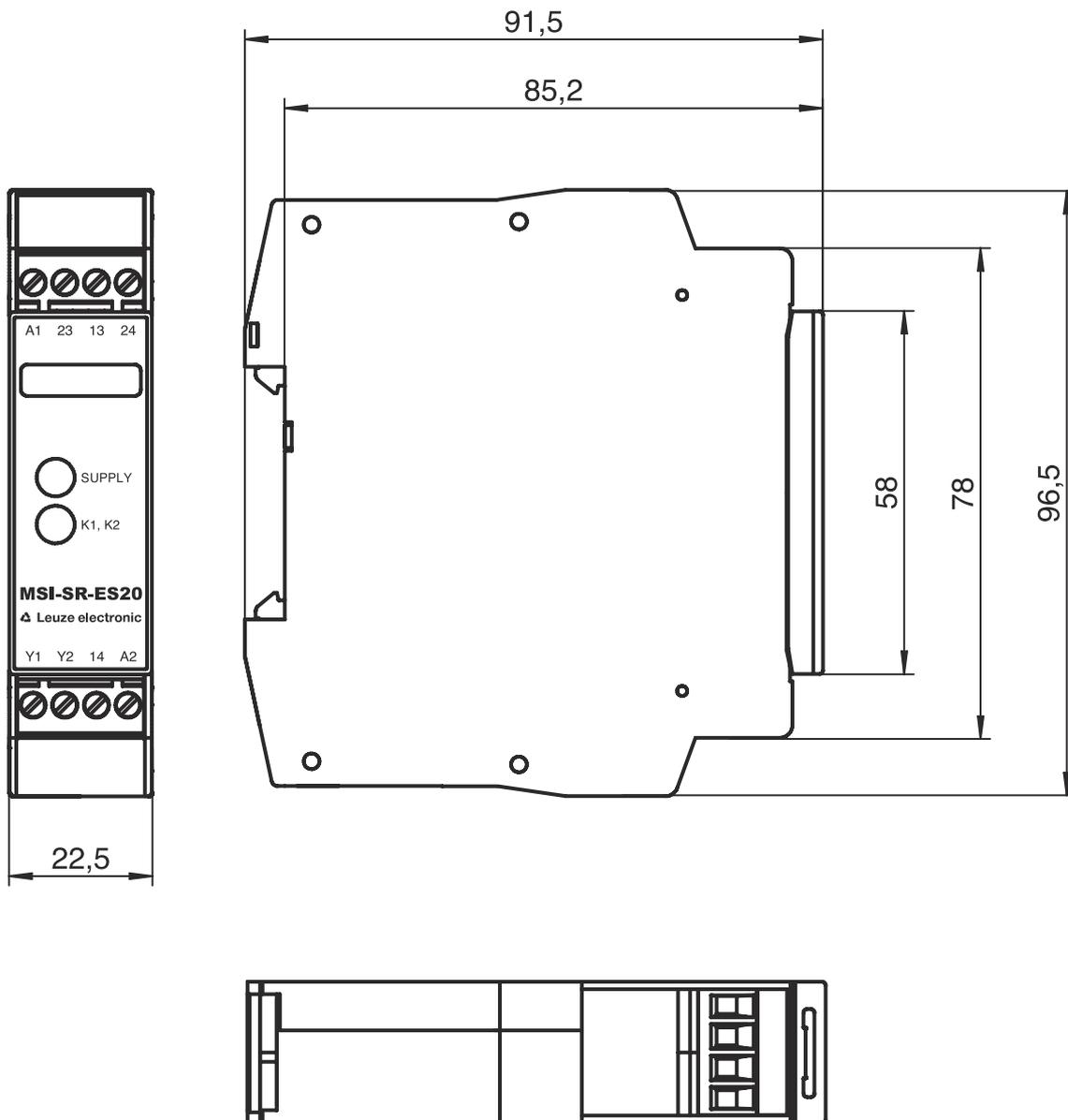
Approvals	c UL US
	TÜV Rheinland

Classification

Customs tariff number	85364900
ECLASS 8.0	27371819
ECLASS 9.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449

Dimensioned drawings

All dimensions in millimeters



Electrical connection

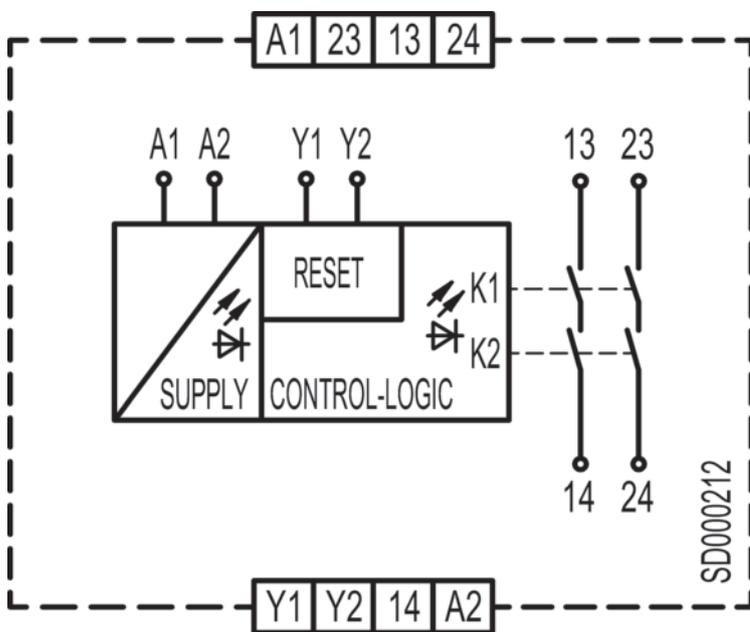
Connection 1

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

Electrical connection

Terminal	Assignment
13	Release current path 1 (NO contact)
14	Release current path 1 (NO contact)
23	Release current path 2 (NO contact)
24	Release current path 2 (NO contact)
A1	+24 V
A2	GND
Y1	Control circuit of reset button
Y2	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.