

Technical data sheet

Safety relay

Part no.: 50133022

MSI-SR-ES31-01

Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Circuit diagrams
- Notes



Figure can vary



Technical data

Basic data

Series	MSI-SR-ES31
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
MTTF _d	73 years, EN ISO 13849-1
PFH _D	8,6E-10 per hour
Mission time T _M	20 years, EN ISO 13849-1
Category	3, EN ISO 13849
B10 _d at DC13 (inductive load)	300,000 number of cycles, (5 A, 230 V), 700,000 (1 A, 230 V)
B10 _d at AC15 (inductive load)	200,000 number of cycles, (5 A, 230 V), 380,000 (1 A, 230 V)

Electrical data

Supply circuit

Nominal voltage U _N	24 V AC/DC
Nominal frequency	50 ... 60 Hz
Operating voltage	0.85 ... 1.1 x U _N
Rated power DC	1.3 W
Galvanic isolation between supply and control circuit	Yes (when U _N ≥ AC 115-120 V, AC 230 V)

Output circuit

Number of outputs, safety-oriented, undelayed, contact-based	3 Piece(s)
Number of outputs, signaling function, undelayed, contact-based	1 Piece(s)
Release current paths	NO
Signaling current paths	NC
Contact material	Ag alloy, gold-plated
Usage category AC-15 (NO contact)	Ue 230V, Ie 5A
Usage category DC-13 (NO contact)	Ue 24V, Ie 5A
Short circuit protection (NO contact)	gG class safety fuse 6A, melting integral
Nominal switching voltage, release current paths AC	230 V
Nominal switching voltage, signaling current paths AC	230 V
Max. thermal continuous current I _{th} , release current paths	8 A
Max. thermal continuous current I _{th} , signaling current paths	5 A
Max. total current I ² of all current paths	9 A ²
Mechanical life time	100,000,000 switching cycles

Control circuit

Evaluation of the inputs	one- or two-channel
Nominal output voltage DC	24 V
Input current at the control inputs (safety circuit/reset circuit)	90 mA
Max. peak current at the control inputs (safety circuit/reset circuit)	1,500 mA
Max. cable resistance, per channel	≤ (5 + (1.333 x U _B / U _N - 1) x 200) Ω
Minimum switch-on time	60 ms
Response time (automatic start t _{A2})	60 ms
Release time t _R	60 ms
Recovery time t _w	200 ms

Connection

Number of connections	1 Piece(s)
-----------------------	------------

Connection 1

Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Terminal
Type of terminal	Screw terminal
No. of pins	15 -pin

Cable properties

Connection cross sections	1 x 0.2 to 2.5 mm ² , wire
	1 x 0.2 to 2.5 mm ² , wire
	1 x 0.25 to 2.5 mm ² , wire with wire-end sleeve
	2 x 0.2 to 1.0 mm ² , wire
	2 x 0.2 to 1.0 mm ² , wire
	2 x 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 114 mm
Net weight	200 g
Housing color	Gray
Type of fastening	Snap-on mounting

Certifications

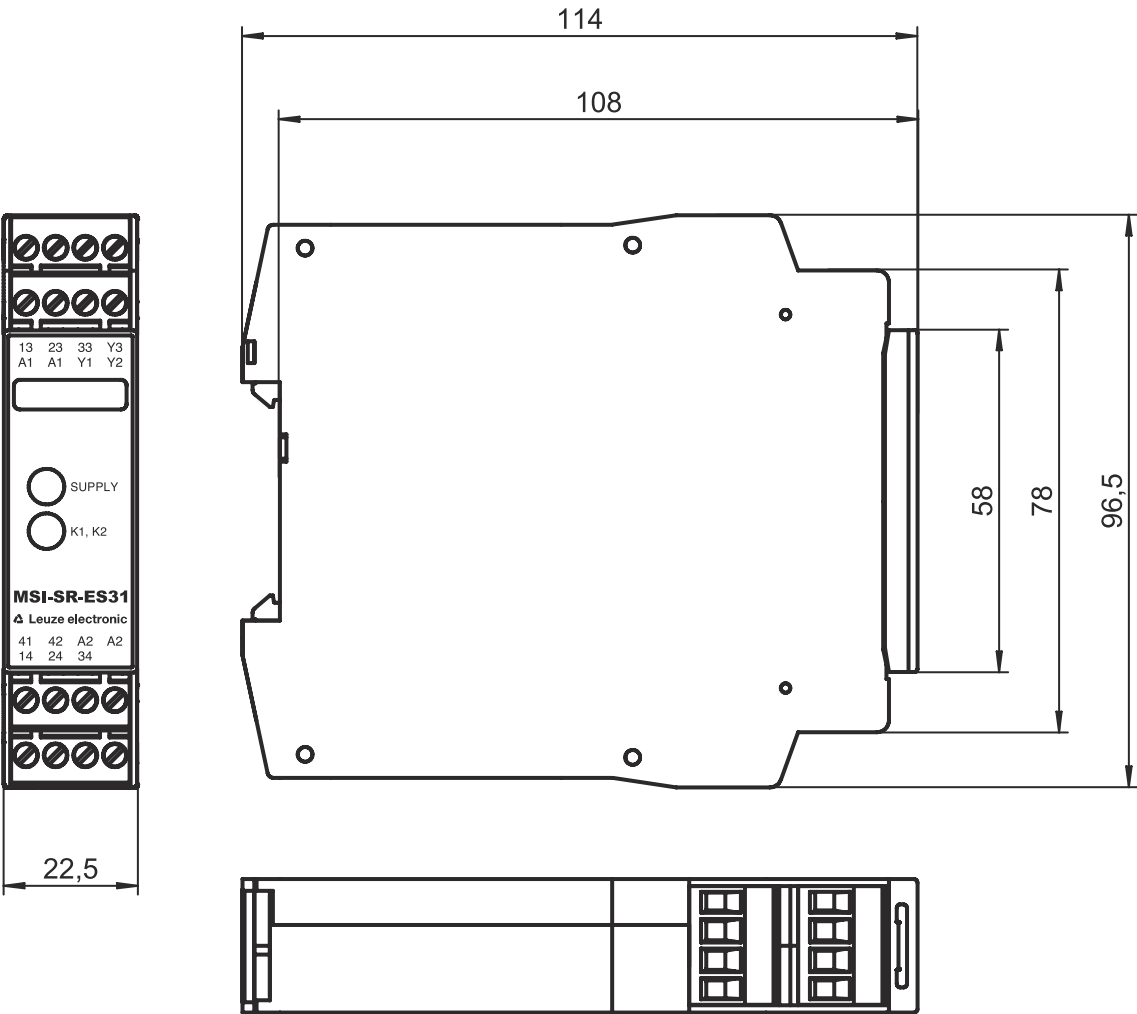
Certifications	c UL US
	TÜV Rheinland

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	Screw terminal
No. of pins	15 -pin

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)

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.