

Technical data sheet

Safety relay

Part no.: 50133009

MSI-SR-LC21-03

Contents

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



Figure can vary



Technical data

Basic data

Series	MSI-SR-LC21
Application	Base device for E-Stop and safety door applications

Functions

Functions	Monitoring of E-Stop circuits Monitoring of optoelectronic protective devices Monitoring of position switches Monitoring of proximity switches Monitoring of solenoid switches
Restart	Automatic Manual

Characteristic parameters

SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
MTTF _d	78 years, EN ISO 13849-1
Mission time T _M	20 years, EN ISO 13849-1
Category	4, EN ISO 13849
DC _{AVG}	99 %
B10 _d at DC13 (inductive load)	435,000 number of cycles, (2.5 A, 230 V), 700,000 (1 A, 230 V)
B10 _d at AC15 (inductive load)	230,000 number of cycles, (3 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	2 W
Galvanic isolation between supply and control circuit	No

Output circuit

Number of outputs, safety-oriented, undelayed, contact-based	2 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 3A
Usage category DC-13 (NO contact)	Ue 24V, Ie 2,5A
Short circuit protection (NO contact)	gG class safety fuse 6A, melting integral
Max. thermal continuous current I _{th} , release current paths	6 A
Max. thermal continuous current I _{th} , signaling current paths	3 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	Two-channel
Input current at the control inputs (safety circuit/reset circuit)	40 mA
Max. peak current at the control inputs (safety circuit/reset circuit)	100 mA
Max. cable resistance, per channel	$\leq (5 + (1.176 \times U_B / U_N - 1) \times 100) \Omega$
Minimum switch-on time	50 ms
Response time (automatic start t _{A2})	500 ms
Response time (manual start t _{A1})	40 ms
Test pulse time permitted t _{TP}	1 ms
Release time t _R	25 ms
Synchronous time monitoring t _s	200 ms
Recovery time t _w	150 ms

Connection

Number of connections	1 Piece(s)
Connection 1	
Function	Signal IN Signal OUT Voltage supply
Type of connection	Terminal
Type of terminal	Spring-cage terminal
No. of pins	16 -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 106.5 mm x 114 mm
Net weight	210 g
Housing color	Gray
Type of fastening	Snap-on mounting

Certifications

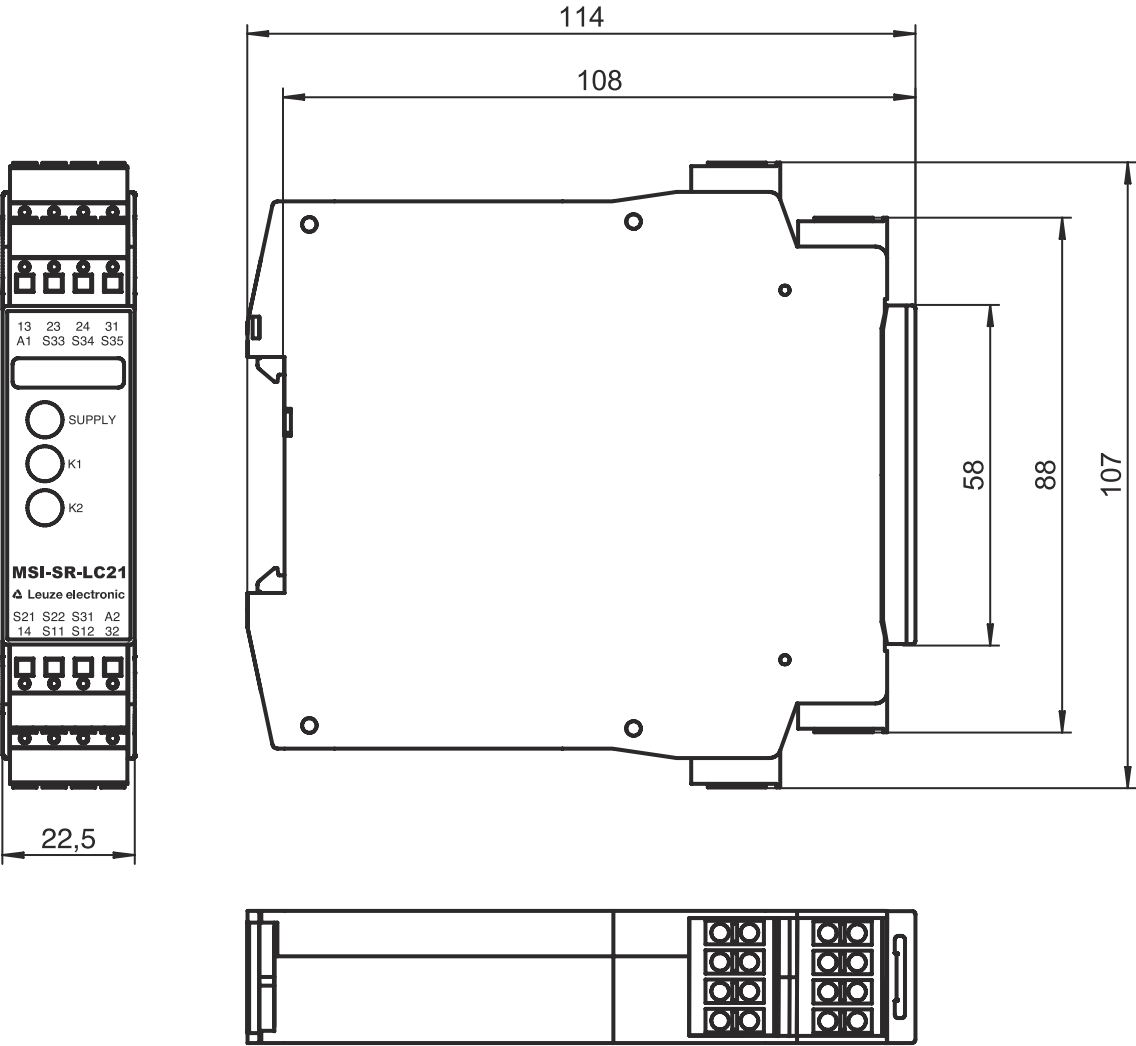
Certifications	c UL US TÜV Rheinland
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Classification

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

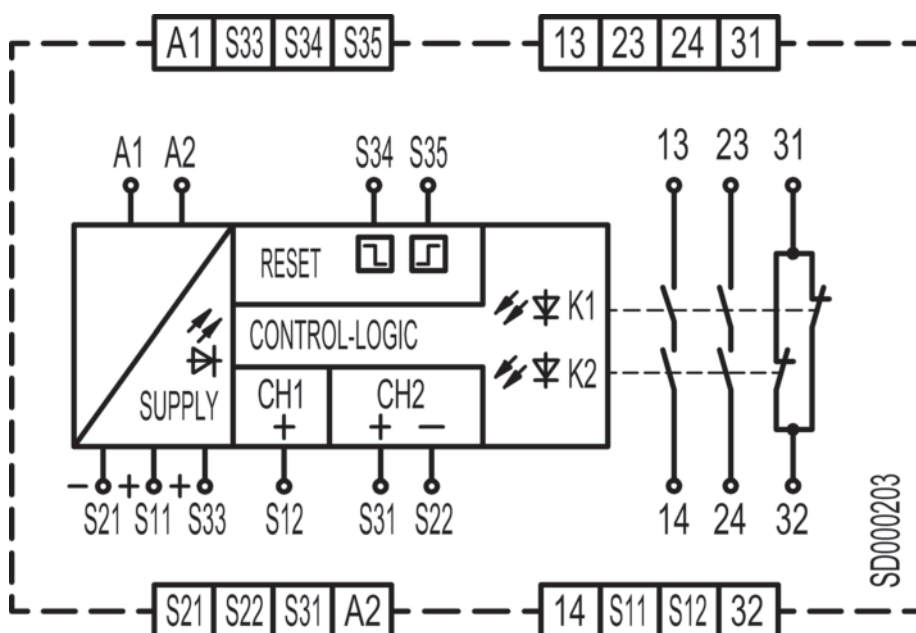
Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Terminal
Type of terminal	Spring-cage terminal
No. of pins	16 -pin

Pin	Pin assignment
	13
1	Release current path 1 (NO contact)
	14
2	Release current path 1 (NO contact)
	23

Electrical connection

Pin	Pin assignment
3	Release current path 2 (NO contact) 24
4	Release current path 2 (NO contact) 31
5	Signaling current path (NC contact) 32
6	Signaling current path (NC contact) A1
7	+24V A2
8	GND S11
9	Control circuit 1 S12
10	Control circuit 1 S21
11	Control circuit 2 S22
12	Control circuit 2 S31
13	Feedback path (NC contact) S33
14	Feedback path (NC contact) S34
15	Control circuit of reset button S35
16	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.