

## Technical data sheet

### Safety relay

Part no.: 50133009

MSI-SR-LC21-03

#### Contents

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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 <sub>d</sub>	78 years, EN ISO 13849-1
PFH <sub>D</sub>	0.000000017 per hour
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1
Category	4, EN ISO 13849
DC <sub>AVG</sub>	99 %
B10 <sub>d</sub> at DC13 (inductive load)	435,000 number of cycles, (2.5 A, 230 V), 700,000 (1 A, 230 V)
B10 <sub>d</sub> 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 <sub>N</sub>	24 V AC/DC
Nominal frequency	50 ... 60 Hz
Operating voltage	0.85 ... 1.1 x U <sub>N</sub>
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 <sub>th</sub> , release current paths	6 A
Max. thermal continuous current I <sub>th</sub> , signaling current paths	3 A
Max. total current I <sup>2</sup> of all current paths	9 A <sup>2</sup>
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	≤ (5 + (1.176 x U <sub>B</sub> / U <sub>N</sub> - 1) x 100) Ω
Minimum switch-on time	50 ms
Response time (automatic start t <sub>A2</sub> )	500 ms
Response time (manual start t <sub>A1</sub> )	40 ms
Test pulse time permitted t <sub>TP</sub>	1 ms
Release time t <sub>R</sub>	25 ms
Synchronous time monitoring t <sub>S</sub>	200 ms
Recovery time t <sub>W</sub>	150 ms

### Connection

Number of connections	1 Piece(s)
<b>Connection 1</b>	
Function	Signal IN Signal OUT Voltage supply
Type of connection	Terminal
Type of terminal	Spring-cage terminal
No. of pins	16 -pin
<b>Cable properties</b>	
Connection cross sections	2 x 0.2 to 1.5 mm <sup>2</sup> , wire 2 x 0.2 to 1.5 mm <sup>2</sup> , wire 2 x 0.25 to 1.5 mm <sup>2</sup> , 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

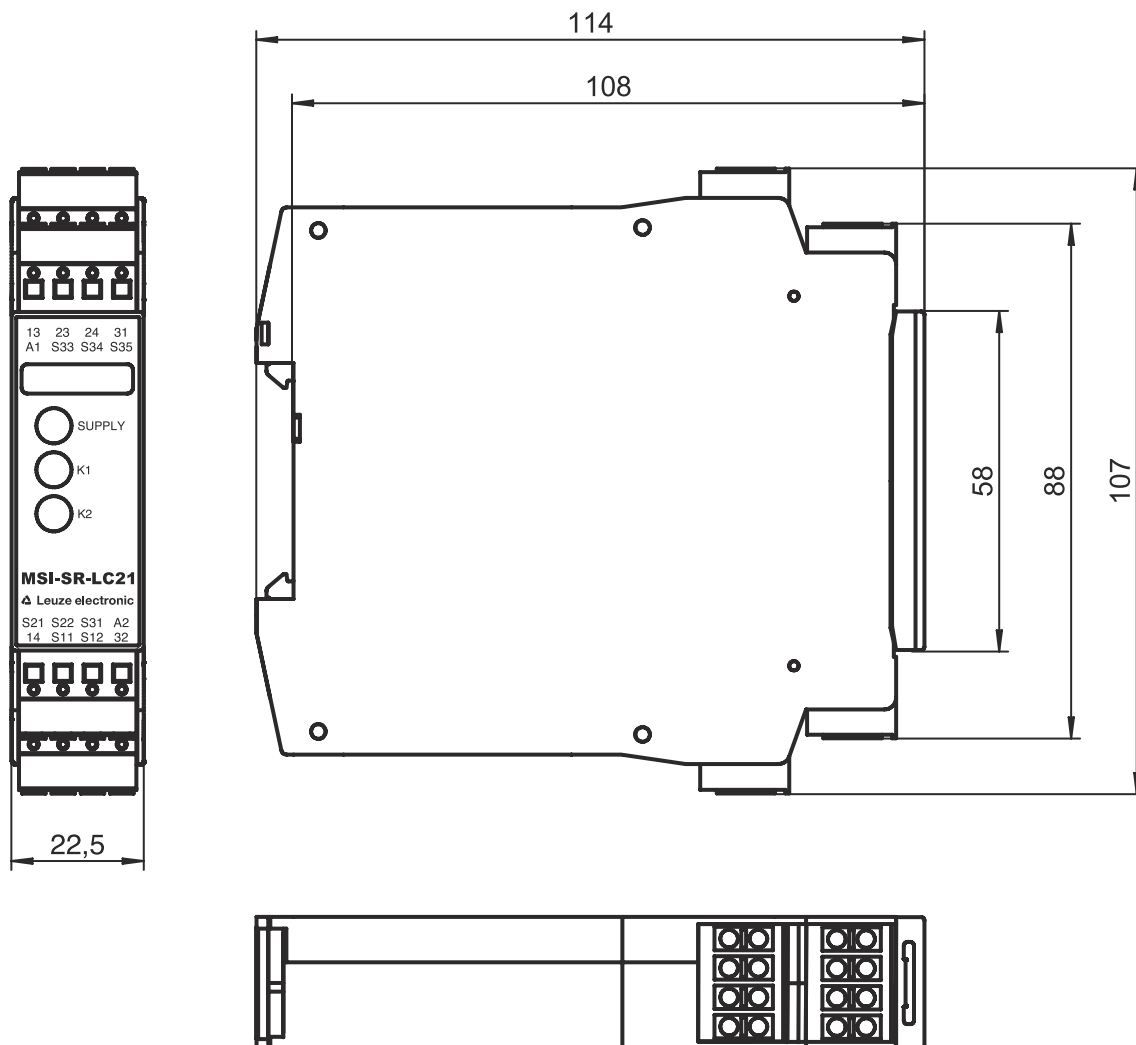
Certifications	c UL US TÜV Rheinland
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### Classification

Customs tariff number	85364900
eCl@ss 5.1.4	27371800
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819
eCl@ss 10.0	27371819
eCl@ss 11.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

# Dimensioned drawings

All dimensions in millimeters



## Electrical connection

### Connection 1

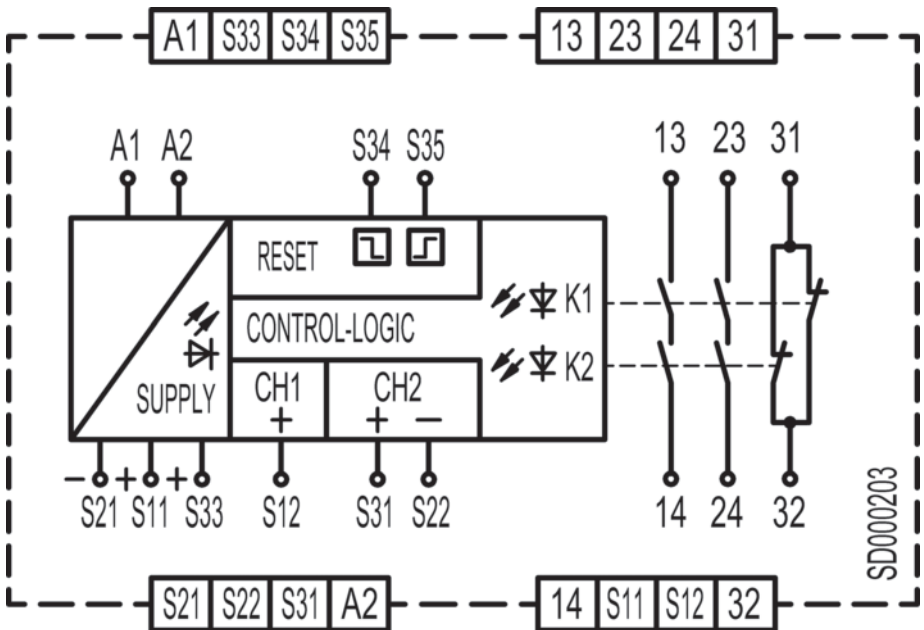
Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Terminal
Type of terminal	Spring-cage terminal
No. of pins	16 -pin

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.