

## Technical data sheet

### Safety relay

Part no.: 50133016

MSI-SR-2H21-01

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For illustration purposes only



## Technical data

### Basic data

Series	MSI-SR-2H21
Application	Evaluation unit for two-hand control devices in accordance with DIN EN ISO 13851 type IIIC

### Functions

Functions	For stop category 0 Monitoring of the synchronous actuation Two-channel actuation (one normally open contact and one normally closed contact for each)
Restart	Through synchronous actuation

### Characteristic parameters

SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
PFH <sub>D</sub>	3E-08 per hour
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1
Category	4, EN ISO 13849-1

### Electrical data

Continuous current per current path, max.	6 A
<b>Performance data</b>	
Supply voltage U <sub>B</sub>	24 V, AC/DC, -15 ... 10 %
Power consumption, max.	1.9 W
<b>Supply circuit</b>	
Nominal voltage U <sub>N</sub>	24 V
Nominal frequency	50 ... 60 Hz
Rated control supply voltage U <sub>S</sub> at AC 60 Hz	20.4 V
Rated control supply voltage U <sub>S</sub> 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 <sub>S</sub> at AC 50 Hz	20.4 V
Min. rated control supply voltage U <sub>S</sub> 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 DC	2.4 W
Galvanic isolation between supply and control circuit	Yes (when U <sub>N</sub> ≥ AC 115-230 V, AC 230 V)

### Output circuit

Number of outputs, safety-oriented, non-delayed, contact-based	2 Piece(s)
Number of outputs, safety-oriented, delayed, contact-based	0 Piece(s)
Number of outputs, signaling function, non-delayed, 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
Nominal switching voltage, release current paths AC	230 V
Max. thermal continuous current I <sub>th</sub> , release current paths	6 A
Max. thermal continuous current I <sub>th</sub> , signaling current paths	2 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

Executing the switching function of the inputs	Changeover
Nominal output voltage DC	24 V
Input current at the control inputs (safety circuit/reset circuit)	60 mA
Max. peak current at the control inputs (safety circuit/reset circuit)	1,000 mA
Max. cable resistance, per channel	≤ (5 + (1.333 × U <sub>B</sub> / U <sub>N</sub> - 1) × 200) Ω
Response time (automatic start t <sub>A2</sub> )	40 ms
Response time (manual start t <sub>A1</sub> )	40 ms
Release time t <sub>R</sub>	50 ms
Synchronous time monitoring t <sub>S</sub>	500 ms
Recovery time t <sub>W</sub>	250 ms

### Time behavior

Regression delay	50 ms
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### 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	Screw terminal
No. of pins	16 -pin

### Cable properties

Connection cross sections	1 × 0.2 to 2.5 mm <sup>2</sup> , wire 1 × 0.2 to 2.5 mm <sup>2</sup> , wire 1 × 0.25 to 2.5 mm <sup>2</sup> , wire with wire-end sleeve 2 × 0.2 to 1.0 mm <sup>2</sup> , wire 2 × 0.2 to 1.0 mm <sup>2</sup> , wire 2 × 0.25 to 1.0 mm <sup>2</sup> , wire with wire-end sleeve
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## Technical data

### 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

### Environmental data

Ambient temperature, operation	-25 ... 55 °C
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### Certifications

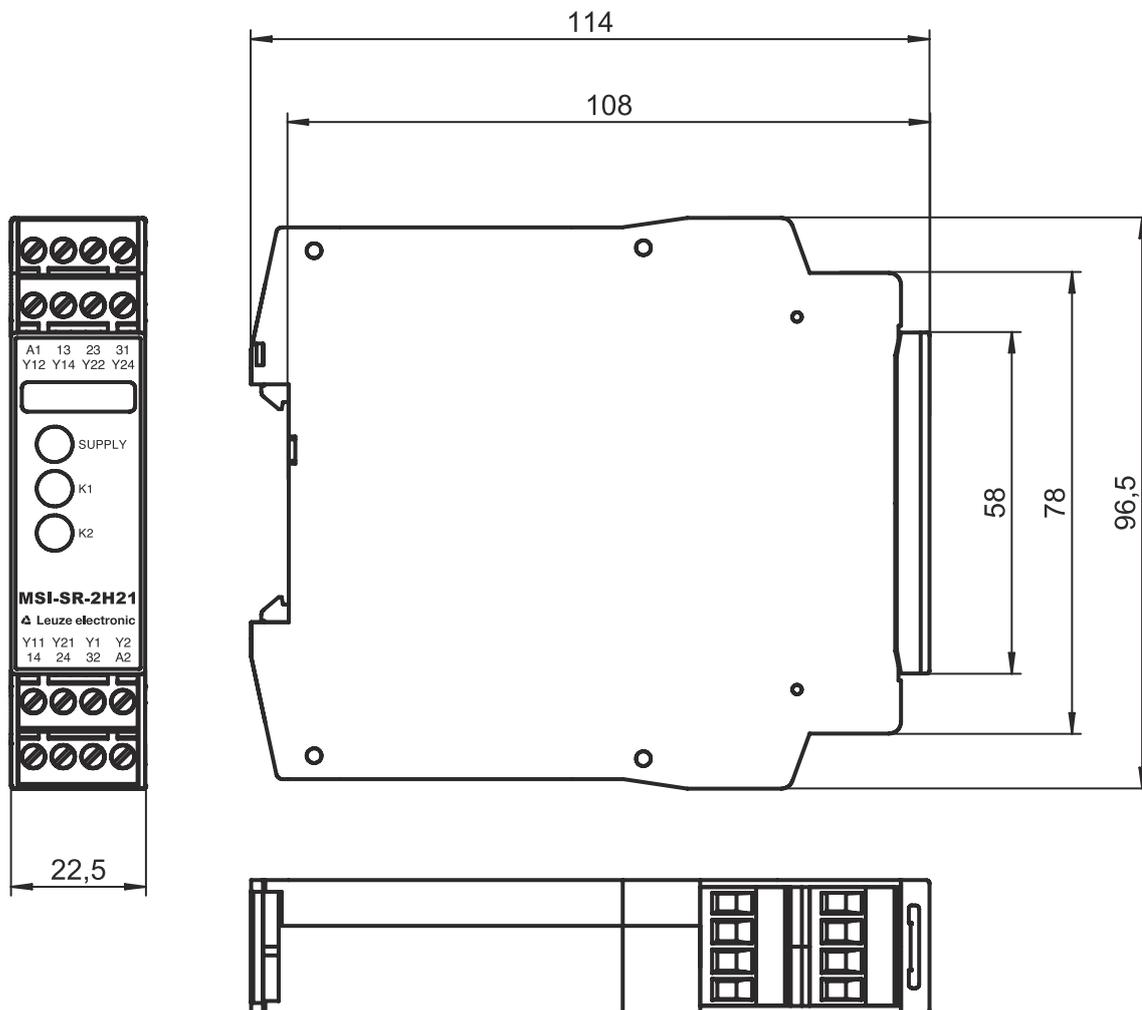
Approvals	c UL US
	TÜV Rheinland

### Classification

Customs tariff number	85364900
ECLASS 5.1.4	27371905
ECLASS 8.0	27371821
ECLASS 9.0	27371821
ECLASS 10.0	27371821
ECLASS 11.0	27371821
ECLASS 12.0	27371821
ECLASS 13.0	27371821
ECLASS 14.0	27371821
ECLASS 15.0	27371821
ECLASS 16.0	27371821
ETIM 5.0	EC001452
ETIM 6.0	EC001452
ETIM 7.0	EC001452
ETIM 8.0	EC001452
ETIM 9.0	EC001452
ETIM 10.0	EC001452

# Dimensioned drawings

All dimensions in millimeters



## Electrical connection

### Connection 1

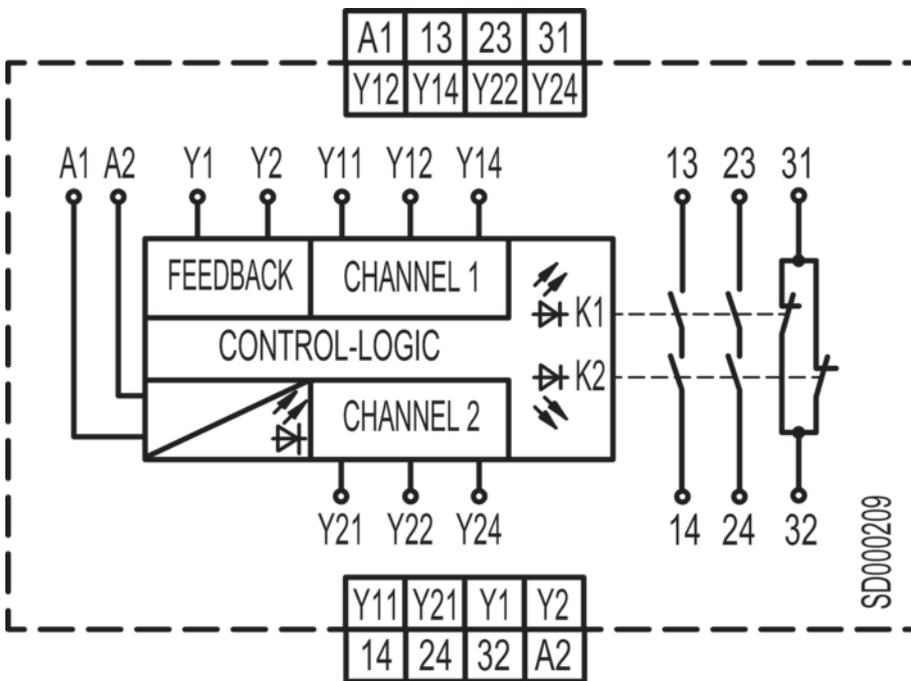
<b>Function</b>	Signal IN Signal OUT Voltage supply
<b>Type of connection</b>	Terminal
<b>Type of terminal</b>	Screw terminal
<b>No. of pins</b>	16 -pin

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)
31	Signaling current path (NC contact)
32	Signaling current path (NC contact)

## Electrical connection

Terminal	Assignment
A1	+24 V
A2	GND
Y1	Feedback path (NC contact)
Y2	Feedback path (NC contact)
Y11	Control circuit 1 of two-hand button
Y12	Control circuit 1 of two-hand button
Y14	Control circuit 1 of two-hand button
Y21	Control circuit 2 of two-hand button
Y22	Control circuit 2 of two-hand button
Y24	Control circuit 2 of two-hand 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.