



**Part no.: 547952**  
**MSI-SR5B-01**  
**Safety relay**



Figure can vary

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- Electrical connection
- Operation and display

Part no.: 547952 – MSI-SR5B-01 – Safety relay

## Technical data

<b>Basic data</b>	
Series	MSI-SR5B
<b>Functions</b>	
Functions	Automatic start/restart Contactor monitoring (EDM) Cross circuit monitoring Double sensor monitoring Start/restart interlock (RES), selectable
Restart	Automatic Manual
<b>Characteristic parameters</b>	
SIL	3 , IEC 61508
SILCL	3 , IEC/EN 62061
Performance Level (PL)	e , EN ISO 13849-1
MTTF <sub>d</sub>	73 years , EN ISO 13849-1
PFH <sub>D</sub>	0.00000001 per hour
PFH <sub>D</sub>	1E-08 per hour
PFH <sub>D</sub> , nop = 4800	0.00000001 per hour
PFH <sub>D</sub> , nop = 28800	0.00000002 per hour
PFH <sub>D</sub> , nop = 86400	0.00000005 per hour
Mission time T <sub>M</sub>	20 years , EN ISO 13849-1
Category	4 , EN ISO 13849
STOP category	0 , IEC/EN 60204-1
B10 <sub>d</sub> at AC1 (ohmic load)	400,000 number of cycles
B10 <sub>d</sub> at DC13 (inductive load)	4,000,000 number of cycles
<b>Electrical data</b>	
Protective circuit	Fuse on switching output, upstream
Continuous current per current path, max.	2 A
Input current, max.	150 mA
External safeguarding for supply circuit	200 mA delay-action
External contact fuse protection per current path	5 A quick-action, or 3.15 A delay-action
Permissible input line resistance, max.	30 Ω
<b>Performance data</b>	
Supply voltage U <sub>B</sub>	24 V , DC , -20 ... 20 %
Current consumption, max.	Without external load
<b>Outputs</b>	
Number of safety-related switching outputs (OSSDs)	2 Piece(s)
<b>Safety-related switching outputs</b>	
Type	Safety-related switching output OSSD
Voltage type	DC
<b>Safety-related switching output 1</b>	
Switching element	Relay , NO
<b>Safety-related switching output 2</b>	
Switching element	Relay , NO
<b>Timing</b>	

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Pickup delay, automatic start	350 ms
Pickup delay, manual start	50 ms
Regression delay	10 ms
Test pulse acceptance, max.	1 ms
Time window between 2 channels of a sensor, max.	60 ms

**Connection**

Number of connections	1 Piece(s)
Connectible safety sensors (AOPDs)	Up to 2 AOPDs type 4, type 3 or type 2 self-testing
Connectible electro-mechanical safety devices	E-Stop command devices, 1 and 2-channel Safety switches

**Connection 1**

Type of connection	Terminal
Function	Connection to device
Type of terminal	Screw terminal
No. of pins	16 -pin

**Cable properties**

Connection cross sections	0.2 to 2.5 mm <sup>2</sup>
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**Mechanical data**

Dimension (W x H x L)	22.5 mm x 99 mm x 114.1 mm
Housing material	Plastic , PA 66
Net weight	170 g
Housing color	Gray
Type of fastening	Snap-on mounting
Mechanical life time	10,000,000 actuation cycles

**Operation and display**

Type of display	LED
Number of LEDs	4 Piece(s)

**Environmental data**

Ambient temperature, operation	0 ... 55 °C
Ambient temperature, storage	-25 ... 70 °C
Relative humidity (non-condensing)	0 ... 95 %

**Certifications**

Degree of protection	IP 20 (terminals) IP 40 (housing)
Protection class	II
Certifications	c TÜV NRTL US c UL US TÜV Süd
US patents	US 6,418,546 B

**Classification**

Customs tariff number	85371098
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449

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## Electrical connection

Connection 1	
Type of connection	Terminal
Function	Connection to device
Type of terminal	Screw terminal
No. of pins	16 -pin

Terminal	Assignment
5	+24V
6	0 V
7	Sensor input 1 channel 2, 24V
8	Sensor input 2 channel 2, 24V
13	Sensor input 1 channel 2, 0V
14	Sensor supply, contacts 24V OUT
15	Sensor input 2 channel 2, 0V
16	Restart input
21	Sensor input 1 channel 1, 24V
22	Sensor supply contacts 0V OUT
23	Sensor input 2 channel 1, 24V
24	Restart automatic output
29	Relay contact 1 IN
30	Relay contact 1 OUT
31	Relay contact 2 IN
32	Relay contact 2 OUT

## Operation and display

### LEDs

LED	Display	Meaning
1	Green, continuous light	Supply voltage on
2	Green, continuous light	Channel 1
3	Green, continuous light	Channel 2
4	Orange, continuous light	Start/restart interlock locked