Technical data sheet
Safety relay
Part no.: 547950
MSI-SR4B-01



For Illustration purposes only

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Technical data

Basic data

Series	MSI-SR4B
Application	E-Stop circuits
	Optoelectronic protective devices
	Position switches (mechanical contacts)
	Solenoid switches (reed contacts, equivalent)
	Transponder switches (OSSD outputs)

Functions

Functions	Contactor monitoring (EDM)
	Cross circuit monitoring
	Start/restart interlock (RES)
Restart	Automatic
	Manual

Characteristic parameters

SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
$MTTF_d$	73 years, EN ISO 13849-1
PFH_D	2,1E-08 per hour
PFH_D, nop = 4800	0.0000000014 per hour
PFH_D, nop = 28800	0.0000000045 per hour
PFH_D, nop = 86400	0.000000015 per hour
Mission time T_M	20 years, EN ISO 13849-1
Category	4, EN ISO 13849-1
STOP category	0, IEC/EN 60204-1
$B10_d$ at DC13 (inductive load)	1,000,000 number of cycles
$B10_d$ at AC15 (inductive load)	1,400,000 number of cycles

Electrical data

Protective circuit	Fuse on switching output, upstream
Continuous current per current path, max.	3 A
Input current, max.	100 mA
External safeguarding for supply circuit	200 mA delay-action
Permissible input line resistance, max.	30 Ω

Performance data

Supply voltage U_B	24 V, AC/DC, -20 ... 20 %
Current consumption, additional note	Without external load
Power consumption, max.	3 W

Outputs

Number of safety-related switching outputs (OSSDs)	3 Piece(s)

Safety-related switching outputs

Type	Safety-related switching output OSSD
Voltage type	AC/DC

Safety-related switching output 1

Switching element	Relay, NO

Safety-related switching output 2

Switching element	Relay, NO

Safety-related switching output 3

Switching element	Relay, NO

Output circuit

Number of outputs, safety-oriented, non-delayed, contact-based	3 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)
Max. thermal continuous current I_{th}, release current paths	6 A

Time behavior

Response time	10 ms
Pickup delay, automatic start	300 ms
Pickup delay, manual start	30 ms
Regression delay	10 ms
Test pulse acceptance, max.	1 ms
Time window for signal sequence monitoring	20 ms

Connection

Number of connections	1 Piece(s)

Connection 1

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

Cable properties

Connection cross sections	0.2 to 2.5 mm²

Mechanical data

Dimension (W x H x L)	22.5 mm x 99 mm x 114.1 mm
Housing material	Plastic
Plastic housing	PA 66
Electrical contact material	Silver alloy
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

Certifications

Degree of protection	IP 20 (terminals)
	IP 40 (housing)
Protection class	II
Approvals	c UL US
	TÜV Süd

Technical data

Customs tariff number	85364900
ECLASS 5.1.4	27371800
ECLASS 8.0	27371819
ECLASS 9.0	27371819
ECLASS 10.0	27371819
ECLASS 11.0	27371819
ECLASS 12.0	27371819
ECLASS 13.0	27371819
ECLASS 14.0	27371819
ECLASS 15.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449
ETIM 8.0	EC001449
ETIM 9.0	EC001449
ETIM 10.0	EC001449

Electrical connection

Connection 1

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

Terminal	Assignment
13	Relay contact 1 IN
23	Relay contact 2 IN
33	Relay contact 3 IN
41	Signal contact IN
A1	+24 V
S35	Restart input
S33	Sensor supply, contacts 24V OUT
S22	Sensor input
S12	Sensor input
A2	0 V
S34	Restart automatic output
S31	Sensor input
14	Relay contact 1 OUT
24	Relay contact 2 OUT
34	Relay contact 3 OUT
42	Signal contact IN

Operation and display

LED	Display	Meaning
1	Green, continuous light	Supply voltage on
2	Green, continuous light	Relay K1 picked up
3	Green, continuous light	Relay K2 picked up
4	Yellow, continuous light	Restart interlock locked