



Figure can vary

Part no.: 549942
MSI-MC311
Safety relay



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- Technical data
- Electrical connection
- Operation and display

Part no.: 549942 – MSI-MC311 – Safety relay

Technical data

Basic data	
Series	MSI-MC3x
Functions	
Functions	Automatic start/restart Start/restart interlock (RES) Static contactor monitoring (EDM) Stop function according to category Stop 0
Restart	Automatic Manual
Characteristic parameters	
Performance Level (PL)	Up to and including e, EN ISO 13849-1
PFH _D	0.000000025 per hour
PFH _D	2,5E-08 per hour
Mission time T _M	20 years, EN ISO 13849-1
Category	Up to and including 4: 1 sensor connected, EN ISO 13849
STOP category	0, IEC/EN 60204-1
Electrical data	
Protective circuit	Fuse on switching output, upstream
Input current, max.	220 mA
External contact fuse protection per current path	4 A gG
Performance data	
Supply voltage	24 V, AC/DC, -15 ... 10 %
Outputs	
Number of safety-related switching outputs (OSSDs)	2 Piece(s)
Number of digital switching outputs	1 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
Switching outputs	
Type	Digital switching output
Voltage type	AC/DC
Switching output 1	
Switching element	Relay, NO
Function	EDM switching output
Timing	
Response time	20 ms
Pickup delay, automatic start	30 ms
Pickup delay, manual start	150 ms
Connection	
Number of connections	1 Piece(s)

Part no.: 549942 – MSI-MC311 – Safety relay

Connection 1

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

Cable properties

Connection cross sections	2 x 0.2 to 1.0 mm ² , wire 1 x 0.25 to 2.5 mm ² , wire with wire-end sleeve 2 x 0.25 to 1.0 mm ² , wire with wire-end sleeve 2 x 0.2 to 1.5 mm ² , wire 2 x 0.5 to 1.5 mm ² , wire with twin wire-end sleeve 1 x 0.2 to 2.5 mm ² , wire 1 x 0.2 to 2.5 mm ² , wire
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Mechanical data

Dimension (W x H x L)	22.5 mm x 99 mm x 113.6 mm
Housing material	Plastic, PA
Net weight	203 g
Housing color	Gray
Type of fastening	Snap-on mounting
Mechanical life time	10,000,000 switching cycles

Operation and display

Type of display	LED
Number of LEDs	3 Piece(s)

Environmental data

Ambient temperature, operation	-5 ... 55 °C
Ambient temperature, storage	-25 ... 70 °C
Relative humidity (non-condensing)	4 ... 100 %

Certifications

Degree of protection	IP 20 (terminals) IP 40 (housing), Installation in switch cabinet or housing with degree of protection of at least IP 54
Certifications	TÜV Süd c UL US
Test procedure for oscillation in accordance with standard	EN 60947-5-3

Classification

eCl@ss 8.0	27371819
eCl@ss 9.0	27371819
ETIM 5.0	EC001449

Electrical connection

Connection 1	
Type of connection	Terminal
Function	Connection to device Voltage supply

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Connection 1	
Type of terminal	Screw terminal
No. of pins	16 -pin

Terminal	Assignment
EDM	EDM
SI	
23	OSSD21
13	OSSD11
A1	+24V
A2	0 V
SR1	Start 1
SR2	Start 2
S12	Sensor SA2
S11	Sensor SA1
S22	Sensor SB2
S21	Sensor SB1
S02	
S01	
24	
14	OSSD12

Operation and display

LEDs

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