

Technical data sheet

Safety relay

Part no.: 549942

MSI-MC311

Contents

- Technical data
- Electrical connection
- Operation and display



Figure can vary



Technical data

Basic data

Series	MSI-MC3x
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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

SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	Up to and including e, EN ISO 13849-1
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 U _B	24 V, AC/DC, -15 ... 10 %
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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
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Safety-related switching output 2

Switching element	Relay, NO
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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)
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Connection 1

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

Cable properties

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

Mechanical data

Dimension (W x H x L)	22.5 mm x 99 mm x 113.6 mm
Housing material	Plastic
Plastic housing	PA
Net weight	203 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	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	c UL US
	TÜV Süd
Test procedure for oscillation in accordance with standard	EN 60947-5-3

Classification

Customs tariff number	85423990
ECLASS 5.1.4	27371800
ECLASS 8.0	27371819
ECLASS 9.0	27371819
ECLASS 10.0	27371819
ECLASS 11.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

Electrical connection

Connection 1

Function	Connection to device
	Voltage supply
Type of connection	Terminal
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

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