

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

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)
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Number of digital switching outputs	1 Piece(s)
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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, 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
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449

Electrical connection

Connection 1

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

Pin	Pin assignment
	EDM
1	EDM
	SI
2	
	23
3	OSSD21
	13
4	OSSD11
	A1
5	+24V
	A2
6	0 V
	SR1
7	Start 1
	SR2
8	Start 2
	S12
9	Sensor SA2
	S11
10	Sensor SA1
	S22
11	Sensor SB2
	S21
12	Sensor SB1
	S02
13	
	S01
14	
	24
15	
	14
16	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