Technical data sheet
Safety relay
Part no.: 549941
MSI-MC310

For Illustration purposes only

Contents

Technical data

Leuze

Basic data

Series	MSI-MC3x
Application	Evaluation unit for magnetically coded sensors with antivalent reed contacts

Functions

Functions	For stop category 0
	Start/restart interlock (RES)
	Static contactor monitoring (EDM)
Restart	Automatic
	Manual

Characteristic parameters

SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
PFH_D	2,5E-08 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

Electrical data

Protective circuit	Fuse on switching output, upstream
Continuous current per current path, max.	3 A
Input current, max.	150 mA
External contact fuse protection per current path	4 A gG

Performance data

Supply voltage U_B	24 V, AC/DC, -10 ... 10 %
Power consumption, max.	4.6 W

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, NC
Function	EDM switching output

Output circuit

Number of outputs, safety-oriented, non-delayed, contact-based	2 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	3 A

Time behavior

Response time	20 ms
Pickup delay, automatic start	400 ms
Pickup delay, manual start	600 ms
Regression delay	20 ms
Time window between 2 channels of a sensor, max.	500 ms

Connection

Number of connections	1 Piece(s)

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 mm², wire
	1 x 0.2 to 2.5 mm², wire
	1 x 0.25 to 2.5 mm², wire with wire-end sleeve
	2 x 0.2 to 1.0 mm², wire
	2 x 0.2 to 1.5 mm², wire
	2 x 0.25 to 1.0 mm², wire with wire-end sleeve
	2 x 0.5 to 1.5 mm², 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	220 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	0 ... 55 °C
Ambient temperature, storage	-25 ... 70 °C
Relative humidity (non-condensing)	4 ... 100 %

Technical data

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
Approvals	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
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
	Voltage supply
Type of connection	Terminal
Type of terminal	Screw terminal
No. of pins	16 -pin

Terminal	Assignment
A2	0 V
31	EDM 1
23	OSSD21
13	OSSD11
A1	+24 V
OUT	Output for SR/A
SR	Start/Reset
A	Automatic
S11	Sensor SA
S22	Sensor SA2
S33	Sensor SB
S34	Sensor SB1
24	OSSD22
S12	Sensor SA1
32	EDM 2
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