

Technical data sheet

Muting interface

Part no.: 549992

MSI-MD-FB

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- Technical data
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For illustration purposes only



Technical data

Basic data

Series	MSI-MD-FB
Application	Muting interface for muting applications in combination with standard variants of the MLC and ELC safety light curtains, as well as MLD multiple light beam safety devices

Functions

Functions	Muting enable function Muting-timeout extension Sequence controlled 2-sensor muting Sequence controlled 4-sensor muting Timing controlled 2-sensor muting
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-09 per hour
Mission time T _M	20 years, EN ISO 13849-1
Category	4, EN ISO 13849-1

Electrical data

Protective circuit	Overvoltage protection Polarity reversal protection Short circuit protected
Performance data	
Supply voltage U _B	24 V, DC, -20 ... 20 %, Compensation necessary at 20 ms voltage dip, min. 250 mA (+ external loads)
Current consumption, max.	150 mA, Without external load
Power consumption, max.	3.6 W
Residual ripple	-5 ... 5 %, From U _B
Inputs	
Number of safety-related switching inputs	2 Piece(s)
Number of digital switching inputs	8 Piece(s)
Switching inputs	
Type	Digital switching input
Switching voltage high, min.	27 V
Switching voltage low, max.	2.5 V
Switching voltage, type.	24 V
Voltage type	DC
Digital switching input 1	
Function	Control input for Reset Control input, reset of the control
Digital switching input 2	
Function	Control input, muting sensor 1 of the control
Digital switching input 3	
Function	Control input, muting enable/muting timeout

Digital switching input 4

Function	Control input for Reset
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Digital switching input 5

Function	Control input for muting sensor 1 Control input for muting sensor 2 Control input for muting sensor 3 Control input for muting sensor 4
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Safety-related switching inputs

Type	Safety switching input
Voltage type	DC
Switching voltage high, min.	27 V
Switching voltage low, max.	18 V
Switching voltage, type.	24 V

Outputs

Number of safety-related switching outputs (OSSDs)	2 Piece(s)
Number of digital switching outputs	3 Piece(s)

Safety-related switching outputs

Type	Safety-related switching output OSSD
Switching voltage high, min.	18 V
Switching voltage low, max.	2.5 V
Switching voltage, type.	24 V
Voltage type	DC
Switching current, max.	380 mA
Load inductivity	2,000 µH
Load capacity	0.3 µF
Residual current, max.	0.2 mA
Residual current, type.	0.002 mA

Safety-related switching output 1

Switching element	Transistor, PNP
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Safety-related switching output 2

Switching element	Transistor, PNP
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Switching outputs

Type	Digital switching output
Switching voltage, type.	24 V
Voltage type	DC

Switching output 1

Switching element	Transistor, PNP
Function	"Error" signal output

Switching output 2

Switching element	Transistor, PNP
Function	ReadyForReset signal output

Switching output 3

Switching element	Transistor, PNP
Function	"Muting state" signal output

Time behavior

Restart delay time	100 ms
Regression delay	5 ms

Connection

Number of connections	8 Piece(s)
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Technical data

Connection 1

Function	Machine interface
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	8 -pin

Connection 2

Function	Connection - safety sensor
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin

Connection 3

Function	Connection - muting indicator
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin

Connection 4

Function	Connection - acknowledgment unit
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin

Connection 5

Function	Connections for four muting sensors
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin

Connection 6

Function	Service interface
Type of connection	USB
Connector type	USB 2.0 Micro-B

Cable properties

Permissible conductor cross section, type.	0.25 mm ²
Length of connection cable, max.	50 m

Mechanical data

Dimension (W x H x L)	60 mm x 38.3 mm x 225 mm
Net weight	560 g
Housing color	Yellow
Type of fastening	Mounting plate Mounting plate with L-angle Through-hole mounting

Operation and display

Type of display	LED
Number of LEDs	14 Piece(s)
Operational controls	DIP switch
Function of the operational control	Selection of operating mode

Environmental data

Ambient temperature, operation	-30 ... 60 °C
Ambient temperature, storage	-40 ... 70 °C
Relative humidity (non-condensing)	0 ... 95 %

Certifications

Degree of protection	IP 67
Protection class	III
Approvals	c UL US TÜV Süd
Test procedure for oscillation in accordance with standard	IEC/EN 60068-2-6
Shock resistance	100 m/s ²
Test procedure for shock in accordance with standard	IEC/EN 60068-2-6
US patents	US 6,418,546 B

Classification

Customs tariff number	85369095
ECLASS 5.1.4	27371811
ECLASS 8.0	27371811
ECLASS 9.0	27371811
ECLASS 10.0	27371811
ECLASS 11.0	27371819
ECLASS 12.0	27371819
ECLASS 13.0	27371819
ECLASS 14.0	27371819
ECLASS 15.0	27371819
ECLASS 16.0	27371819
ETIM 5.0	EC001448
ETIM 6.0	EC001448
ETIM 7.0	EC001448
ETIM 8.0	EC001449
ETIM 9.0	EC001449
ETIM 10.0	EC001449

Electrical connection

Connection 1

SC

Function	Machine interface
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded

Connection 2

LC/LG

Function	Connection - safety sensor
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Connection 3

ML

Function	Connection - muting indicator
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Connection 4

RES

Function	Connection - acknowledgment unit
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Connection 5

MS1 ... MS4

Function	Connections for four muting sensors
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Connection 6

Function	Service interface
Type of connection	USB