

MSI-m, MSI-mx

Modular Safety Interface Category 4



MSI-m, MSI-mx

The modular safety interface MSI-m from Leuze lumiflex is used to temporarily suppress the safety function of protective devices during the transport of material (Muting). The version MSI-mx allows two protective devices to be muted independently, and it enables safety switches or Emergency Stop command devices to be integrated.

Advantages

- Safety interface, Type 4, in accordance with EN/IEC 61496-1 or EN-954-1, Cat. 4
- Standard initiators, light barriers or end switches can be connected as muting sensors
- RS 232 interface for PC-supported diagnostics function facilitates fast start-up
- 2 monitored muting lamps, warning output if one muting lamp fails
- 2 normally open contacts, 6 A max., or 2 failsafe pnp outputs, 0.5 A
- Plug-in connection terminals and plug-in output subassemblies
- Counting of relay operations with pre-failure message for preventive maintenance
- Status outputs for muting, sensor and switch status
- Warning output “relay life expectancy reached; recommend relay replacement”
- Housing width: 53 mm

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Areas of application

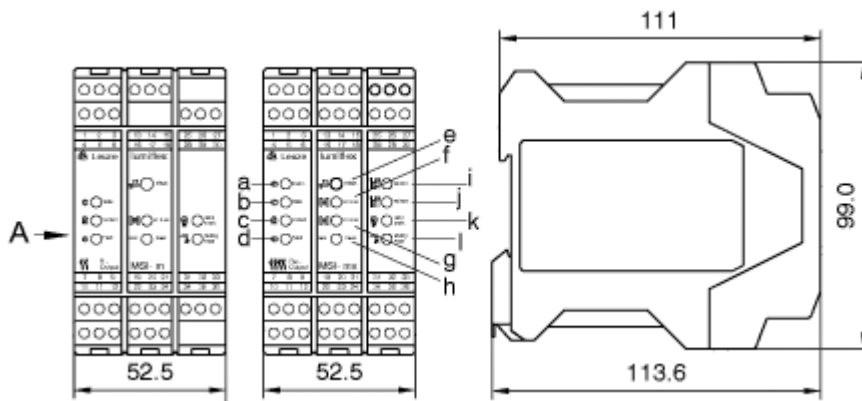
- Interface component with muting for optoelectronic protective devices, Type 4, Type 3 or Type 2
- Muting at one access and continuous rear area protection or Independent muting at two accesses to automated production cells
- System solution muting incorporating 2 safety switches for Emergency Stop disconnection

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Function

Features	MSI-m	MSI-mx
Maximum safety category (EN 954-1)	4	4
Stop category (IEC-, EN 60204-1)	0	0
Max. number of AOPDs, Type 2, or Emergency Stop command devices (Cat. 2)	2	4
Max. number of AOPDs, Type 4, or Emergency Stop command devices (Cat. 4)	1	2
Additional connectable safety switches, Cat. 4	0	2
Cross circuit monitoring	x	x
Start/restart interlock	x	x
Static relay monitoring	x	x
Dynamic relay monitoring	x	x
RS 232 diagnostics interface	x	x
Status output "system error"	x	x
Warning "relay replacement necessary"		x
Sequential muting	x	x
Parallel muting	x	x
Parallel double muting at two locations		x
Muting – time monitoring	x	x
Warning "defective muting lamp"	x	x
Secondary switching device (SSD) output		x

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Dimensional Drawings

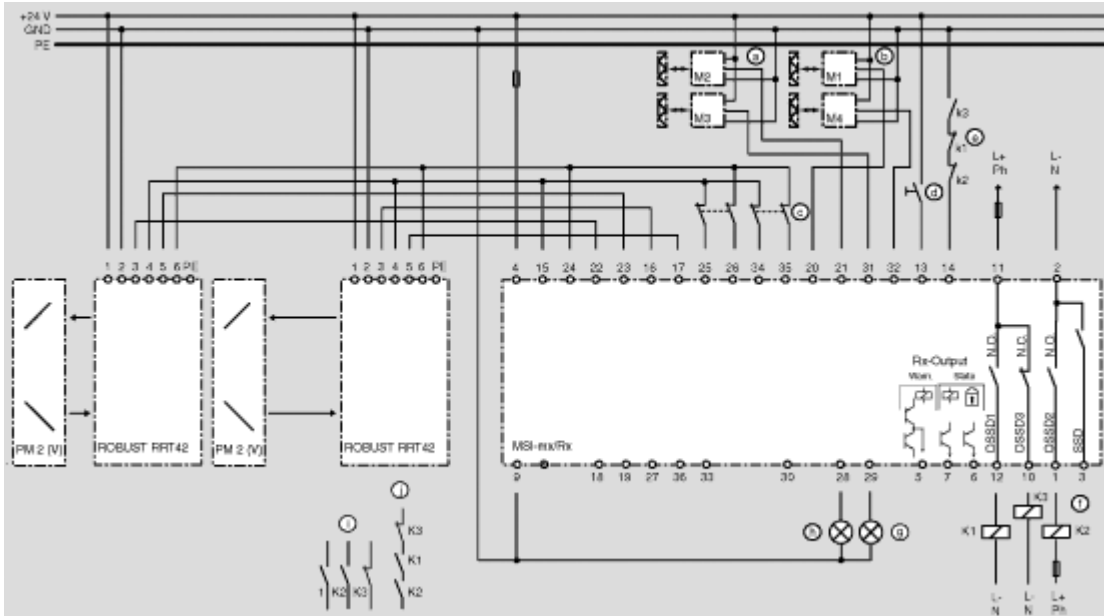


- a) Theoretical relay life expectancy reached (LED red)
- b) Safety output status (LED red/green)
- c) Start/restart interlock locked (LED yellow)
- d) Error in safety output module (LED red)
- e) RS 232 diagnostics output
- f) AOPDs 3 and 4 protected field free (LED green)
- g) AOPDs 1 and 2 protected field free (LED green)
- h) MSI error (LED red)
- i) Safety switch 1 "contacts closed" (LED green)
- j) Safety switch 2 "contacts closed" (LED green)
- k) Muting lamp 1 or 2 defective (LED red blinking)
- l) Muting error (LED red)

MSI-m, MSI-mx Electrical Connection

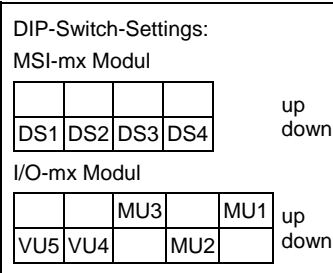
Application drawing MSI-mx/Rx

Modular Safety Interface MSI-mx/Rx with 2 ROBUST RRT 22.2 safety light grids , Type 2, and passive mirror PM2(V), parrall double muting.



- a) Muting sensors, Mutingrange 1
- b) Muting sensors, Mutingrange 2
- c) safety switch
- d) Start/restart button
- e) Feedback circuit for relay monitoring
- f) Positively guided relay or motor relay, provide suitable spark suppression
- g) Muting lamp 24V/5W, Mutingrange 1
- h) Muting lamp 24V/5W, Mutingrange 2
- i) Switching off path 2-channel*
- j) Switching off path 1-channel*

* always use both contacts in the switching off path



Pay attention to the operating manual of the components please.

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Technical Data

Safety Relay	MSI-m/R	MSI-mx/Rx	MSI-m/T	MSI-mx/Tx
Max. safety category (EN 954-1), Type in accordance with IEC-, EN 61496-1,	4			
Stop category (IEC-, EN 60204-1)	0			
Response time: AOPD Type 4 with semiconductor- output	18 ms		8 ms	
Response time: AOPD Type 4 with relay output, AOPD Type 2, safety switch	54 ms		44 ms	
Reactivation time	100 ms			
Supply voltage	24 V DC +/-15% (115 V/230V power supply as accessory)			
Max. Load on the safety outputs (2 normally open contacts, 2 pnp- semiconductor)	60V DC, 250 V AC, 6 A max.		24 V DC, 500 mA	
Max. Load on the safety outputs (1 normally open contact)	-	60V DC, 250 V AC, 6 A max.	-	-
Ambient temperature operation/storage	0..+55°/ -25...+70°			
Dimensions (HxBxT) [mm]	99 x 52,5 x 111,5 mm			