

## MSI-s, MSI-sx

### Modular Safety Interfaces, Category 4



### MSI-s, MSI-sx

The modular safety interface MSI-s from Leuze lumiflex serves as a link between Type 2, Type 3 or Type 4 optoelectronic protective devices and the machine controls. In addition, the MSI-sx version allows the connection of Emergency Stop command devices or safety switches.

### Advantages

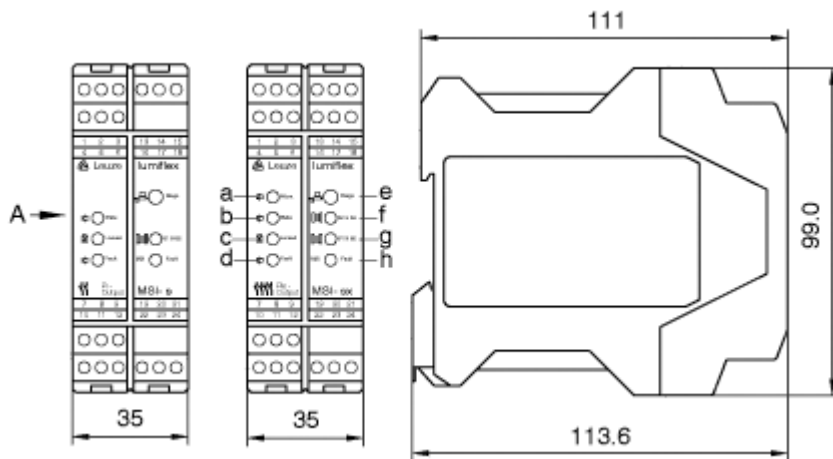
- Safety interface, Type 4, in accordance with EN/IEC 61496-1 or EN 954, Cat. 4
- 2 normally open contacts, 6 A max., or 2 failsafe pnp outputs, 0.5 A
- RS 232 interface for PC-supported diagnostics and easy start-up
- Status outputs "switch output status" and "start/restart interlock status"
- Plug-in connection terminals and plug-in output subassemblies
- Counting of relay operations with pre-failure message for preventive maintenance
- Warning output "relay life expectancy reached: recommend relay replacement"
- Housing width: 35 mm

## MSI-s, MSI-sx

### Function

Feature	MSI-s	MSI-sx
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
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
Secondary switching device (SSD) output		x

## MSI-s, MSI-sx Dimensional Drawings

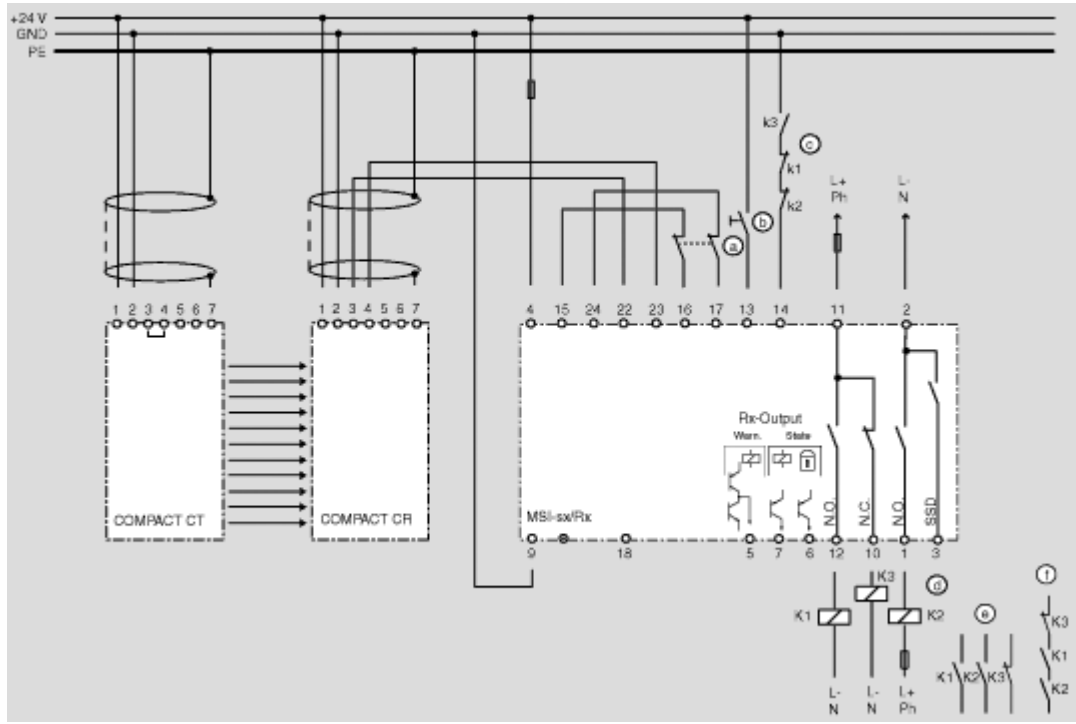


- a) Theoretical relay life expectancy reached (LED red)
- b) Safety output status (LED red/green)
- c) Start/restart interlock locked (LED yellow)
- d) Error in safety output module (LED red)
- e) RS 232 diagnostics output
- f) AOPDs 3 and 4 protected field free (LED green)
- g) AOPDs 1 and 2 protected field free (LED green)
- h) MSI error (LED red)


# MSI-s, MSI-sx Electrical Connection

## Application drawing MSI-sx/Rx

Modulares safety interface MSI-sx/Rx with COMPACT safety light curtain, Type 4 and safety switch.



- a) safety switch
- b) Start/restart button
- c) Feedback circuit for relay monitoring
- d) Positively guided relay or motor relay, provide suitable spark suppression
- e) Switching off path 2-channel\*
- f) Switching off path 1-channel\*

 Pay attention to the operating manual of the components please.

\* always use both contacts in the switching off path

**MSI-s, MSI-sx**  
**Technical Data**

Modular Safety Interface	MSI-s/R	MSI-sx/Rx	MSI-s/T	MSI-sx/Tx
Max. safety category (EN954-1), Type in accordance with IEC-, EN 61496-1,	4			
Stop Category (IEC-, EN60204-1)	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 normal open contacts 2pnp semiconductor)	60V DC, 250 V AC, 6 A max.		24 V DC, 500 mA	
Ambient temperature operation/storage	0..+55°/ -25...+70°			
Dimensions (HxBxT) [mm]	99 x 35 x 111,5 mm			