

 **Leuze electronic**

the **sensor** people

**MSI 100, MSI 200**  
Programmable Safety Controllers



## MSI Safety Devices from Leuze electronic.

### Programmed for safety.

With their easy handling during start-up, flexible configuration option and extensive on-board functionality, the MSI 100 and MSI 200 programmable Safety Controllers offer an optimum system solution for small- to medium-size machines.

Advantageous for all applications is the simple extensibility through safe I/O modules and through communication modules for integrating in fieldbus networks. Based on *MSIsafesoft* programming software, the Safety Device facilitate the efficient integration, communication and coordination of a machine's safety sensors through the use of function modules and logic blocks.



Safety Device	Main module, programmable	Extension module	Category in accordance with EN ISO 13849	Performance Level (PL) in accordance with EN ISO 13849-1	SIL in accordance with IEC 61508 and SILCL in accordance with IEC/EN 62061	Inputs/ outputs (OSSDs)	Bus interface for transferring diagnostic data
MSI 100	X	–	4	PL e	SIL 3	20 / 4	with MSI-FB
MSI 200	X	–				20 / 4	with MSI-FB
MSI-EM	–	X	–	–	–	8 / 4*	–
MSI-FB	–	X	–	–	–	–	PROFIBUS

\*configurable channels can be selected for input/output

All of the family members at a glance.



The combination of innovative connection systems (either screw terminal or spring-cage terminal), compact and space-saving styles, as well as the clear design result in the simple implementation of safety applications.

### Typical areas of application

- Robot cells
- Automatic processing centers
- Packaging machines
- Tool manufacturing
- Automated transfer stations

- Logical connection of up to 20 safe inputs and 4 safe switching outputs (OSSDs) for monitoring all safe functions in a compact device (just 67.5 mm wide)
- 4 message outputs, 2 test-pulse outputs, 2 ground-switching outputs. Additional inputs/outputs with optional safe extension modules
- Additional MSI-FB fieldbus modules for transferring diagnostic data to the PLC
- Simple device configuration via the convenient MSIsafesoft software tool with extensive device library (PLCopen-certified function blocks)



# MSI 100 – the **stand-alone** main module.



In automated systems, sensors and actuators must interact with one another functionally and safely. The necessary coordination is performed by the MSI 100 programmable Safety Controller as a stand-alone main module.

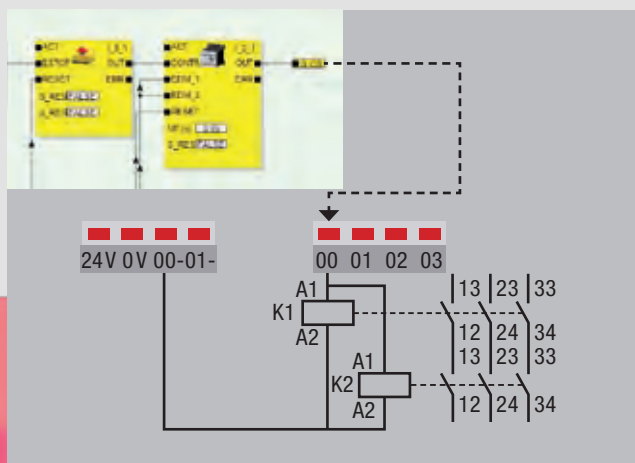
The controller monitors all safety functions, e.g. of E-STOP Buttons, Two-Hand Controls, Safety Switches as well as of Safety Light Curtains and Light Beam Safety Devices in machines and systems. A striking feature is the extremely compact, space-saving design: with an overall width of just 67.5 mm, the device makes available 20 safe inputs and 4 safe outputs.

Additional test-pulse and ground-switching outputs increase the safety of the monitoring circuits. All diagnostic data can be accessed via the message outputs of the device.

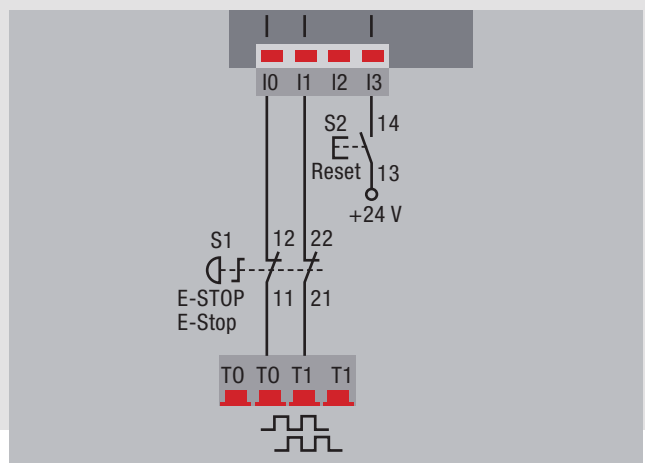
## Functions

- Freely configurable safety main module
- Monitors all safe functions in machines and systems
- Transfers diagnostic data to the PLC via MSI-FB fieldbus modules (option)
- Free choice of connection system: screw terminal blocks or spring-cage terminal blocks; both pluggable and changeable as desired

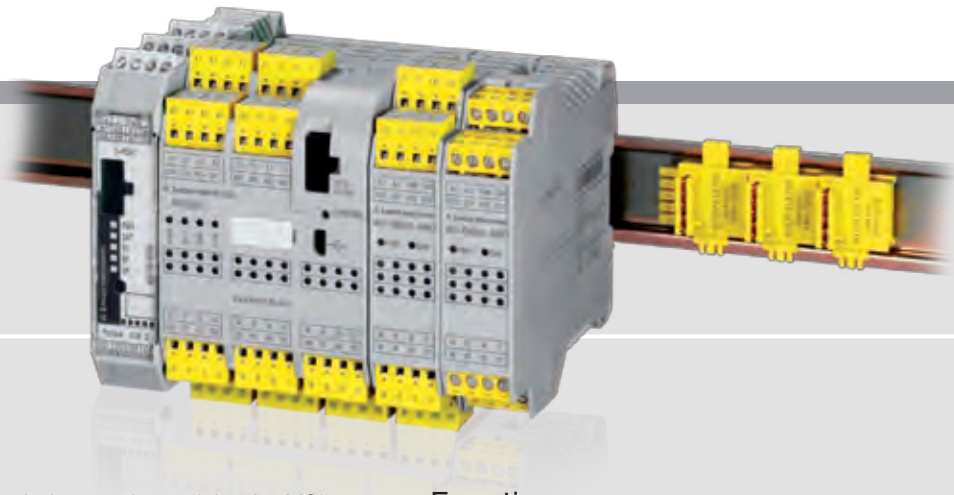
Ground-switching output



Test-pulse switching output



## MSI 200 – the **expandable** main module.



Unlike the MSI 100 stand-alone main module, the MSI 200 Safety Device facilitates the coupling of extension modules.

With the MSI 200 Safety Device, the number of inputs and outputs can be significantly increased through the use of the MSI-EM extension modules. As with the MSI 100, the MSI-FB fieldbus modules can be connected for transferring diagnostic data to the PLC.

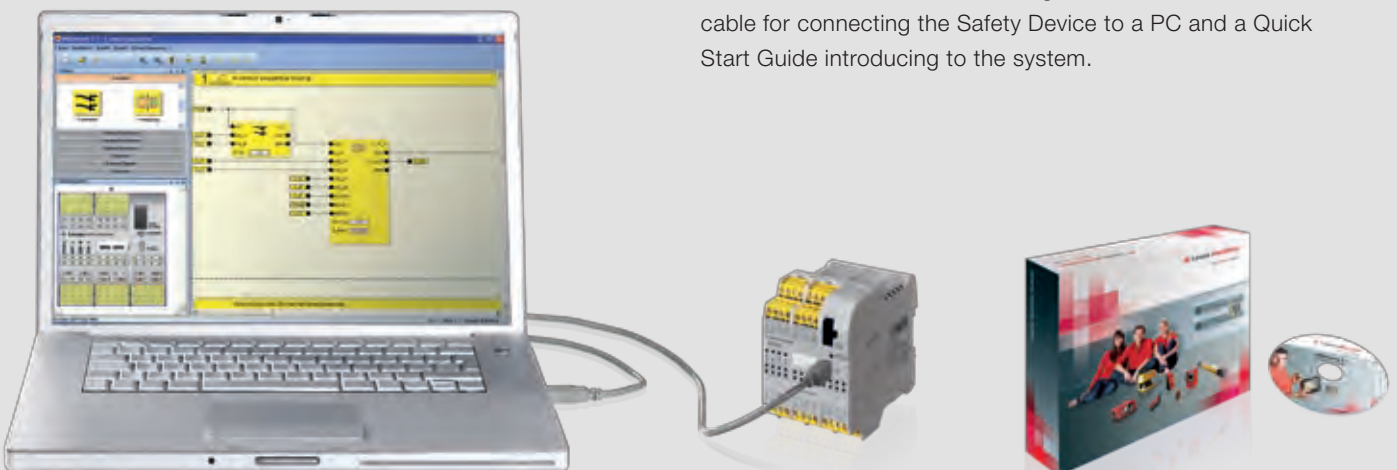
### Functions

Like the MSI 100, but also:

- Up to 10 MSI-EM safe I/O extension modules can be connected, i.e. a maximum of 140 inputs or 100 inputs and 44 outputs can be realized
- Comfortable and fast extension or modular exchange of components via the TBUS DIN rail connection system

### Start-up set for a quick system-installation.

The start-up set for the MSI 100 and MSI 200 main modules offers everything needed for rapid realization of the application. It includes MSIsafesoft configuration software, a USB cable for connecting the Safety Device to a PC and a Quick Start Guide introducing to the system.



## Profit from MSI accessories – extension modules and fieldbus modules.



### MSI-EM extension module

The MSI-EM extension module expands the MSI 200 programmable Safety Controller with 8 safe inputs and 4 freely configurable channels. These may be either safe inputs or outputs (OSSDs).

- 4 freely configurable channels-either safety outputs (OSSDs) of safe inputs
- Connect up to 10 MSI-EM and realize up to 140 inputs or 100 inputs and 44 outputs
- Designs with screw terminals as well as with spring-cage terminals – both types of terminal blocks can be freely interchanged
- Simple connection via TBUS DIN rail connector
- Compact housing width 22 mm

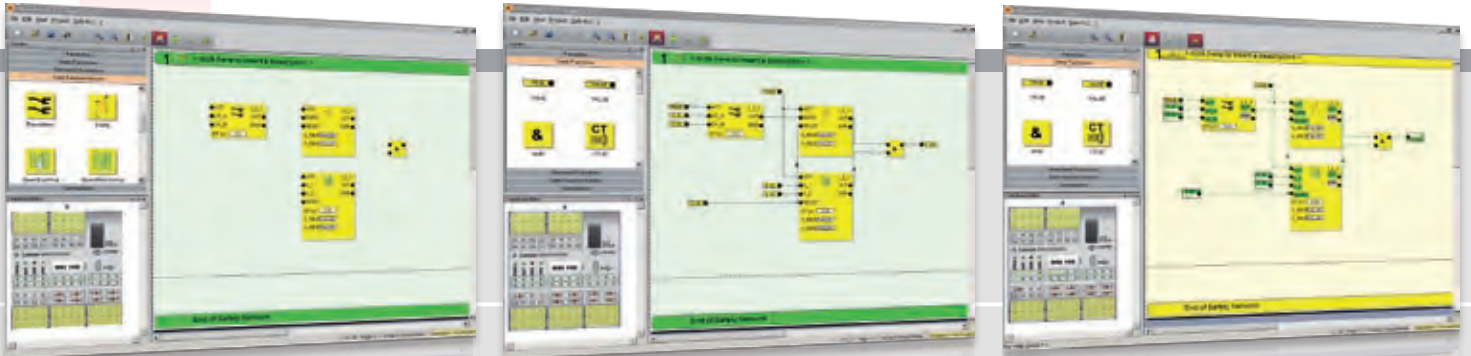


### MSI-FB-PB fieldbus module

The MSI-FB-PB fieldbus module for the MSI 100 and MSI 200 programmable Safety Controller facilitates the connection to PROFIBUS.

- Transfers diagnostic data (not safety-oriented)
- 4 additional inputs and 4 additional outputs for communication of the PLC with field devices (sensor / actuator systems)
- Certified according to DPV1 specification (EN 50170)
- Simple connection via TBUS DIN rail connector
- Compact housing width 22 mm

## MSIsafesoft – the simple drag & drop programming solution.



Select, configure, connect, test and save – finished!

The programming for defining the device function can be quickly and easily performed with MSIsafesoft software. PLCopen-certified function blocks, which can be integrated using drag & drop functionality, facilitate menu-driven and trouble-free configuration of every safety-circuit application.

1. Select and configure the safety function.
2. Connect inputs/outputs of the module with the safety functions.
3. Test the safety functions and save – finished.

Configuration at the click of a mouse reduces wiring expenditure and minimizes sources of faults. New protective equipment can be integrated quickly and reliably at any time.

- Extensive library with certified function modules
- Automatic logic testing
- Practical wiring inspection

Extensive simulation with the MSIsimsoft software module

Furthermore, MSIsafesoft configuration software helps the user avoid systematic faults. The integrated simulation mode and the automatic logic test make possible a complete check of the safety of the total system even before start-up.

Name	Value	Result 1	Result 2	Result 3	Subtype	Description	Terminal
01	0.01				SAFEBLOCK	Block 1	1
02	0.02				SAFEBLOCK	Block 2	2
03	0.03				SAFEBLOCK	Block 3	3
04	0.04				SAFEBLOCK	Block 4	4
05	0.05				SAFEBLOCK	Block 5	5
06	0.06				SAFEBLOCK	Block 6	6
07	0.07				SAFEBLOCK	Block 7	7
08	0.08				SAFEBLOCK	Block 8	8
09	0.09				SAFEBLOCK	Block 9	9
10	0.10				SAFEBLOCK	Block 10	10
11	0.11				SAFEBLOCK	Block 11	11
12	0.12				SAFEBLOCK	Block 12	12
13	0.13				SAFEBLOCK	Block 13	13
14	0.14				SAFEBLOCK	Block 14	14
15	0.15				SAFEBLOCK	Block 15	15
16	0.16				SAFEBLOCK	Block 16	16
17	0.17				SAFEBLOCK	Block 17	17
18	0.18				SAFEBLOCK	Block 18	18
19	0.19				SAFEBLOCK	Block 19	19
20	0.20				SAFEBLOCK	Block 20	20
21	0.21				SAFEBLOCK	Block 21	21
22	0.22				SAFEBLOCK	Block 22	22
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96	0.96				SAFEBLOCK	Block 96	96
97	0.97				SAFEBLOCK	Block 97	97
98	0.98				SAFEBLOCK	Block 98	98
99	0.99				SAFEBLOCK	Block 99	99
100	1.00				SAFEBLOCK	Block 100	100

