

## Technical data sheet

## Safety control

Part no.: 50132984

MSI 410-01

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For illustration purposes only



Technical data

Basic data

|                     |                                |
|---------------------|--------------------------------|
| Series              | MSI 410                        |
| Type                | Safety control                 |
| Application         | Monitoring of safety functions |
| Number of safe I/Os | 20 IN, 4 OUT                   |

Functions

|           |                                                            |
|-----------|------------------------------------------------------------|
| Functions | 24 safe I/Os                                               |
|           | 40 certified function modules                              |
|           | Configuration via mini USB                                 |
|           | Expandable with up to 12 I/O modules                       |
|           | Freely configurable with MSI.designer (license-free)       |
|           | Modularly expandable safety control                        |
|           | Program memory in SD card format (512 MB)                  |
|           | Switching current 4 A per output                           |
|           | Transfer of diagnostic data via external fieldbus gateways |
|           | Up to 300 function modules in a project                    |

Characteristic parameters

|                             |                                       |
|-----------------------------|---------------------------------------|
| SIL                         | 3, IEC 61508                          |
| SILCL                       | 3, IEC/EN 62061                       |
| Performance Level (PL)      | Up to and including e, EN ISO 13849-1 |
| PFH <sub>D</sub>            | 4,3E-09 per hour                      |
| Mission time T <sub>M</sub> | 20 years, EN ISO 13849-1              |
| Category                    | 4, EN ISO 13849                       |

Electrical data

|                                         |                                           |
|-----------------------------------------|-------------------------------------------|
| Performance data                        |                                           |
| Supply voltage U <sub>B</sub>           | 24 V, DC, -30 ... 25 %                    |
| Power consumption, max.                 | 3.3 W                                     |
| Output circuit                          |                                           |
| Number of outputs                       | 4 Piece(s)                                |
| Number of configurable inputs/ outputs  | 0 Piece(s)                                |
| Type of digital output                  | Transistor                                |
| Short circuit protection, outputs       | Yes                                       |
| Min. voltage permitted at the output    | 16.2 V                                    |
| Max. voltage permitted at the output    | 30 V                                      |
| Nominal output current per output, max. | ≤ 12 A / 8 ms                             |
| Control circuit                         |                                           |
| Number of inputs                        | 20 Piece(s)                               |
| Voltage permitted at the input          | HIGH: 13 ... 30 V<br>LOW: -5 ... +5 V     |
| Input current at signal 1               | HIGH: typ. 2.3 mA / max. 6 mA<br>LOW: < 2 |

Service interface

|          |                            |
|----------|----------------------------|
| Type     | USB                        |
| USB      |                            |
| Function | Configuration via software |

Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 2 Piece(s) |
|-----------------------|------------|

Connection 1

|                    |                |
|--------------------|----------------|
| Function           | Signal IN      |
|                    | Signal OUT     |
|                    | Voltage supply |
| Type of connection | Terminal       |
| Type of terminal   | Screw terminal |
| No. of pins        | 32 -pin        |

Connection 2

|                    |                         |
|--------------------|-------------------------|
| Function           | Configuration interface |
| Type of connection | USB                     |
| Connector type     | USB 2.0 Mini-A          |

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 1.0 mm², wire                       |
|                           | 2 x 0.25 to 1.0 mm², wire with wire-end sleeve |

Mechanical data

|                       |                          |
|-----------------------|--------------------------|
| Dimension (W x H x L) | 45 mm x 96.5 mm x 121 mm |
| Net weight            | 290 g                    |
| Housing color         | Gray                     |
| Type of fastening     | Snap-on mounting         |

Environmental data

|                                    |               |
|------------------------------------|---------------|
| Ambient temperature, operation     | -25 ... 65 °C |
| Ambient temperature, storage       | -25 ... 70 °C |
| Relative humidity (non-condensing) | 10 ... 95 %   |

Certifications

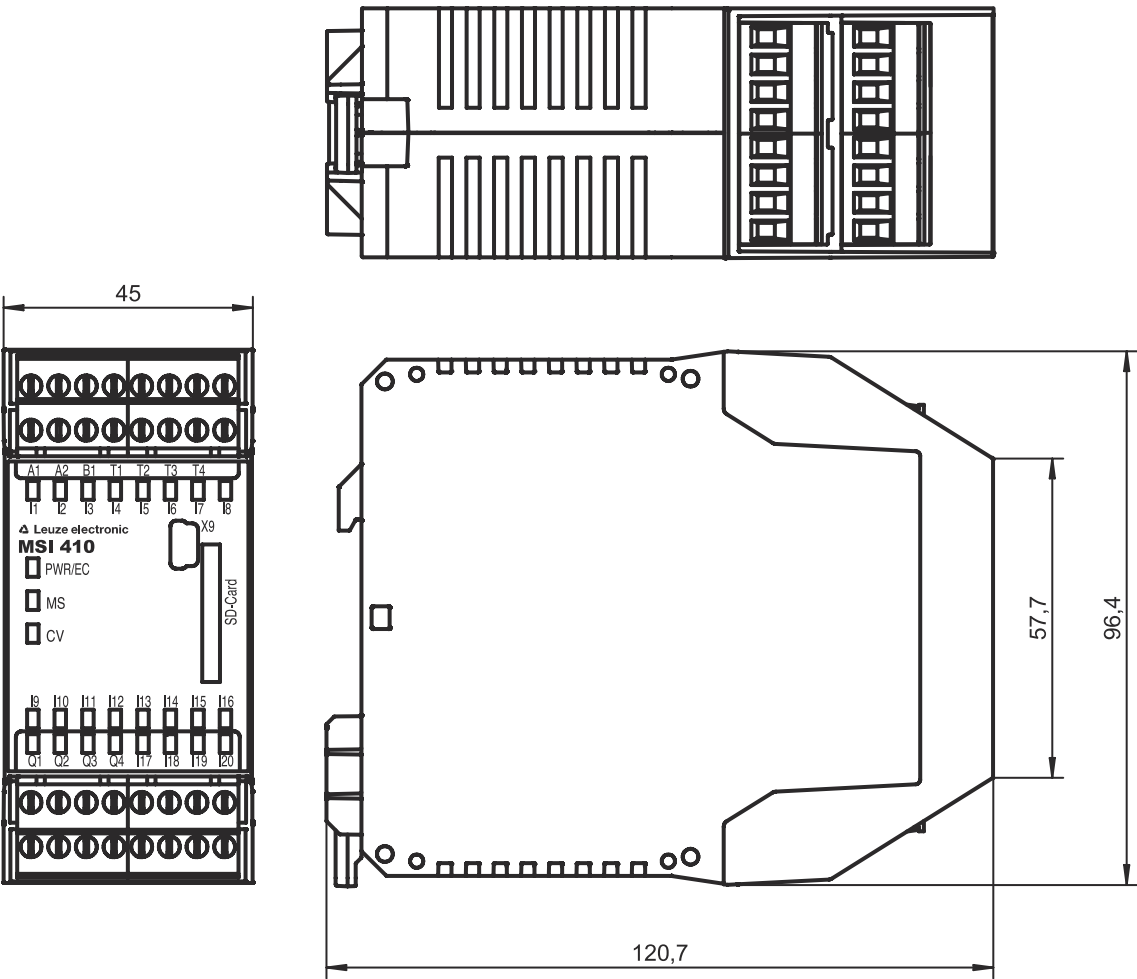
|                                                            |                            |
|------------------------------------------------------------|----------------------------|
| Degree of protection                                       | IP 20                      |
| Protection class                                           | III                        |
| Certifications                                             | c UL US<br>TÜV Rheinland   |
| Vibration resistance                                       | 5 ... 150 Hz               |
| Test procedure for oscillation in accordance with standard | EN 60068-2-6               |
| Shock resistance, single shock                             | 30 g, 11 ms, EN 60068-2-27 |
| Shock resistance, continuous shock                         | 10 g, 16 ms, EN 60068-2-29 |

Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85371091 |
| ECLASS 5.1.4          | 27243001 |
| ECLASS 8.0            | 27243101 |
| ECLASS 9.0            | 27243101 |
| ECLASS 10.0           | 27243101 |
| ECLASS 11.0           | 27243101 |
| ECLASS 12.0           | 27243101 |
| ECLASS 13.0           | 27243101 |
| ECLASS 14.0           | 27243101 |
| ETIM 5.0              | EC002538 |
| ETIM 6.0              | EC002538 |
| ETIM 7.0              | EC002538 |
| ETIM 8.0              | EC002538 |
| ETIM 9.0              | EC002538 |

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

|                    |                |
|--------------------|----------------|
| Function           | Signal IN      |
|                    | Signal OUT     |
|                    | Voltage supply |
| Type of connection | Terminal       |
| Type of terminal   | Screw terminal |
| No. of pins        | 32 -pin        |

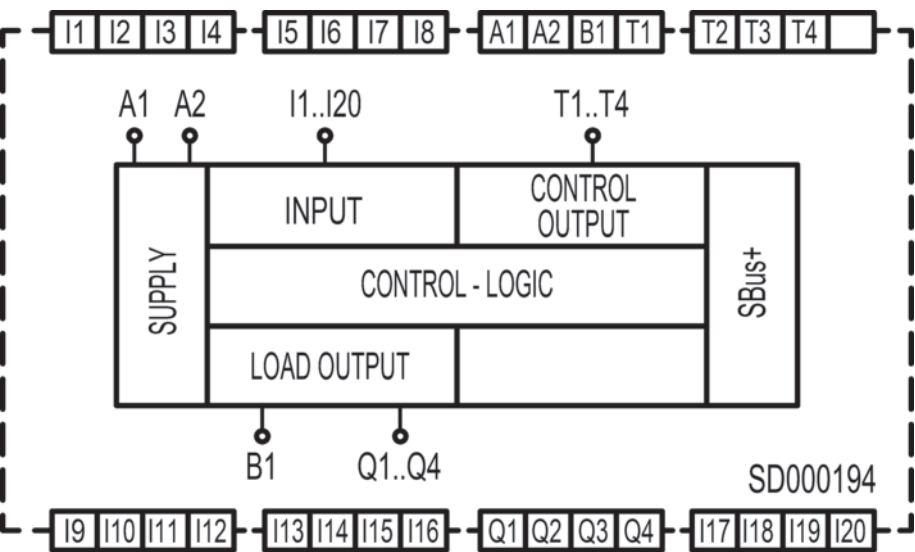
| Terminal | Assignment              |
|----------|-------------------------|
| A1       | +24 V                   |
| A2       | GND                     |
| B1       | +24 V (outputs Q1 - Q4) |
| I1       | Safe input              |
| I2       | Safe input              |
| I3       | Safe input              |
| I4       | Safe input              |

Electrical connection

| Terminal | Assignment         |
|----------|--------------------|
| I5       | Safe input         |
| I6       | Safe input         |
| I7       | Safe input         |
| I8       | Safe input         |
| I9       | Safe input         |
| I10      | Safe input         |
| I11      | Safe input         |
| I12      | Safe input         |
| I13      | Safe input         |
| I14      | Safe input         |
| I15      | Safe input         |
| I16      | Safe input         |
| I17      | Safe input         |
| I18      | Safe input         |
| I19      | Safe input         |
| I20      | Safe input         |
| Q1       | Safe output        |
| Q2       | Safe output        |
| Q3       | Safe output        |
| Q4       | Safe output        |
| T1       | Test signal output |
| T2       | Test signal output |
| T3       | Test signal output |
| T4       | Test signal output |

| Connection 2       | X9                      |
|--------------------|-------------------------|
| Function           | Configuration interface |
| Type of connection | USB                     |
| Connector type     | USB 2.0 Mini-A          |

Circuit diagrams



Notes



Observe intended use!



The product may only be put into operation by competent persons.

Only use the product in accordance with its intended use.

Accessories

Start-up/diagnosis

|                                                                                  | Part no. | Designation          | Article      | Description                                                                                                                                 |
|----------------------------------------------------------------------------------|----------|----------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50117011 | KB USB A - USB miniB | Service line | Suitable for interface: USB<br>Connection 1: USB<br>Connection 2: USB<br>Shielded: Yes<br>Cable length: 1,500 mm<br>Sheathing material: PVC |

General

|                                                                                     | Part no.   | Designation  | Article        | Description                |
|-------------------------------------------------------------------------------------|------------|--------------|----------------|----------------------------|
|  | 50132996 * | MSI-SD-CARD  | Program memory |                            |
|  | 50133002   | MSI-SD-COVER | Cover          | Contains: 10x MSI-SD-COVER |

\* Necessary accessories, please order separately

Services

|                                                                                    | Part no. | Designation | Article          | Description                                                                                                                                                           |
|------------------------------------------------------------------------------------|----------|-------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | S981043  | CS40-E-312  | Hourly rate      | Details: Location and content to be agreed upon.<br>Conditions: Price not including travel costs and, if applicable, accommodation expenses.                          |
|  | S981029  | CS40-T-110  | Product training | Details: Location and content to be agreed upon, duration: max. 10 hours.<br>Conditions: Price not including travel costs and, if applicable, accommodation expenses. |

Accessories

| Note                                                                             |                                                                                                                                  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|  | <p>A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.</p> |