

## Technical data sheet

### Safety control

Part no.: 50132987  
MSI 420-03



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Figure can vary



## Technical data

### Basic data

Series	MSI 420
Application	Monitoring of safety functions
Number of safe I/Os	16 IN, 4 OUT, 4 programmable I/O

### Functions

Functions	Additional I/O extensions available (optional) Configurable safety control Configuration via MSI.designer software Ethernet interface Removable program memory (must be ordered separately, part no. 50132996) Transfer of diagnostic data via external fieldbus modules, e.g. MSI-FB-PROFIBUS (optional) USBmini interface
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### 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>	0.0000000043 per hour
Mission time T <sub>M</sub>	20 years, EN ISO 13849-1
Category	4, EN ISO 13849

### Electrical data

<b>Performance data</b>	
Supply voltage U <sub>B</sub>	24 V, DC, -30 ... 25 %
Power consumption, max.	3.3 W
<b>Output circuit</b>	
Number of outputs	8 Piece(s)
Max. number of integrated digital outputs	8 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
Output current	4 A
<b>Control circuit</b>	
Number of inputs	16 Piece(s)
Voltage permitted at the input	30 V
Max. rated control supply voltage at DC	30 V
Min. rated control supply voltage at DC	15.6 V
Input current at signal 1	2.3 mA

### Interface

Type	Internal bus (SBUS+)
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### Service interface

Type	Ethernet, USB
<b>Ethernet</b>	
Function	Configuration via software
<b>USB</b>	
Function	Configuration via software

### Connection

Number of connections	3 Piece(s)
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#### Connection 1

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

#### Connection 2

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

#### Connection 3

Function	BUS OUT
Type of connection	RJ45

#### Cable properties

Connection cross sections	2 x 0.2 to 1.5 mm <sup>2</sup> , wire 2 x 0.2 to 1.5 mm <sup>2</sup> , wire 2 x 0.25 to 1.5 mm <sup>2</sup> , wire with wire-end sleeve (pressed in trapezium shape)
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### Mechanical data

Dimension (W x H x L)	45 mm x 107 mm x 121 mm
Net weight	290 g
Housing color	Gray
Type of fastening	Snap-on mounting

### Operation and display

Type of display	LED indicator
Type of configuration	Software

### Environmental data

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

### Certifications

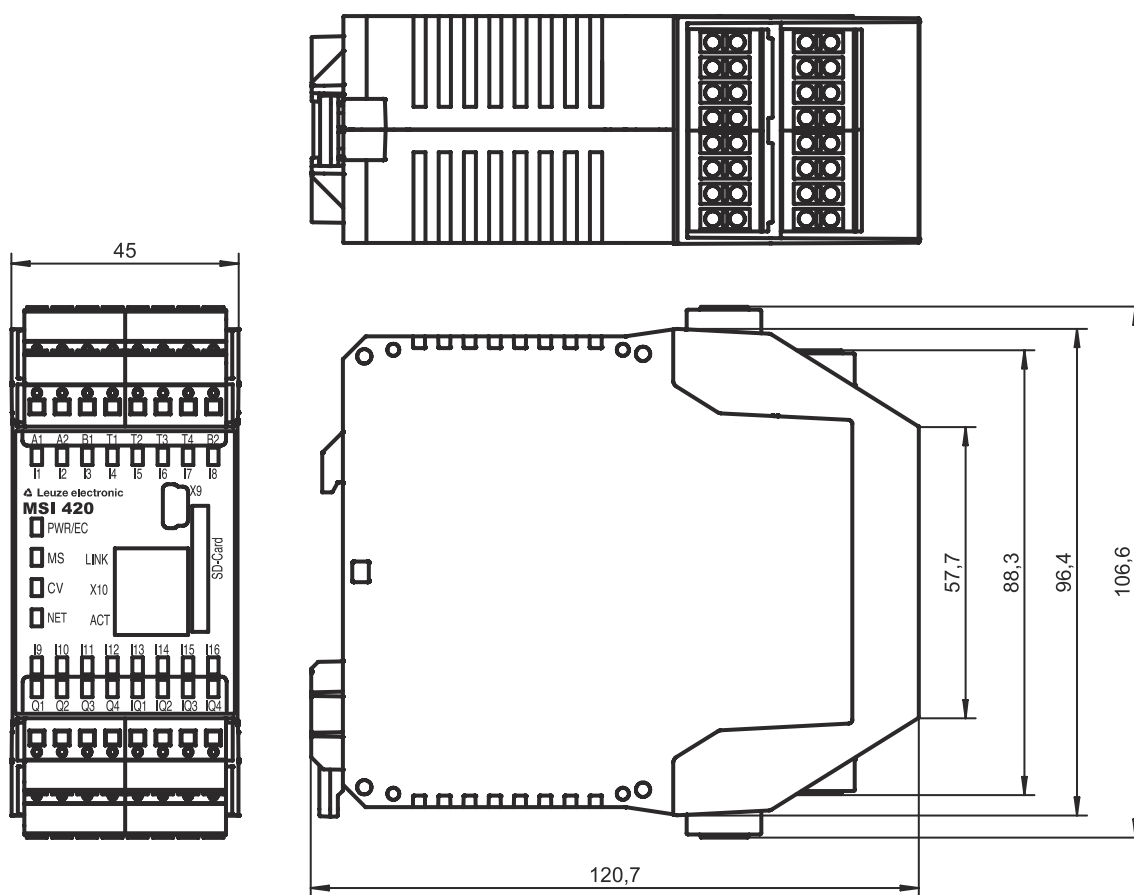
Degree of protection	IP 20
Protection class	III
Certifications	c UL US TÜV Rheinland
Vibration resistance	5 ... 150 Hz
Test procedure for oscillation in accordance with standard	EN 60068-2-6
Shock resistance, single shock	30 g, 11 ms, EN 60068-2-27
Shock resistance, continuous shock	10 g, 16 ms, EN 60068-2-29

## Technical data

Customs tariff number	85371091
eCl@ss 5.1.4	27243001
eCl@ss 8.0	27243101
eCl@ss 9.0	27243101
eCl@ss 10.0	27243101
eCl@ss 11.0	27243101
ETIM 5.0	EC002538
ETIM 6.0	EC002538
ETIM 7.0	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	Spring-cage terminal
No. of pins	32 -pin

Pin	Pin assignment
	A1
1	+24V
	A2
2	GND
	B1
3	+24 V (outputs Q1 - Q4)
	B2
4	+24 V (outputs IQ1 - IQ4)
	I1
5	Safe input
	I2
6	Safe input
	I3
7	Safe input
	I4
8	Safe input
	I5
9	Safe input
	I6
10	Safe input
	I7
11	Safe input
	I8
12	Safe input
	I9
13	Safe input
	I10
14	Safe input
	I11
15	Safe input
	I12
16	Safe input
	I13
17	Safe input
	I14
18	Safe input
	I15
19	Safe input
	I16
20	Safe input
	IQ1
21	Safe input/output (configurable)
	IQ2
22	Safe input/output (configurable)
	IQ3
23	Safe input/output (configurable)
	IQ4
24	Safe input/output (configurable)
	Q1
25	Safe output
	Q2

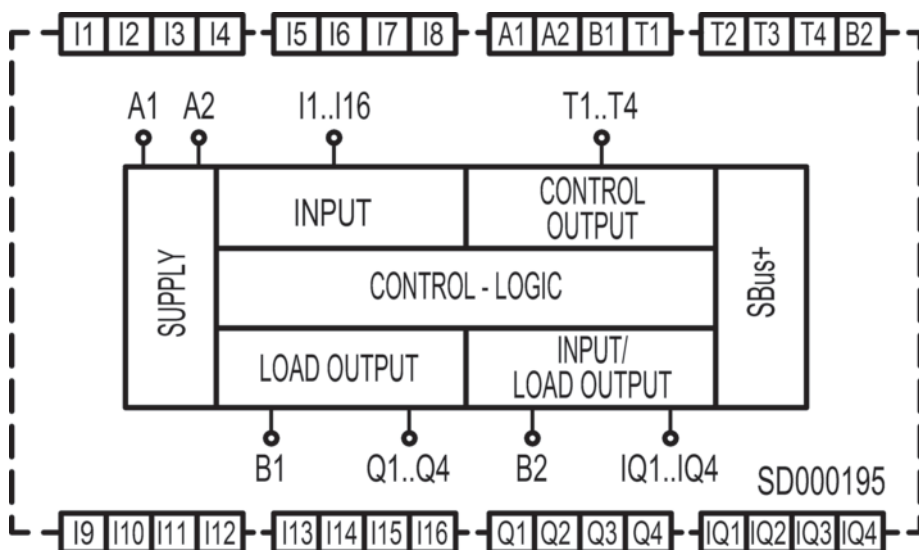
# Electrical connection

Pin	Pin assignment
26	Safe output Q3
27	Safe output Q4
28	Safe output T1
29	Test signal output T2
30	Test signal output T3
31	Test signal output T4
32	Test signal output

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

Connection 3	X10
Function	BUS OUT
Type of connection	RJ45

## Circuit diagrams



## Notes

<b>Observe intended use!</b>	
	<ul style="list-style-type: none"> <li>↪ The product may only be put into operation by competent persons.</li> <li>↪ Only use the product in accordance with its intended use.</li> </ul>

## Accessories

### Start-up/diagnosis

	Part no.	Designation	Article	Description
	50117011	KB USB A - USB miniB	Service line	Suitable for interface: USB Connection 1: USB Connection 2: USB Shielded: Yes Cable length: 1,500 mm 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 for "Safety Engineering"	Details: Location and content to be agreed upon. Conditions: Price not including travel costs and, if applicable, accommodation expenses. Restrictions: Travel costs and accommodation expenses charged separately and, if applicable, according to expenditure.
	S981029	CS40-T-110	Product training	Details: Location and content to be agreed upon, duration: max. 10 hours. Conditions: Price not including travel costs and, if applicable, accommodation expenses. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.

## Accessories

### Note



🔗 A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.