

Part no.: 547812  
**MSI102**  
**Safety control**



Figure can vary

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Part no.: 547812 – MSI102 – Safety control

## Technical data

<b>Basic data</b>	
Series	MSI 100
Application	Monitoring of safety functions
Number of safe I/Os	20 IN, 4 OUT
<b>Functions</b>	
Functions	Freely configurable safety main module Monitoring of all safe functions in machines and systems Transfer of diagnostic data via MSI-FB fieldbus module (optional)
<b>Characteristic parameters</b>	
SIL	3 , IEC 61508
SILCL	3 , IEC/EN 62061
Performance Level (PL)	e , EN ISO 13849-1
MTTF <sub>d</sub>	8,324 years , EN ISO 13849-1
PFH <sub>D</sub>	0.0000000137 per hour
PFH <sub>D</sub>	1.4E-08 per hour
Mission time T <sub>M</sub>	20 years , EN ISO 13849-1
Category	4 , EN ISO 13849
<b>Electrical data</b>	
Protective circuit	Overvoltage protection Short circuit protected
<b>Performance data</b>	
Supply voltage U <sub>B</sub>	24 V , DC , -15 ... 10 %
Current consumption (without load), max.	200 mA
Overvoltage category	III
<b>Input data logic</b>	
Diagnostics display	4 LEDs (green, red)
Reaction time, max.	30 ms
Nominal input voltage U <sub>N</sub>	24 V DC , -15 ... 10 % , (A1/A2)
Typ. current consumption at U <sub>N</sub> (A1/A2)	110 mA
Bridging of voltage drops	20 ms
<b>Inputs</b>	
Number of safe inputs	20 Piece(s) , (up to SIL 3 / IEC 62061)
Status indicator	20 LEDs (green)
Nominal voltage U <sub>N</sub>	24 V DC , (to ground A1/A2)
Typ. current consumption at U <sub>N</sub>	4 mA
Signal level at "0", max.	5 V
Signal level at "1", min.	11 V

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<b>Outputs</b>	
Number of signal outputs	4 Piece(s)
Number of safe semiconductor outputs	4 Piece(s) , (Cat. 4 / EN ISO 13849-1 / EN 954)
Number of ground-switching outputs	2 Piece(s)
Number of cycle outputs	2 Piece(s)
<b>Output data</b>	
Nominal voltage	24 V DC , -15 ... 10 % , (24 V / 0 V)
Status indicator	4 LEDs (green)
Limiting continuous current	2 A
<b>Clock outputs</b>	
Nominal voltage	24 V DC , (A1/A2)
Limiting continuous current	100 mA
<b>Signal outputs</b>	
Nominal voltage	24 V DC , (A1/A2)
Limiting continuous current	100 mA

<b>Timing</b>	
Readiness delay	4,000 ms
Recovery time, restart, max.	5 ms

<b>Service interface</b>	
Type	USB
<b>USB</b>	
Function	Configuration via software

<b>Connection</b>	
Number of connections	3 Piece(s)
<b>Connection 1</b>	
Type of connection	Terminal
Function	Connection to device Signal IN Signal OUT Voltage supply
Type of terminal	Spring-cage terminal
No. of pins	40 -pin
<b>Connection 2</b>	
Type of connection	USB
Function	Configuration interface
Connector type	USB 2.0 Mini-A
<b>Connection 3</b>	
Type of connection	TBUS DIN rail
Function	Internal communication interface
<b>Cable properties</b>	
Connection cross sections	0.2 to 1.5 mm <sup>2</sup>

<b>Mechanical data</b>	
Dimension (W x H x L)	67.5 mm x 112 mm x 114.5 mm
Housing material	Plastic , Unreinforced polyamide PA
Net weight	420 g
Housing color	Gray

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Type of fastening	Snap-on mounting
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### Environmental data

Ambient temperature, operation	-20 ... 55 °C
Ambient temperature, storage	-20 ... 70 °C

### Certifications

Degree of protection	IP 20 (housing) IP 20 (terminals)
Certifications	c UL US TÜV Rheinland

### Classification

Customs tariff number	85371091
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449

## Electrical connection

Connection 1	
Type of connection	Terminal
Function	Connection to device Signal IN Signal OUT Voltage supply
Type of terminal	Spring-cage terminal
No. of pins	40 -pin

Terminal	Assignment
A1	Supply for logic- or signal output
A1	Supply for logic- or signal output
A2	Supply for logic- or signal output
A2	Supply for logic- or signal output
T0	Test pulse output
T0	Test pulse output
T1	Test pulse output
T1	Test pulse output
24 V	Supply for safe output
0 V	Supply for safe output
O0-	Ground-switching output
O1-	Ground-switching output
M0	Signal output
M1	Signal output
M2	Signal output
M3	Signal output
I0	Safe input
I1	Safe input
I2	Safe input

Terminal	Assignment
I3	Safe input
I4	Safe input
I5	Safe input
I6	Safe input
I7	Safe input
I8	Safe input
I9	Safe input
I10	Safe input
I11	Safe input
O0	Safe output
O1	Safe output
O2	Safe output
O3	Safe output
I12	Safe input
I13	Safe input
I14	Safe input
I15	Safe input
I16	Safe input
I17	Safe input
I18	Safe input
I19	Safe input

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

Connection 3	
Type of connection	TBUS DIN rail
Function	Internal communication interface

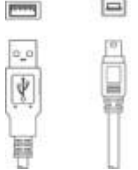
## Accessories

### Connection technology - Connectors

	Part no.	Designation	Article	Description
	547823	AC-MSI-TC	Accessories set	Contains: 10x MSI TBUS standard connection plug (for fieldbus gateways)
	547821	AC-MSI-TCS	Accessories set	Contains: 10x MSI TBUS safety connection plug

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## 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