

Technical data sheet

Safe I/O module

Part no.: 547814

MSI-EM202-8I4IO

Contents

- Technical data
- Electrical connection



Figure can vary



Technical data

Basic data

Series	MSI-EM
Application	Monitoring of safety functions
Number of safe I/Os	8 IN, 4 programmable I/O

Functions

Functions	Extension module for the MSI 200 programmable safety controller Extension with 8 safe inputs and 4 safe, freely configurable channels-either as safe inputs or outputs (OSSDs) Monitoring of all safe functions in machines and systems
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Characteristic parameters

SIL	3, IEC 61508
SILCL	3, IEC/EN 62061
Performance Level (PL)	e, EN ISO 13849-1
PFH _D	0.00000016 per hour
Mission time T _M	20 years, EN ISO 13849-1
Category	4, EN ISO 13849

Electrical data

Protective circuit	Overvoltage protection
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Performance data

Supply voltage U _B	24 V, DC, -15 ... 10 %
Overvoltage category	III

Input data logic

Diagnostics display	2 LEDs (green, red)
Reaction time, max.	30 ms
Nominal input voltage U _N	24 V DC, -15 ... 10 %, (A1/A2)
Typ. current consumption at U _N (A1/A2)	100 mA
Bridging of voltage drops	20 ms

Inputs

Number of safe inputs	12 Piece(s), (up to SIL 3 / IEC 62061) of which 4 are configurable as input or output
Status indicator	1 LED (green) per input
Nominal voltage U _N	24 V DC
Typ. current consumption at U _N	4 mA
Signal level at "0", max.	5 V
Signal level at "1", min.	11 V

Outputs

Number of safe semiconductor outputs	4 Piece(s), (Cat. 4 / EN ISO 13849-1 / EN 954) for configuration of the 4 inputs/outputs as outputs
Number of clock/signal outputs	2 Piece(s), Can be used as pulse output or signal output depending on configuration

Output data

Nominal voltage	24 V DC, -15 ... 10 %
Status indicator	1 LED (green) per output
Limiting continuous current	0.5 A

Clock outputs

Nominal voltage	24 V DC
Limiting continuous current	50 mA

Signal outputs

Nominal voltage	24 V DC
Limiting continuous current	50 mA

Timing

Readiness delay	10,000 ms
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Connection

Number of connections	2 Piece(s)
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Connection 1

Function	Connection to device Signal IN Signal OUT Voltage supply
Type of connection	Terminal
Type of terminal	Spring-cage terminal
No. of pins	16 -pin

Connection 2

Function	Internal communication interface
Type of connection	TBUS DIN rail

Cable properties

Connection cross sections	0.2 to 1.5 mm ²
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Mechanical data

Dimension (W x H x L)	22.5 mm x 114.5 mm x 112 mm
Housing material	Plastic
Plastic housing	Unreinforced polyamide PA
Net weight	180 g
Housing color	Gray
Type of fastening	Snap-on mounting

Environmental data

Ambient temperature, operation	-5 ... 45 °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
ECLASS 5.1.4	27371800
ECLASS 8.0	27371819
ECLASS 9.0	27371819
ECLASS 10.0	27371819
ECLASS 11.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

Electrical connection

Connection 1

Function	Connection to device
	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Terminal
Type of terminal	Spring-cage terminal
No. of pins	16 -pin

Terminal	Assignment
A1	Supply voltage
A2	Supply voltage
TM0	Test pulse output or signal output
TM1	Test pulse output or signal output
IO0	Input or safe output
IO1	Input or safe output
IO2	Input or safe output
IO3	Input or safe output
I4	Input
I5	Input
I6	Input
I7	Input
I8	Input
I9	Input
I10	Input
I11	Input

Connection 2

Function	Internal communication interface
Type of connection	TBUS DIN rail