Extension module - PSR-SPP- 24DC/TS/SDI8/SDIO4 - 2986041

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The figure shows a version with a screw connection

PSR-TRISAFE-M I/O extension module with 8 safe inputs and 4 safe parameterizable channels (choice of safe inputs or outputs), 2 clock/signal outputs; up to SILCL 3, Cat. 4/PLe, SIL 3, EN 50156, Push-in terminal block

Your advantages

- ☑ Flexible extension with safe inputs and outputs
- ☑ Narrow 22.5 mm housing
- ☑ 4 safe digital outputs or 4 additional digital inputs (that can be configured using SAFECONF)
- ☑ Multifunctional use for a wide range of safety functions
- ☑ Easy graphical configuration instead of complex programming
- ☑ Quick startup thanks to user-friendly simulation and test options
- ☑ Including PSR-TBUS connector (DIN rail connector) for adapting to the PSR-TRISAFE-M master module
- ☑ Up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- ☑ 8 safe digital inputs
- ☑ 2 alarm outputs or 2 clock outputs (that can be configured using SAFECONF)
- ☑ EN 50156

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 451369
GTIN	4046356451369

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area

Dimensions

Width	22.5 mm

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Technical data

Dimensions

Height	112 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-20 °C ... 70 °C
Max. permissible relative humidity (operation)	75 % (On average, 85 % occasionally)
Max. permissible humidity (storage/transport)	75 % (On average, 85 % occasionally)
Air pressure (operation)	70 kPa ... 108 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (up to 3500 m above sea level)
Maximum altitude	max. 2000 m (See Appendix "Using PSR-TRISAFE modules at altitudes greater than 2000 m above sea level")

Power supply

Rated control circuit supply voltage U_S	24 V DC (Electrical supply via PSR-TBUS)
	18 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)
Rated control supply current I_S	Electrical supply via PSR-TBUS
	typ. 51.6 mA (No inputs or outputs set, A1/A2 open)
	typ. 66 mA (All inputs and safe outputs set)
Filter time	typ. 20 ms (Load-dependent, in the event of voltage dips at U_S)
Status display	1 x green LED, 1 x red LED
Protective circuit	Yes, within the scope of the operating voltage limits

Digital inputs

Description of the input	Digital input
Number of inputs	12 (Of which 4 can be configured as input or output)
Input voltage range "0" signal	0 V DC ... 5 V DC (for safe Off)
Input voltage range "1" signal	11 V DC ... 30 V DC
Current consumption	typ. 4 mA
Cable length	max. 2000 m
Status display	12 LEDs (green)

Digital outputs

Number of outputs	4 (If the configurable inputs/outputs are used as outputs)
Nominal output voltage	24 V DC (Supply via A1/A2)
Nominal output voltage range	18 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)
Max. capacitive load	max. 1 μF (Electronic components)
Max. inductive load	See "Protective circuit"
Test pulses	< 1 ms
Short-circuit protection	Yes
Note on protection circuit	Yes, within the scope of the operating voltage limits
Status display	4x LED green

Clock/signal outputs

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Technical data

Clock/signal outputs

Output description	Digital
Number of outputs	2
Voltage	24 V DC (Supply via A1/A2)
Limiting continuous current	50 mA
Test pulses	~ 1 ms
Short-circuit protection	Yes

Times

Response time	max. 30 ms (plus response time of PSR-TS-SDOR4)
Recovery time	< 10 s

General

Nominal operating mode	100% operating factor
Net weight	130 g
Mounting position	On horizontal DIN rail
Mounting type	DIN rail mounting
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Housing material	Polyamide PA non-reinforced
Housing color	yellow

Connection data

Connection method	Push-in connection
pluggable	Yes
Conductor cross section solid	0.2 mm² ... 1.5 mm²
Conductor cross-section AWG	24 ... 16
Conductor cross-section flexible with ferrule without plastic sleeve	0.25 mm² ... 1.5 mm² (only together with CRIMPFOX 6)
Conductor cross-section flexible with ferrule and plastic sleeve	0.25 mm² ... 1.5 mm² (only together with CRIMPFOX 6)
Stripping length	8 mm

Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	2 (1-channel parameterization)
	3 (2-channel parameterization)
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	2 (1-channel parameterization)
	3 (2-channel parameterization)
Designation	EN ISO 13849
Performance level (PL)	d (1-channel parameterization)
	e (2-channel parameterization)
Category	2 (1-channel parameterization)
	4 (2-channel parameterization)

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Technical data

Safety-related characteristic data

Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	2 (1-channel parameterization)
	3 (2-channel parameterization)
Designation	EN 50156
Safety Integrity Level (SIL)	max. 3 (Reference IEC 61508)

Standards and Regulations

Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178
Pollution degree	2
Overvoltage category	III
Vibration (operation)	2g
Shock (operation)	10g (Δt = 11 ms, three shocks in each space direction)
	10g (Δt = 16 ms, continuous shock, 1000 shocks in each space direction)

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration”

Drawings

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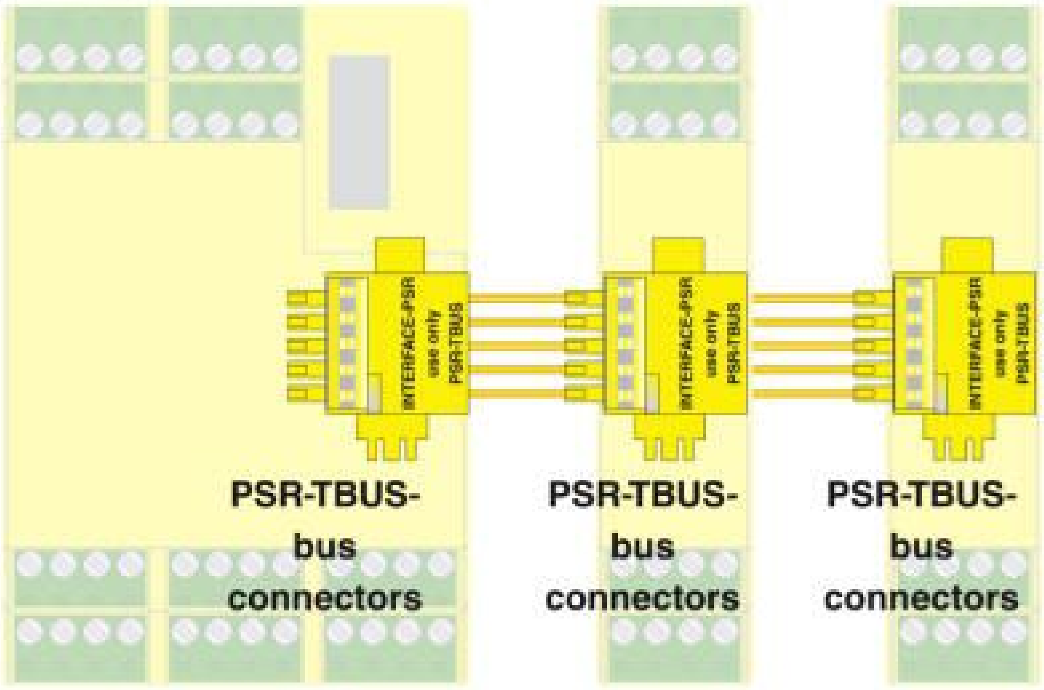
Connection diagram


INTERFACE-PSR
use only
PSR-TBUS
PSR-TBUS-
bus
connectors
PSR-TBUS-
bus
connectors
PSR-TBUS-
bus
connectors

PSR-TBUS DIN rail connectors are used for cross-wiring between the modules.

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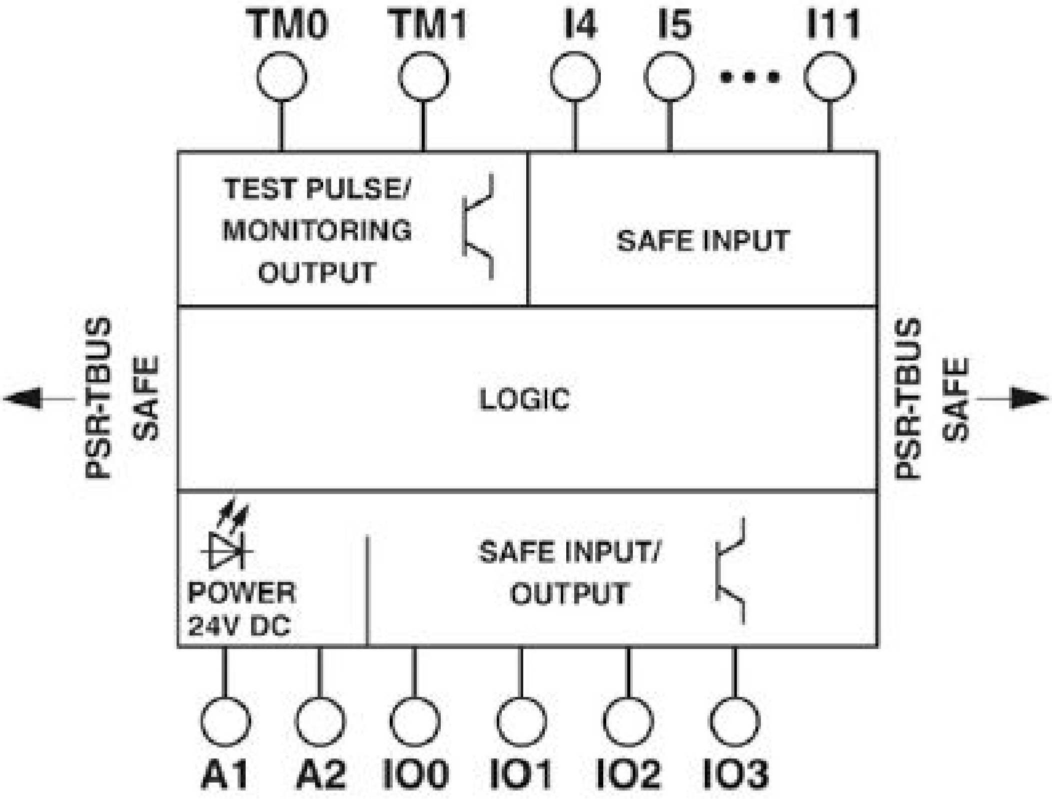
Circuit diagram


TM0
TM1
I4
I5
I11
TEST PULSE/ MONITORING OUTPUT
SAFE INPUT
PSR-TBUS SAFE
LOGIC
PSR-TBUS SAFE
POWER 24V DC
SAFE INPUT/ OUTPUT
A1
A2
IO0
IO1
IO2
IO3

Classifications

eCl@ss

eCl@ss 10.0.1	27371819
eCl@ss 4.0	40020600
eCl@ss 4.1	40020600
eCl@ss 5.0	27371900
eCl@ss 5.1	27371900
eCl@ss 6.0	27371800
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

ETIM

ETIM 2.0	EC001449
ETIM 3.0	EC001449
ETIM 4.0	EC001417
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

Classifications

UNSPSC

UNSPSC 6.01	30211901
UNSPSC 7.0901	39121501
UNSPSC 11	39121501
UNSPSC 12.01	39121501
UNSPSC 13.2	39121501
UNSPSC 18.0	39122205
UNSPSC 19.0	39122205
UNSPSC 20.0	39122205
UNSPSC 21.0	39122205

Approvals

Approvals

Approvals

UL Listed / cUL Listed / Functional Safety / cULus Listed

Ex Approvals

Approval details

UL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324

cUL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324

Functional Safety	01/205/5151.03/17

cULus Listed

Accessories

Accessories

Extension module - PSR-SPP- 24DC/TS/SDI8/SDIO4 - 2986041

Accessories

Device parameterization

Configuration package - SAFECONF - 2986119

Configuration software for SafetyBridge technology and PSR-TRISAFE modules, connecting cable for PSR-TRISAFE

DIN rail connector

DIN rail bus connectors - ME 22,5 TBUS 1,5/ 5-ST-3,81 GN - 2707437

DIN rail connector, nominal current: 8 A, rated voltage (III/2): 125 V, number of positions: 5, pitch: 3.81 mm, color: green, mounting: DIN rail, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts

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DIN rail bus connectors - PSR-TBUS - 2890425

DIN rail connector for safety switching devices, for supplying/controlling/monitoring (depending on the module)

Filter terminal block

Filter terminal block - PSR-FTB/20/86 - 2904477

Terminal block for filtering test pulses from safe semiconductor outputs with adjustable filter values (20 μF/86 μF), as well as for EMC filtering of 24 V signals up to an amperage of 2 A.

Filter terminal block - PSR-FTB/1.5/11.5 - 2904476

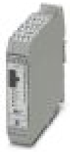
Terminal block for filtering test pulses from safe semiconductor outputs with adjustable filter values (1.5 μF/11.5 μF), as well as for EMC filtering of 24 V signals up to an amperage of 2 A.

Gateways/Proxies

Extension module - PSR-SPP- 24DC/TS/SDI8/SDIO4 - 2986041

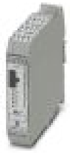
Accessories

Data interface - EM-CAN-GATEWAY-IFS - 2901504



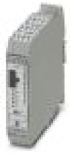
Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via CANopen®. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

Data interface - EM-MODBUS-GATEWAY-IFS - 2901528



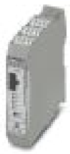
Gateway for the connection of up to 32 INTERFACE system devices via Modbus/TCP to a higher-level controller. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

Data interface - EM-DNET-GATEWAY-IFS - 2901529



Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via DeviceNet™. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

Data interface - EM-ETH-GATEWAY-IFS - 2901988



Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via EtherNet/IP™. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

Data interface - EM-PNET-GATEWAY-IFS - 2904472

Gateway for the connection of up to 32 INTERFACE system devices via PROFINET to a higher-level controller. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

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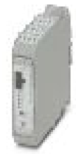
Accessories

Data interface - EM-PB-GATEWAY-IFS - 2297620



Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via PROFIBUS DP. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

Data interface - EM-RS232-GATEWAY-IFS - 2901526

Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via Modbus/RS-232. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

Data interface - EM-RS485-GATEWAY-IFS - 2901527

Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via Modbus/RS-485. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

Memory block

Memory block - IFS-CONFSTICK - 2986122

Multi-functional memory block for the INTERFACE systemf for easy storage and backup of the configuration.

Copy and delete station - COPYSTATION - IFS - 2901985

Copy and delete station for IFS-CONFSTICK memory modules for copying data from a master stick to up to four slave sticks and for deleting data on one ore more slave sticks, connection via USB/mini USB cable.

Programming cable

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Accessories

USB cable - CABLE-USB/MINI-USB-3,0M - 2986135

USB connecting cable: USB plug type A to USB plug type Mini-B; length: 3 m

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Starter kit

Starter kit - PSR-TRISAFE STARTER KIT - 2986300

STARTER kit for the PSR-TRISAFE safety module consisting of: PSR-TRISAFE demoboard (with inputs & outputs), SAFECONF CD, Quick Start Guide, USB cable (3m) , voltage supply with international connector adapters and package inserts.

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