

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

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PSR-TRISAFE-M input/output extension module with 8 safe inputs and 4 safe, configurable channels (choice of safe inputs or outputs), 2 clock/alarm outputs; up to SILCL 3, Cat.4/PL e, SIL 3, EN 50156, plug-in screw connection terminal blocks

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)
- ✓ Including PSR-TBUS connector (DIN rail connector) for adapting to the PSR-TRISAFE-M master module
- ✓ Easy graphical configuration instead of complex programming
- ✓ Multifunctional use for a wide range of safety functions
- ✓ Quick startup thanks to user-friendly simulation and test options
- ✓ 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 451871
GTIN	4046356451871

Technical data

Note

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

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

Technical data

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 μ F (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

Output description	Digital
Number of outputs	2
Voltage	24 V DC (Supply via A1/A2)

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

Technical data

Clock/signal outputs

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	Screw connection
pluggable	Yes
Conductor cross section solid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3
Torque	0.5 Nm ... 0.6 Nm
	5 lb _f -in. ... 7 lb _f -in.

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)
Designation	EN 62061

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

Technical data

Safety-related characteristic data

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 ($\Delta t = 11$ ms, three shocks in each space direction)
	10g ($\Delta t = 16$ ms, continuous shock, 1000 shocks in each space direction)

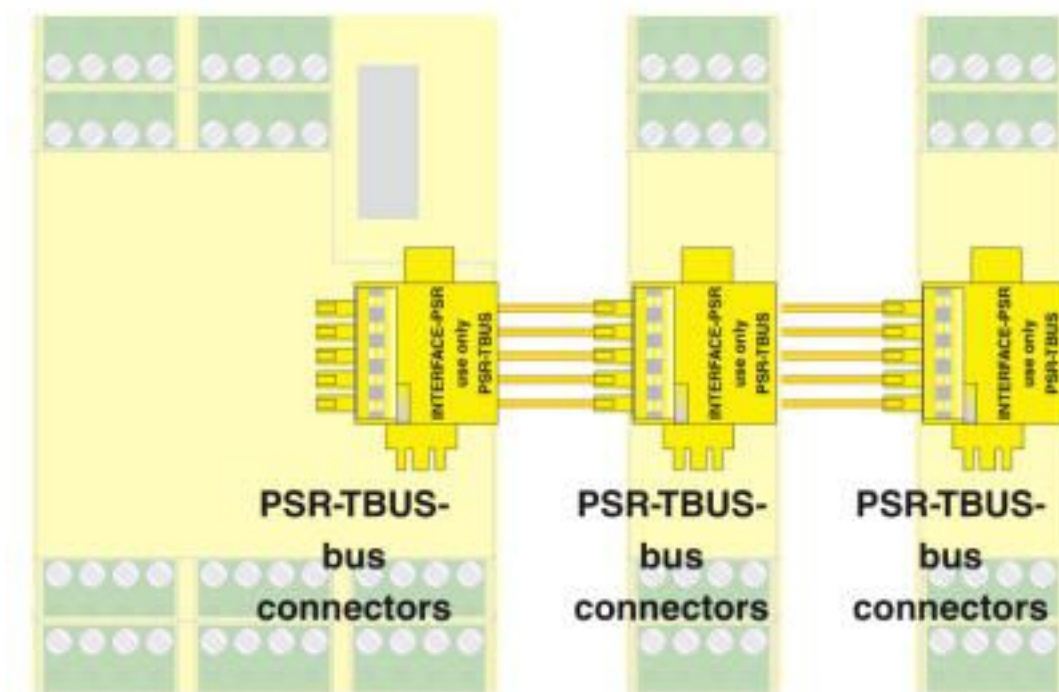
Environmental Product Compliance

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

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

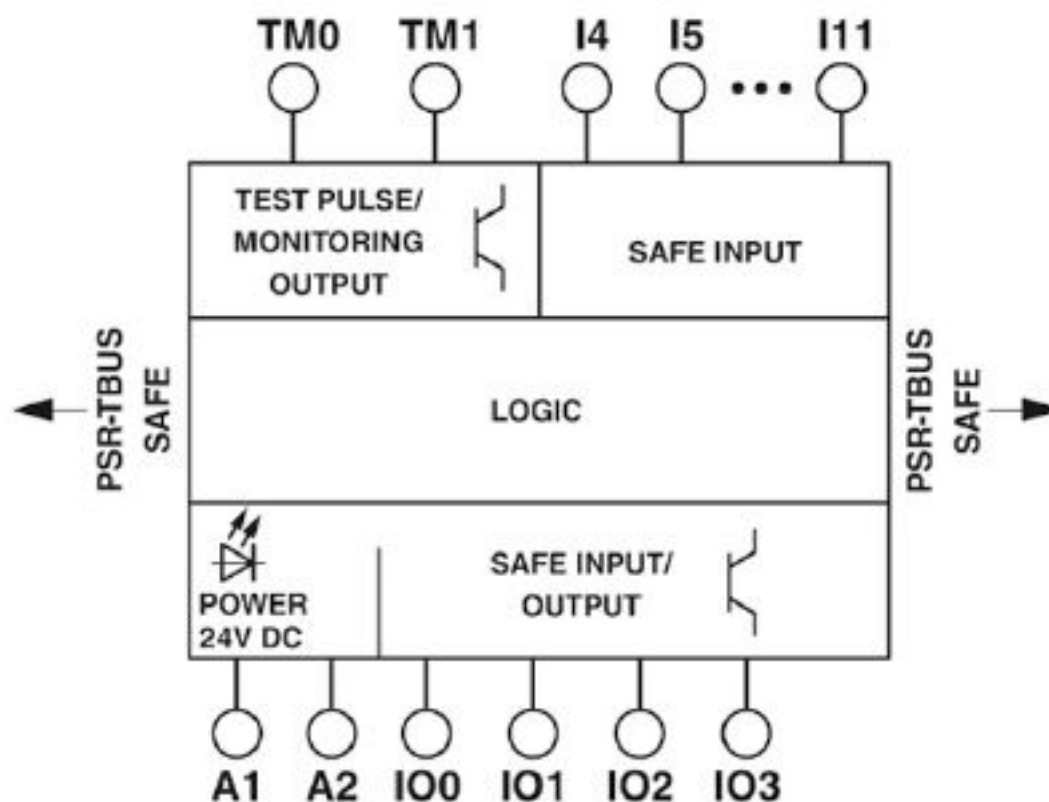
Connection diagram



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

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

Circuit diagram



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

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

Approvals

Functional Safety		01/205/5151.03/17
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cULus Listed	
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Accessories

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

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

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

Accessories

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



Terminal block for filtering test pulses from safe semiconductor outputs with adjustable filter values (20 μ F/86 μ F), 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 μ F/11.5 μ F), as well as for EMC filtering of 24 V signals up to an amperage of 2 A.

Gateways/Proxies

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.

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

Accessories

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.

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

Extension module - PSR-SCP- 24DC/TS/SDI8/SDIO4 - 2986038

Accessories

Memory block - IFS-CONFSTICK - 2986122



Multi-functional memory block for the INTERFACE system 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 or more slave sticks, connection via USB/mini USB cable.

Programming cable

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

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.