

Safety module - PSR-SPP- 24DC/TS/M - 2986025

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Freely configurable safety module, with 20 safe inputs and 4 safe outputs, 4 signal, 2 clock, and 2 ground switching outputs; can be extended using additional I/O modules, up to SILCL 3, Cat. 4/PL e, SIL 3, EN 50156, pluggable Push-in terminal block

The figure shows a version with a screw connection

Your advantages

- ✓ Freely configurable safety module for monitoring emergency stops, safety doors, light grids, etc.
- ✓ With 20 safe inputs, 4 safe outputs, 4 alarm outputs, and 2 clock outputs on a design width of just 67.5 mm
- ✓ Multifunctional use for a wide range of safety functions
- ✓ Including IFS-CONFSTICK memory stick for easily storing and saving the configuration
- ✓ Easy graphical configuration with the SAFECONF software
- ✓ Easy graphical configuration instead of complex programming
- ✓ Quick startup thanks to comprehensive simulation and test functions
- ✓ Option for connecting fieldbus gateways for diagnostics and signaling functions
- ✓ Up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- ✓ EN 50156
- ✓ Safe and standard extension via INTERFACE DIN rail TBUS
- ✓ Flexible extension with safe inputs and outputs



Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356345897

Technical data

Note

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

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Technical data

Dimensions

Width	67.5 mm
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 (A1/A2)
	18 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)
Rated control supply current I_s	typ. 110 mA
Limiting continuous current	max. 6 A (For looped-through current paths A1/A1 and A2/A2)
Filter time	typ. 20 ms (Load-dependent, in the event of voltage dips at U_s)
Status display	3x LED green, 1x LED red
Protective circuit	Yes, within the scope of the operating voltage limits

Digital inputs

Description of the input	Digital, type HTL
Number of inputs	10 (Two-channel, up to SIL 3)
	20 (Single-channel, up to SIL 2)
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	20 x LED green (1 LED per input)

Digital outputs

Number of outputs	4 (Safe semiconductor outputs, up to Cat. 4 in accordance with EN ISO 13849-1)
	2 (Ground switching outputs)
Nominal output voltage	24 V DC (Supply via 24 V/0 V)
Nominal output voltage range	18 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)
Limiting continuous current	2 A (Per channel, see Derating)
	2 A (Total current of all outputs)
Output voltage	< 5 V (Low state)
Leakage current	max. 2 mA

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Digital outputs

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	4 x LED green (1 LED per output)

Clock outputs

Output description	Digital
Number of outputs	2
Voltage	24 V DC (Supply via 24 V/0 V)
Limiting continuous current	100 mA
Test pulses	< 1 ms
Short-circuit protection	Yes

Alarm outputs

Output description	Digital
Number of outputs	4
Voltage	24 V DC (Supply via 24 V/0 V)
Limiting continuous current	100 mA
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	154 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
Number of possible extension modules	1 (Max. continuous current via PSR-TBUS: 4 A)
Number of possible safe extension modules	10 (Max. continuous current via PSR-TBUS: 4 A)

Connection data

Connection method	Push-in connection
pluggable	Yes
Conductor cross section solid	0.2 mm ² ... 1.5 mm ²
Conductor cross-section AWG	24 ... 16

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Technical data

Connection data

Conductor cross-section flexible with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross-section flexible with ferrule and plastic sleeve	0.25 mm ² ... 1.5 mm ² (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)
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 ($\Delta t = 11$ ms, three shocks in each space direction)
	10g ($\Delta t = 16$ ms, continuous shock, 1000 shocks in each space direction)

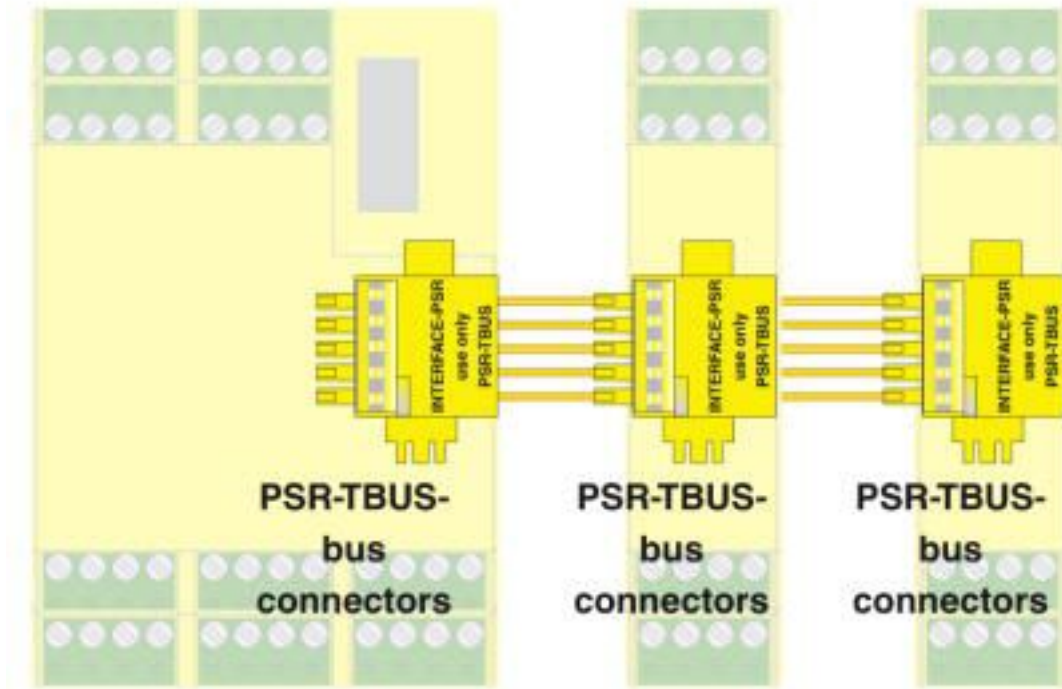
Environmental Product Compliance

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

Safety module - PSR-SPP- 24DC/TS/M - 2986025

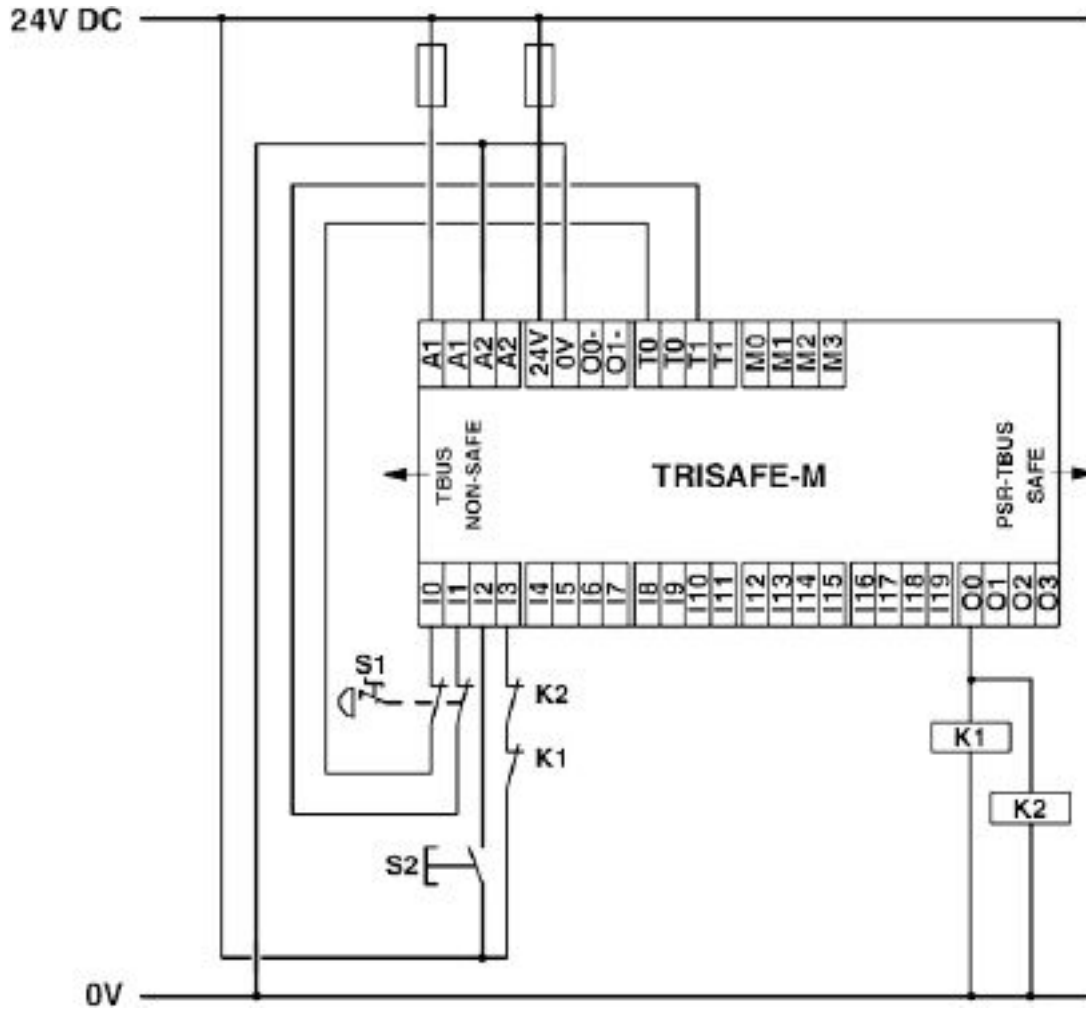
Connection diagram



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

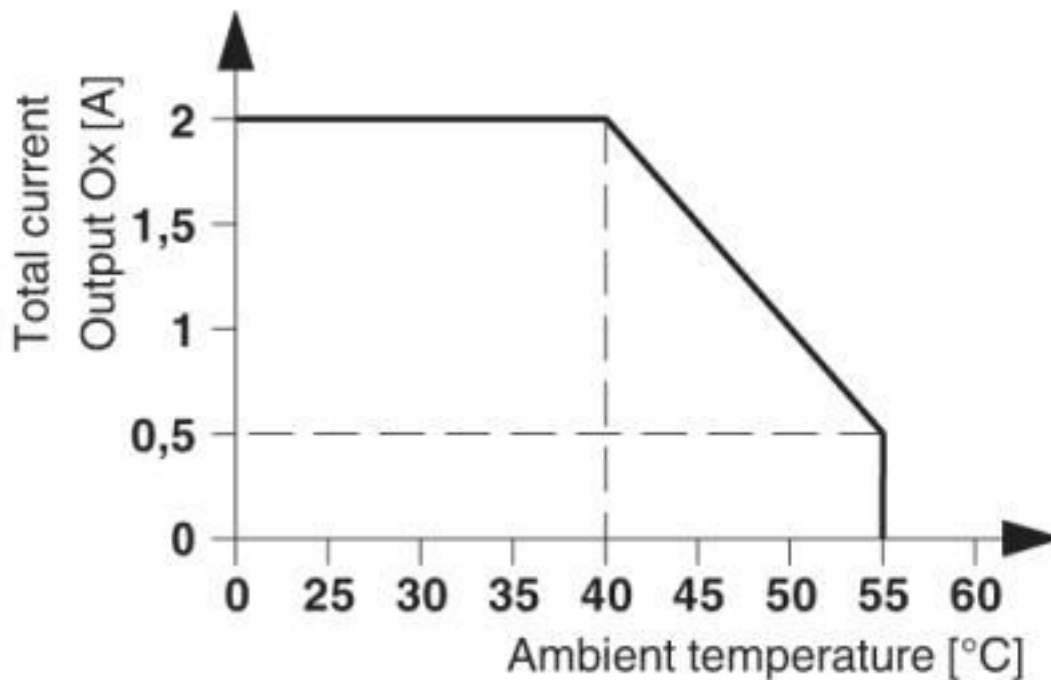
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Application drawing

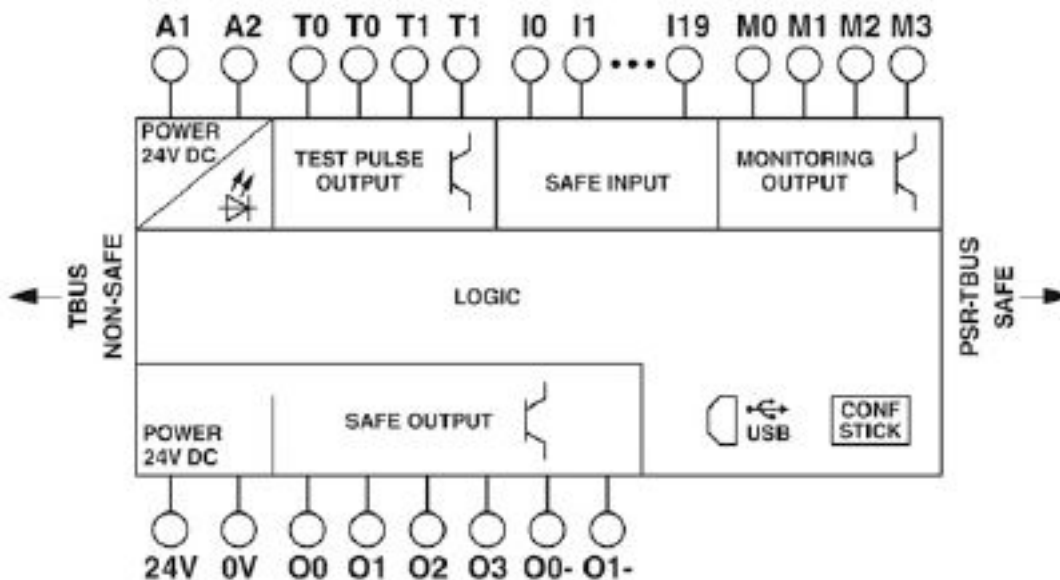


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Diagram



Circuit diagram



Classifications

eCl@ss

eCl@ss 10.0.1	27371819
eCl@ss 4.0	40020600
eCl@ss 4.1	40020600

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Classifications

eCl@ss

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	EC001449
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

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/XYVV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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Approvals

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

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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.

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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

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Accessories

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

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.

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