

SMX 132-1/2/D

SMXSERIES » Modular » Decentral expansion » I/O module

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DESCRIPTION

Decentralised I/O extension module for the SMX_{MODULAR} - basic modules

- 14 Digital inputs
- 10 Digital I/Os
- 2 Relay outputs
- 2 Pulse outputs
- 4 Auxiliary outputs
- 2 / 4 pn- or pp-switching outputs
- Communication interface (/D) integrated
- Safety controller up to PL e acc. to EN ISO 13849-1 or SIL3 acc. to IEC 61508

CHARACTERISTIC OF THE MODULE

- » Decentralised I/O expansion module
 - Decentralised: Communication with base module SMX100-x via communication interface (/D)
 - Central: Communication with base module SMX100-x via backplane bus
- » Pulse outputs for cross-shortening detection of digital input signals
- » External contact monitoring of connected switchgear (EMU)
- » Comprehensive diagnostic functions integrated
- » Coded status display via front-side 7 segment display and status LEDs
- » 10 safe I/O`s – can be configured as inputs or outputs

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SAFETY RELATED CHARACTERISTIC DATA

| | |
|----------------------------------|----------------------------------|
| Performance Level | PL e (EN ISO 13849-1) |
| PFH ¹⁾ / architecture | 9,2 FIT / Cat. 4 * |
| Safety Integrity Level | SIL 3 (IEC 61508) |
| Proof test interval | 20 years = max. operating period |

GENERAL DATA

| | |
|--|--|
| Max. no. of expansion modules | – |
| Interface for expansion modules | Communication interface (/D) or T-bus connector, pluggable in top-hat rail, RJ-45 (Ethernet) |
| Number of safe digital inputs | 14 |
| Number of safe digital outputs | |
| pp-switching ** | 4 |
| pn-switching ** | 2 |
| Number of safe digital I/O | 10 |
| Number of relay outputs | 2 |
| Number of safe analogue inputs | – |
| Number of auxiliary outputs | 4 |
| Number of pulse outputs (clock outputs) | 2 |
| Type of connection | Plug-in terminals with spring or screw connection |
| Axis monitoring (Axes / Encoder interfaces) | – |
| Encoder interfaces (D-Sub / screw terminals) | – |

* Value applies only to expansion modules

** pn/pp are configurable via SafePLC²

¹⁾ Value applies only for extension module. For total assessment in accordance with EN ISO 13849-1 one must use a series connection with the corresponding basic device => $PFH_{Logic} = PFH_{Basic} + PFH_{Extension}$

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ELECTRICAL DATA

| | | |
|--------------------------------|--|---|
| Supply voltage (tolerance) | | 24 VDC; 2A (-15%, +20%) |
| Fuse | X 11.1 | min. 30 VDC; max. 3,15 A |
| | X 11.2, X13.1 | min. 30 VDC; max. 10A |
| Max. Leistungsaufnahme (Logik) | | |
| | SMX132-1/2/D | 5,2 W |
| Rated data digital inputs | | 24 VDC; 20 mA, Typ1 acc. to IEC 61131-2 |
| Rated data digital outputs | | |
| | pn-switching | 24 VDC; 2A * |
| | pp-switching | 24 VDC; 2A * |
| | auxiliary outputs | 24 VDC; 250mA |
| | pulse outputs (clock outputs) | 24 VDC; 250mA |
| | Digital I/O | |
| | 01 - 05 | 24 VDC; 0,5A |
| | 06 - 10 | 24 VDC; 2A |
| Rated data relays | | |
| | Normally open | |
| | DC 13 | 24 VDC; 2A |
| | AC 15 | 230 VAC; 2A |
| | Normally closed (Read back contact) | |
| | DC 13 | 24 VDC; 2A |

* see „Derating outputs“

DERATING OUTPUTS

- » Maximum current load based on temperature.
- » The maximum total current is 10A.

| type of module | outputs | temperature 30°C / 50°C |
|----------------|-----------|-------------------------|
| SMX132-0/2/D | Q 1 – Q 4 | 2A / 1,8A |

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ENVIRONMENTAL DATA

| | |
|---|---|
| Temperature | 0°C ... +50°C operation -25°C ... +70°C storage and transport |
| Class of protection | IP 20 |
| Climatic category | 3K3 acc. to DIN EN 60721-3 |
| Min-, Maximum relative humidity (no condensation) | 5% - 85% |
| EMC | DIN EN 61000-6-2, DIN EN 61000-6-4, DIN EN 61000-6-7, DIN EN 61800-3, DIN EN 61326-3, DIN EN 62061 |
| Operating altitude | 2000m |

MECHANICAL DATA

| | | |
|-----------------------------------|--------------|--------------------------|
| Dimension (HxDxW [mm]) | SMX132-1/2/D | 100x115x90 |
| Weight [g] | SMX132-1/2/D | 500 |
| Mounting | | to snap on top-hat rail |
| Number of T-Bus | SMX132-1/2/D | |
| Min. terminal cross-section / AWG | | 0,2 mm ² / 24 |
| Max. terminal cross-section / AWG | | 2,5 mm ² / 12 |

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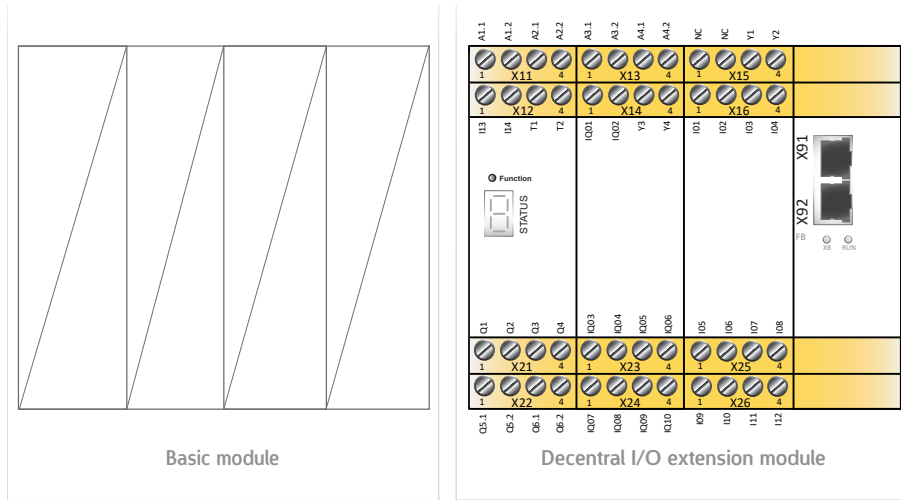
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DEVICE INTERFACES



| Interface | description of interface |
|-----------------------|---|
| X11 – X16 / X21 – X26 | Voltage supply and I/O interface |
| X91 / X92 | Decentralised SDDC ETH and SMMC interface |

VOLTAGE SUPPLY AND I/O INTERFACE

| X 11 | | |
|------|----------|---------------------------------------|
| Pin | 1 - A1.1 | Voltage supply device +24 VDC |
| | 2 - A1.2 | Voltage supply device +24 VDC outputs |
| | 3 - A2.1 | Voltage supply device 0 VDC |
| | 4 - A2.2 | 0 VDC |
| X 12 | | |
| Pin | 1 - I13 | Safe digital inputs |
| | 2 - I14 | |
| | 3 - T1 | Clock outputs |
| | 4 - T2 | |
| X 13 | | |
| Pin | 1 - A1.3 | Voltage supply device +24 VDC |
| | 2 - A1.4 | |
| | 3 - A2.3 | Voltage supply device 0 VDC |
| | 4 - A2.4 | |

| X 14 | | |
|------|----------|---|
| Pin | 1 - IQ01 | Safe digital inputs, outputs pp-switching |
| | 2 - IQ02 | |
| | 3 - Y3 | Auxiliary outputs |
| | 4 - Y4 | |
| X 15 | | |
| Pin | 1 - NC | No function |
| | 2 - NC | |
| | 3 - Y1 | Auxiliary outputs |
| | 4 - Y2 | |
| X 16 | | |
| Pin | 1 - I01 | Safe digital inputs |
| | 2 - I02 | |
| | 3 - I03 | |
| | 4 - I04 | |

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| X 21 | | |
|------|----------|--|
| Pin | 1 - Q1 | Output of the pp-switching Q1_PP / pp-switching Q1 |
| | 2 - Q2 | Output of the pn-switching Q2_PN / pp-switching Q2 |
| | 3 - Q3 | Output of the pp-switching Q3_PP / pp-switching Q3 |
| | 4 - Q4 | Output of the pn-switching Q4_PN / pp-switching Q4 |
| X 22 | | |
| Pin | 1 - Q5.1 | Safe relay outputs |
| | 2 - Q5.2 | |
| | 3 - Q6.1 | Safe relay outputs |
| | 4 - Q6.2 | |
| X 23 | | |
| Pin | 1 - IQ03 | Safe digital inputs, outputs pp-switching |
| | 2 - IQ04 | |
| | 3 - IQ05 | |
| | 4 - IQ06 | |

| X24 | | |
|------|----------|---|
| Pin | 1 - IQ07 | Safe digital inputs, outputs pp-switching |
| | 2 - IQ08 | |
| | 3 - IQ09 | |
| | 4 - IQ10 | |
| X 25 | | |
| Pin | 1 - I05 | Safe digital inputs |
| | 2 - I06 | |
| | 3 - I07 | |
| | 4 - I08 | |
| X 26 | | |
| Pin | 1 - I09 | Safe digital inputs |
| | 2 - I10 | |
| | 3 - I11 | |
| | 4 - I12 | |

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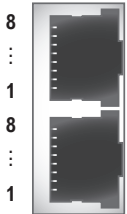
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DECENTRALISED SDDC ETH AND SMMC INTERFACE

Pin assignment female connector

| Communication interface (RJ45) | | | | Front side |
|--------------------------------|------|-----------------|--------------|---|
| Pin | Name | Description | Colour | X91 / X92 |
| 1 | TX+ | Transmit Data + | white-orange |  |
| 2 | TX- | Transmit Data - | orange | |
| 3 | RX+ | Receive Data + | white-green | |
| 4 | nc | Not Used | blue | |
| 5 | nc | Not used | white-blue | |
| 6 | RX- | Receive Data - | green | |
| 7 | nc | Not used | white-brown | |
| 8 | nc | Not used | brown | |

Safe Master – Master Communication (SMMC)

SMMC communication enable a secure data exchange of 2 bytes between multiple SDDC masters. Communication takes place without a master for coordinating the data. This means that data exchange between available subscribers is always possible. This principle means that an incomplete or separates network can work in part areas without chnaging the configuration.

Each port can be configured in the SafePLC².

INTEGRATED COMMUNICATION INTERFACE

General data

Decentralised communication interface

/D

2x RJ 45 *

* optional for SDDC or SMMC

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BESTELLINFORMATIONEN

EXTENSIONS

| item | description | item no. |
|--------------|--|----------|
| SMX132-1/2/D | Decentral I/O expansion module with 10 safe I/Os | 1577 |

ACCESSORIES

| item | description | item no. |
|----------|--|------------|
| SXxxx-x | Terminal connector, screw terminals (set), encoded for cabling SMX132-1/2/D | on request |
| SXxxx-x | Terminal connector, spring terminals (set), encoded for cabling SMX132-1/2/D | on request |
| SX0000-9 | T-Bus connector voltage-carrying (grey) | 1015 |

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