

# SMX 132-0/2/D

SMXSERIES » Modular » Decentral expansion » I/O module

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PRODUCTS



## DESCRIPTION

Decentralised I/O extension module for the SMXMODULAR - basic modules

- 14 Digital inputs
- 0 Digital I/Os
- 2 Relay outputs
- 2 Auxiliary / pulse 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

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Böttgerstraße 40  
D- 92637 Weiden

[www.bbh-products.de](http://www.bbh-products.de)

Tel.: + 49 961/4 82 44-0  
Fax: + 49 961/4 82 44-35

[contact@bbh-products.de](mailto:contact@bbh-products.de)

**SAFETY @ ITS BEST!**

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## SAFETY RELATED CHARACTERISTIC DATA

Performance Level	PL e (EN ISO 13849-1)
PFH <sup>1)</sup> / 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	–
Number of relay outputs	2
Number of safe analogue inputs	–
Number of auxiliary outputs	2
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 SafePLC<sup>2</sup>

<sup>1)</sup> 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. Power consumption (logic)	SMX132-0/2/D	4,2 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
		06 - 10
		24 VDC; 0,5A
		24 VDC; 2A
Rated data relays		
	Normally open	DC 13
		AC 15
		24 VDC; 2A
		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

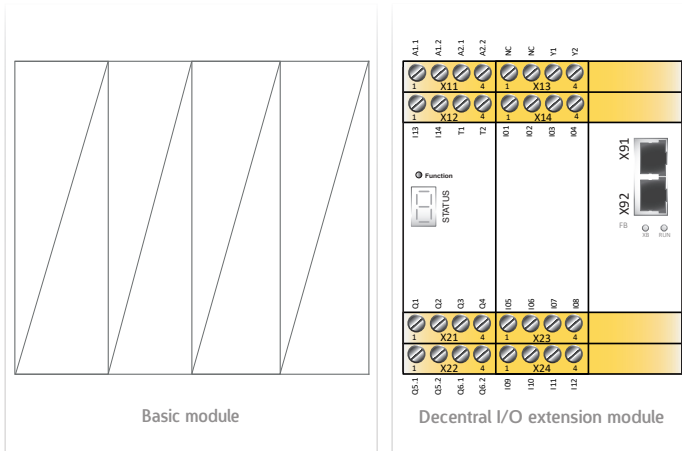
Dimension (HxDxW [mm])	SMX132-0/2/D	100x115x67,5
Weight [g]	SMX132-0/2/D	400
Mounting		to snap on top-hat rail
Number of T-Bus	SMX132-0/2/D	3
Min. terminal cross-section / AWG		0,2 mm <sup>2</sup> / 24
Max. terminal cross-section / AWG		2,5 mm <sup>2</sup> / 12



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## DEVICE INTERFACES



Interface	Description of interface
X11 – X14 / X21 – X24	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
	4 - A2.2	0 VDC
X 12		
Pin	1 - I13	Safe digital inputs
	2 - I14	
	3 - T1	Clock outputs
	4 - T2	
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 output
	2 - Q5.2	
	3 - Q6.1	Safe relay output
	4 - Q6.2	

X 13		
Pin	1 - NC	No function
	2 - NC	
	3 - Y1	Auxiliary outputs
	4 - Y2	
X 14		
Pin	1 - I01	Safe digital inputs
	2 - I02	
	3 - I03	
	4 - I04	
X 23		
Pin	1 - I05	Safe digital inputs
	2 - I06	
	3 - I07	
	4 - I08	
X24		
Pin	1 - I09	Safe digital inputs
	2 - I10	
	3 - I11	
	4 - I12	

## 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 SafePLC<sup>2</sup>.

## INTEGRATED COMMUNICATION INTERFACE

General data	
Decentralised communication interface	
/D	2x RJ 45 *
* optional for SDDC or SMMC	

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## ORDER INFORMATION

### EXTENSIONS

item	description	item no.
SMX132-0/2/D	Decentral I/O expansion module	1573

### ACCESSORIES

item	description	item no.
SXxxx-x	Terminal connector, screw terminals (set), encoded for cabling SMX132-0/2/D	on request
SXxxx-x	Terminal connector, spring terminals (set), encoded for cabling SMX132-0/2/D	on request
SX0000-9	T-Bus connector voltage-carrying (grey)	1015

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