

SMX 131R-4/2

SMXSERIES » Modular » Central expansion » I/O module

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DESCRIPTION

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

- 12 Digital inputs
- 4 Relay outputs
- 6 Digital I/Os
- 2 Auxiliary / pulse outputs
- Safety controller up to PL e acc. to EN ISO 13849-1
or SIL3 acc. to IEC 61508

CHARACTERISTIC OF THE MODULE

- » Pulse outputs for cross-circuit detection of digital input signals
- » External contact monitoring of connected switchgear (EMU)
- » Comprehensive diagnostic functions integrated

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Böttgerstraße 40
D- 92637 Weiden

www.bbh-products.de

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

contact@bbh-products.de

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SAFETY RELATED CHARACTERISTIC DATA

Performance Level	PL e (EN ISO 13849-1)
PFH ¹⁾ / architecture	9,2 FIT / Cat. 4 ¹⁾
	1-channel per Rel 20 FIT (max.8)
	2-channel per Rel 1,0 FIT (max.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	T-bus connector, pluggable in top-hat rail
Number of safe digital inputs	12
Number of safe digital outputs	
	pp-switching ** 4
	pn-switching ** 2
Number of safe digital I/O	6
Number of relay outputs	4
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)	–

** pn/pp configurable via SafePLC

¹⁾ Value applies only for extension module. For total assessment in accordance with EN ISO 13849-1 one must use a series 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	X11.1	min. 30 VDC; max. 10A
Max. Power consumption (logic)		
	SMX131R-4/2	3 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
SMX131R-4/2/x	IQx6	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])	SMX131R-4/2	100x115x67,5
Weight [g]	SMX131R-4/2	545
Mounting		to snap on top-hat rail
Number of T-Bus		
	SMX131R-4/2	3
Min. terminal cross-section / AWG		0,2 mm ² / 24
Max. terminal cross-section / AWG		2,5 mm ² / 12

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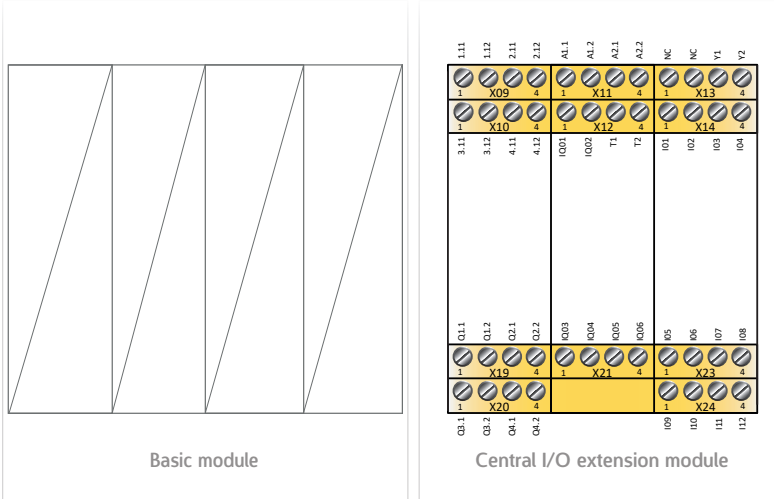
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DEVICE INTERFACES



Interface	Description of interface
X09 – X14 / X19 – X24	Voltage supply and I/O interface

VOLTAGE SUPPLY AND I/O INTERFACE

Interface	Description of interface
X 09	
Pin	1 - 1.11 2 - 1.12 3 - 2.11 4 - 2.12
	Read back contact Relais 1 Read back contact Relais 2
X 10	
Pin	1 - 3.11 2 - 3.12 3 - 4.11 4 - 4.12
	Read back contact Relais 3 Read back contact Relais 4
X 11	
Pin	1 - A1.1 2 - A1.2 3 - A2.1 4 - A2.2
	Voltage supply device +24 VDC Voltage supply device +24 VDC outputs Voltage supply device 0 VDC 0 VDC
X 12	
Pin	1 - IQ01 2 - IQ02 3 - T1 4 - T2
	Safe digital inputs, outputs pp-switching Clock outputs
X 13	
Pin	1 - NC 2 - NC 3 - Y1 4 - Y2
	No function Auxiliary outputs
X 14	
Pin	1 - I01 2 - I02 3 - I03 4 - I04
	Safe digital inputs

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X 19		
Pin	1 - Q1.1	Safe Relay output 1
	2 - Q1.2	
	3 - Q2.1	Safe Relay output 2
	4 - Q2.2	
X 20		
Pin	1 - Q3.1	Safe Relay output 3
	2 - Q3.2	
	3 - Q4.1	Safe Relay output 4
	4 - Q4.2	
X 21		
Pin	1 - IQ03	Safe digital inputs, outputs pp-switching
	2 - IQ04	
	3 - IQ05	
	4 - IQ06	

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	

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ORDER INFORMATION

EXTENSIONS

item	description	item no.
SMX131R-4/2	I/O expansion module with relay option	2232

ACCESSORIES

item	description	item no.
SXxxx-x	Terminal connector, screw terminals (set), encoded for cabling SMX131R/2	on request
SXxxx-x	Terminal connector, spring terminals (set), encoded for cabling SMX131R/2	on request
SX0000-9	T-Bus connector voltage-carrying (grey)	1015

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