

Digital input block module XI/ON, 24 V DC, 16DI, pulse-switching

Powering Business Worldwide™

Part no. XN-16DI-24VDC-P Article no. 140142

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Function	I/O modules
	Digital input modules
Function	XN Block module
Short Description	16 Digital inputs, 24 V DC Positive switching
For use with	XN-B3T-SBB XN-B3S-SBB XN-B4T-SBBC XN-B4S-SBBC

Technical data

General

Standards			EN 61000-6-2 EN 61000-6-4 EN 61131-2
Potential isolation			Yes, through optocoupler
Ambient temperature			
Ambient temperature, operation		°C	0 - +55
Storage, transport	θ	°C	-25 - +85
Relative humidity			
Relative humidity			5 - 95 % (indoor), Level RH-2, no condensation (for storage at 45°C)
Ambient conditions, mechanical			
Degree of Protection			IP20
Harmful gases		ppm	SO_2 : 10 (rel. humidity < 75%, no condensation) H ₂ S: 1.0 (rel. humidity < 75 %,no condensation)
Vibration resistance, operating conditions			according to IEC/EN 60068-2-6
Mechanical shock resistance		g	according to IEC 60068-2-27
Continuous shock resistance (IEC/EN 60068-2-29)			According to IEC 60068-2-29
Drop and topple			According to IEC 60068-2-31, free fall according to IEC 60068-2-32
Electromagnetic compatibility (EMC)			
ESD	Air/contact discharge	kV	EN 61100-4-2
Electromagnetic fields	(0.081) / (1,42) / (2 2,7) GHz	V/m	EN 61100-4-2
Burst			EN 61100-4-4
Surge			EN 61100-4-5
Radiated RFI		V	EN 61100-4-6
Emitted interference (radiated, high frequency)	(30230 MHz) / (2301000 MHz)	dB	EN 55016-2-3
Voltage fluctuations/voltage dips			EN 61131-2
Type test			to EN 61131-2
Approvals			CE, cULus
Other technical data (sheet catalogue)			Technical Data
Analog input modules			

Analog input modules			
Channels		Number	16
Rated voltage through supply terminal	U_{L}		24 V DC
Rated current consumption from supply terminal	IL	mA	40
Rated current consumption from module bus	I _{MB}	mA	≦ ₄₅
Heat dissipation		W	2.5
Base modules			
without C connection			2-/3-wire

			XN-B3x-SBB
Analog output modules			
Channels		Number	16
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	IL	mA	40
Rated current consumption from module bus	I _{MB}	mA	≤ ₄₅
Heat dissipation		W	2.5
Base modules			
without C connection			2-/3-wire XN-B3x-SBB
Digital outputs			AIV-DJX-3DD
Channels		Number	16
Rated voltage through supply terminal	U_{L}		24 V DC
Rated current consumption from the supply terminal (at load current = 0 mA)	IL	mA	40
Rated current consumption from module bus	I _{MB}	mA	≤ ₄₅
Base modules			
with C connection			4-wire
Digital inputs			XN-B4x-SBBC
Digital inputs Channels		Number	16
Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	ار	mA	40
Rated current consumption from module bus	I _{MB}	mA	≤ ₄₅
		V AC	
Rated insulation voltage	Ui		500
Heat dissipation Input voltage		W	2.5
Nominal input voltage	U _e	V DC	24 V DC
Low level	U _e L	V	-30/+5 V
High level	U _e H	V	15 - 30 V
Input current	O ₀ 11	•	13 30 1
Low level/active level	I _e L	mA	0 - 1.5 mA
High level/active level	I _{eH}	mA	2 - 10 mA
Input delay	-		
t _{Rising} edge		μs	< 200
t _{Falling} edge		μs	< 200
Base modules			
without C connection			2-/3-wire
with C connection			XN-B3x-SBB 4-wire
			XN-B4x-SBBC
Relay modules			011/100
Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	I _L	mA	40
Rated current consumption from module bus	I _{МВ}	mA	≤ ₄₅
Base modules			
without C connection			2-/3-wire XN-B3x-SBB
with C connection			4-wire
Davies auralis madula			XN-B4x-SBBC
Power supply module Rated voltage through supply terminal	U_{L}		24 V DC
Rated current consumption from supply terminal	I _L	mA	40
Rated current consumption from module bus	I _{MB}	mA	
	IVID	1107	≤ ₄₅
Counter module Channels		Number	16
Rated voltage through supply terminal	U _L	. vanibei	24 V DC
	- L		
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Rated current consumption from supply terminal	IL	mA	40
Rated current consumption from module bus	I _{MB}	mA	≦ ₄₅
Heat dissipation		W	2.5
Digital inputs			
Input voltage			
Nominal input voltage	U _e	V DC	24 V DC
Low level	U _e L	V	-30/+5 V
High level	U_eH	V	15 - 30 V
Input current			
Low level	I_eL	mA	0 - 1.5 mA
High level	I _{eH}	mA	2 - 10 mA
Interfaces			
Rated voltage through supply terminal	U_{L}		24 V DC
Rated current consumption from supply terminal	IL	mA	40
Rated current consumption from module bus	I _{MB}	mA	≤ ₄₅

Notes

The supply terminal (U_L) supplies power for the card's electronics and for the sensors at the inputs. The total current required for each card is the sum of all partial currents.

Part of the XI/ON card's electronics is supplied with module bus voltage (5 V DC), the other part through the supply terminal (U_L) .

Max. permissible capacity: 141 nF at 79 V AC/50 Hz; 23 nF at 265 V AC/50 Hz

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	0
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	2.5
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	55
Degree of Protection			IP20
EC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Meets the product standard's requirements.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility.

10.12 Electromagnetic compatibility	Is the panel builder's responsibility.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

		leaner (IL) is observed.
Technical data ETIM 6.0		
PLC's (EG000024) / Fieldbus, decentr. periphery - digital I/O module (EC001599)	do o o utualiza du a o viu b o ve	al / Field have decontrollined positionary latinities I / O module / pal@pag 1 27 24 26 04
Electric engineering, automation, process control engineering / Control / Field bus, [BAA055011])	decentralized peripriera	n/ riela bus, decentralized peripheral - digital 1/0 module (eci@sso.1-27-24-20-04
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	18 - 30
Voltage type of supply voltage		DC
Number of digital inputs		16
Number of digital outputs		0
Digital inputs configurable		No
Digital outputs configurable		No
Input current at signal 1	mA	2
Permitted voltage at input	V	-30 - 30
Type of voltage (input voltage)		DC
Type of digital output		None
Output current	А	0
Permitted voltage at output	V	0 - 0
Type of output voltage		DC
Short-circuit protection, outputs available		No
Number of HW-interfaces industrial Ethernet		0
Number of HW-interfaces PROFINET		0
Number of HW-interfaces RS-232		0
Number of HW-interfaces RS-422		0
Number of HW-interfaces RS-485		0
Number of HW-interfaces serial TTY		0
Number of HW-interfaces parallel		0
Number of HW-interfaces Wireless		0
Number of HW-interfaces other		1
With optical interface		No
Supporting protocol for TCP/IP		No
Supporting protocol for PROFIBUS		Yes
Supporting protocol for CAN		Yes
Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for KNX		No
Supporting protocol for MODBUS		No
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		Yes
Supporting protocol for SUCONET		No
Supporting protocol for LON		No
Supporting protocol for PROFINET IO		No
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		No
Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for DeviceNet Safety		No
Supporting protocol for INTERBUS-Safety		No
Supporting protocol for PROFIsafe		No
		•

No

Yes

Supporting protocol for SafetyBUS p

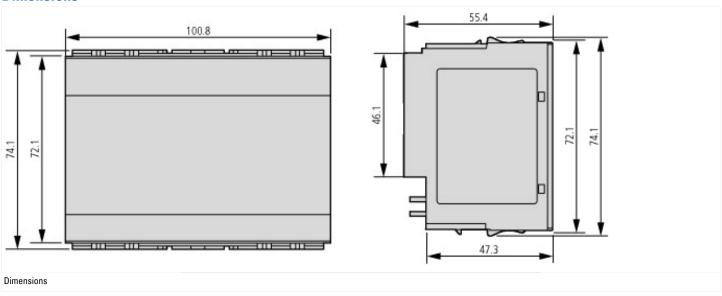
Supporting protocol for other bus systems

Radio standard WLAN 802.11 Radio standard GPRS Radio standard GSM Radio standard GSM Radio standard UMTS Robert Robert Robert Robert Robert Robert Radio standard Robert	Radio standard Bluetooth			No
Radio standard GPRS No Radio standard GSM No Radio standard UMTS No 10 link master No System accessory No Degree of protection (IP) IP20 Type of electric connection Plug-in connection Time delay at signal exchange No Fieldbus connection over separate bus coupler possible Yes Rail mounting possible Yes Wall mounting/direct mounting No Front build in possible No Rack-assembly possible No Suitable for safety functions No Category according to ELF 9568 No Performance level acc. to EN ISO 13849-1 None Appendant operation agent (Ex ib) No Appendant operation agent (Ex ib) No Explosion safety category for dust None Width None Width None Width None Explosion safety category for dust None Width None Width None				
Radio standard GSM No Radio standard UMTS No 10 link master No System accessory Yes Degree of protection (IP) IP20 Type of electric connection IP20 Time delay at signal exchange Image: No Fieldbus connection over separate bus coupler possible Yes Rail mounting possible Yes Wall mounting/direct mounting No Front build in possible No Rack-assembly possible No Suitable for safety functions No Category according to ELM 954-1 No SIL according to IEC 61508 No Performance level acc. to EN ISO 13849-1 None Appendant operation agent (Ex ia) No Explosion safety category for dust None Width None Explosion safety category for dust None Width None Explosion safety category for dust None Width None Explosion safety category for dust None Width	Radio standard WLAN 802.11			No
Radio standard UMTS No 10 link master No System accessory Yes Degree of protection (IP) Yes Type of electric connection Plug-in connection Time delay at signal exchange ms 0 - 0 Rail mounting possible Yes Yes Wall mounting/direct mounting Yes No Front build in possible No No Suitable for safety functions	Radio standard GPRS			No
D Ink master No Yes Yes Plug-in connection (IP) Plug-in connection (IP) Plug-in connection Plug-	Radio standard GSM			No
System accessory Yes Dagree of protection (IP) 1P20 Type of electric connection 1P10 plug-in connection Time delay at signal exchange 0 - 0 Fieldbus connection over separate bus coupler possible Yes Rail mounting possible Yes Wall mounting/direct mounting No Front-build in possible No Rack-assembly possible No Suitable for safety functions No Category according to EN 954-1 No SIL according to IEC 61508 None Performance level acc. to EN ISO 13849-1 None Appendant operation agent (Ex ia) No Appendant operation agent (Ex ib) No Explosion safety category for gas None Explosion safety category for dust None Width Mm 100.8 Height Mm 74.1	Radio standard UMTS			No
Degree of protection (IP) P20 Type of electric connection P10g-in connection Time delay at signal exchange MS 0 - 0 Fieldbus connection over separate bus coupler possible Yes Rail mounting possible Yes Wall mounting/direct mounting No Front build in possible No Rack-assembly possible No Suitable for safety functions No Category according to EN 954-1 No SIL according to EC 61508 No Performance level acc. to EN ISO 13849-1 No Appendant operation agent (Ex ia) No Appendant operation agent (Ex ia) No Explosion safety category for gas No Explosion safety category for dust No Width No Midth No	10 link master			No
Type of electric connection Time delay at signal exchange ns 0 - 0 Fieldbus connection over separate bus coupler possible Rail mounting possible Wall mounting/direct mounting Front build in possible Rack-assembly possible Rack	System accessory			Yes
Time delay at signal exchange Fieldbus connection over separate bus coupler possible Rail mounting possible Wall mounting/direct mounting Front build in possible Rack-assembly possible Rack-assembly possible Suitable for safety functions Category according to EN 954-1 SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height Height mm O - 0 Ves Ves Ves No No No No No No No No	Degree of protection (IP)			IP20
Fieldbus connection over separate bus coupler possible Rail mounting possible Wall mounting/direct mounting Front build in possible Rack-assembly possible Suitable for safety functions Category according to EN 954-1 SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height Mo Pagendant operation agent (Ex ib) In mm Midus Midu	Type of electric connection			Plug-in connection
Rail mounting possible Wall mounting/direct mounting Front build in possible Front build in possible Rack-assembly possible Rack-assembly possible Suitable for safety functions Category according to EN 954-1 SIL according to EN 954-1 SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height Height No	Time delay at signal exchange	r	ms	0 - 0
Wall mounting/direct mounting Front build in possible Rack-assembly possible Rock-assembly possible Suitable for safety functions Category according to EN 954-1 SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height No	Fieldbus connection over separate bus coupler possible			Yes
Front build in possible Rack-assembly possible Rack-assembly possible Suitable for safety functions Category according to EN 954-1 SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height No None	Rail mounting possible			Yes
Rack-assembly possible Suitable for safety functions Category according to EN 954-1 SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height No	Wall mounting/direct mounting			No
Suitable for safety functions Category according to EN 954-1 SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height No No No No No No No No No N	Front build in possible			No
Category according to EN 954-1 SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height None	Rack-assembly possible			No
SIL according to IEC 61508 Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height None None None None None None None None Mode None None None None None None None Mode None Mode None None None None None Mode None	Suitable for safety functions			No
Performance level acc. to EN ISO 13849-1 Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height None None None None 100.8 mm 100.8	Category according to EN 954-1			
Appendant operation agent (Ex ia) Appendant operation agent (Ex ib) Appendant operation agent (Ex ib) No Explosion safety category for gas Explosion safety category for dust Width Height None	SIL according to IEC 61508			None
Appendant operation agent (Ex ib) Explosion safety category for gas Explosion safety category for dust Width Height No None None None None Mone Mone At 1	Performance level acc. to EN ISO 13849-1			None
Explosion safety category for gas Explosion safety category for dust Width Height None None None None None None None None Mm 100.8 Haight	Appendant operation agent (Ex ia)			No
Explosion safety category for dust Width mm 100.8 Height mm 74.1	Appendant operation agent (Ex ib)			No
Width mm 100.8 Height mm 74.1	Explosion safety category for gas			None
Height mm 74.1	Explosion safety category for dust			None
	Width	r	mm	100.8
Depth mm 55.4	Height	r	mm	74.1
	Depth	r	mm	55.4

Approvals

Product Standards	UL 508; CSA-C22.2 No. 142; IEC/EN 6113-2; CE marking
UL File No.	E205091
UL Category Control No.	NRAQ, NRAQ7
CSA File No.	UL report applies to both US and Canada
CSA Class No.	2252-01, 2252-81
North America Certification	UL recognized, certified by UL for use in Canada
Specially designed for North America	No
Current Limiting Circuit-Breaker	No
Degree of Protection	IEC: IP20, UL/CSA Type: -

Dimensions



Additional product information (links)

MN05002010Z Manual Digital XI/ON modules, power supply modules				
MN05002010Z Handbuch Digitale XI/ON- Module Versorgungsmodule - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05002010Z_DE.pdf			
MN05002010Z Manual Digital XI/ON modules, power supply modules - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05002010Z_EN.pdf			
Technical Data	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=14.111			