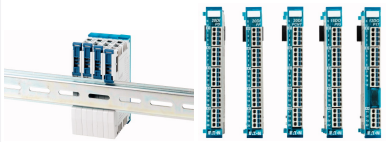
Digital input module; 20 digital inputs 24 V DC each; pulse-switching; 2/4 CNT; 25 kHz

Powering Business Worldwide

Part no. XN-322-20DI-PCNT
Article no. 178767
Catalog No. XN-322-20DI-PCNT

Delivery program

Photo			
Function			XN300 I/O slice modules
Connection technique			Push-in spring-cage terminal
Function			XN-322 digital input module for XN300
Short Description			20 digital inputs 24 V DC each, pulse-switching, 2/4 CNT, 25 kHz
Description			Digital I/O module with sixteen 24 VDC / 3.7 mA (EN61131-2 type 1) inputs with a 0.5 ms input filter. An additional four 24 VDC / 3.7 mA (EN61131-2 type 1) inputs with a 0.01 ms input filter can be used as four 8-bit or two 16-bit counters with an input frequency of up to 25 kHz.
For use with			XN-312-…

Technical data

General

Standards			IEC/EN 61131-2 IEC/EN 61000-6-2 IEC/EN 61000-6-4
Electromagnetic compatibility (EMC)			
ESD	Air/contact discharge	kV	8 / 4
Electromagnetic fields	(0.08…1) / (1,4…2) / (2…2,7) GHz	V/m	10 / 3 / 1
Burst			
Supply cable		kV	2
Signal cable		kV	1
Surge			
Supply cable (balanced/unbalanced)		kV	0,5 / 0,5
Signal cable (unbalanced)		kV	1
Radiated RFI		V	10
Emitted interference (radiated, high frequency)	(30...230 MHz) / (230...1000 MHz)	dB	40 / 47 class A
Voltage fluctuations/voltage dips			Yes / 10 ms
Umgebungsbedingungen			
Klima			
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3
Air pressure (operation)		hPa	795 - 1080
Relative humidity			0 - 95%, non condensing

Condensation			prevent with suitable measures
Temperature			
Betrieb		°C	0 - +55
Storage, transport	ϑ	°C	-20 - +85
Degree of Protection			IP20
Mounting position			Horizontal
Free fall, packaged (IEC/EN 60068-2-32)		m	1
Vibrations	3,5 mm / 1 g	Hz	5 - 8.4 / 8.4 -150
Mechanical shock resistance	Semisinusoida 15 g/11 ms	Impacts	18

Terminations

Rated operational data			
Insulating material group			I
Overvoltage category / pollution degree			III / 3
Rated operating voltage		V	160
Maximum load current/cross-sectional area		A / mm²	X (not specified by plug manufacturer)
Connection design in TOP direction			Push-in spring-cage terminal (plug-in connection)
Stripping length		mm	10
Gauge pin IEC/EN 60947-1			A1
Anschlussvermögen			
"e" solid H07V-U		mm^2	0.2 - 1.5
"f" flexible H 07V-K		mm^2	0.2 - 1.5
"f" with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)		mm^2	0.25-1,5
"f" with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)		mm^2	0.25-1,5
Cable size		AWG	24 - 16

Supply

Power supply - Input			
Power supply			
Current consumption for +5 V power supply (internal)	I	mA	(typ.) 40
Current consumption for +24 V power supply	I	mA	(typ.) none
Potential isolation	PE (polyethylene)		no
Heat dissipation			
Heat dissipation (without active channels)		W	0.225
Max. heat dissipation		W	3.012
Notes on heat dissipation			The max. heat dissipation is specified as the maximum power produced inside the device's housing.

Digital inputs

Channels		Number	16
Input voltage			
Nominal input voltage	U_e	V DC	24
Low level	U_eL	V	$0 < U_eL < +8$
High level	U_eH	V	+14 < UeH < +30
Input current			
Input current, nominal value	I_e	mA	3.7
Low level/active level	I_eL	mA	≤1.1
High level/active level	I_{eH}	mA	≥2.3
Input delay			
$t_{Rising\ edge}$		µs	< 500
$t_{Falling\ edge}$		µs	< 500
Potential isolation		Input to input	no
Heat dissipation (per active channel)		W	0.088

Digital inputs

Channels		Quantity	4
Input voltage			

Input voltage, nominal value	U_e	V DC	24
Low level	U_eL	V	$0 < U_eL < +8$
High level	U_eH	V	+14 < UeH < +30
Input current			
Input current, nominal value	Ie	mA	3.7
Low level/active level	IeL	mA	≤1.1
High level/active level	I_{eH}	mA	≥2.3
Input delay			
$t_{rising\ edge}$		µs	10
$t_{falling\ edge}$		µs	10
Potential isolation		Input to input	no
Heat dissipation (per active channel)		W	0.088
Notes on digital inputs			Inputs as per EN61131-2 Type 1

Functions

Counting mode			
Operate Mode			Counter mode
Channels		Quantity	4
Resolution		Bit	8
Input frequency	f_{max}	kHz	25
Signal analysis			X1 encoding
Counter frequency	f_{max}	kHz	25
Operate Mode			Incremental encoder (A, B)
Channels		Quantity	2
Resolution		Bit	16
Input frequency	f_{max}	kHz	25
Signal analysis			4X encoding
Counter frequency	f_{max}	kHz	100
Notes on operating mode			Inputs configurable in pairs

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	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	3.012
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	55
Degree of Protection			IP20
IEC/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.

Technical data ETIM 6.0

PLC's (EG000024) / Fieldbus, decentr. periphery - digital I/O module (EC001599)

Electric engineering, automation, process control engineering / Control / Field bus, decentralized peripheral / Field bus, decentralized peripheral - digital I/O module (ecl@ss8.1-27-24-26-04 [BAA055011])

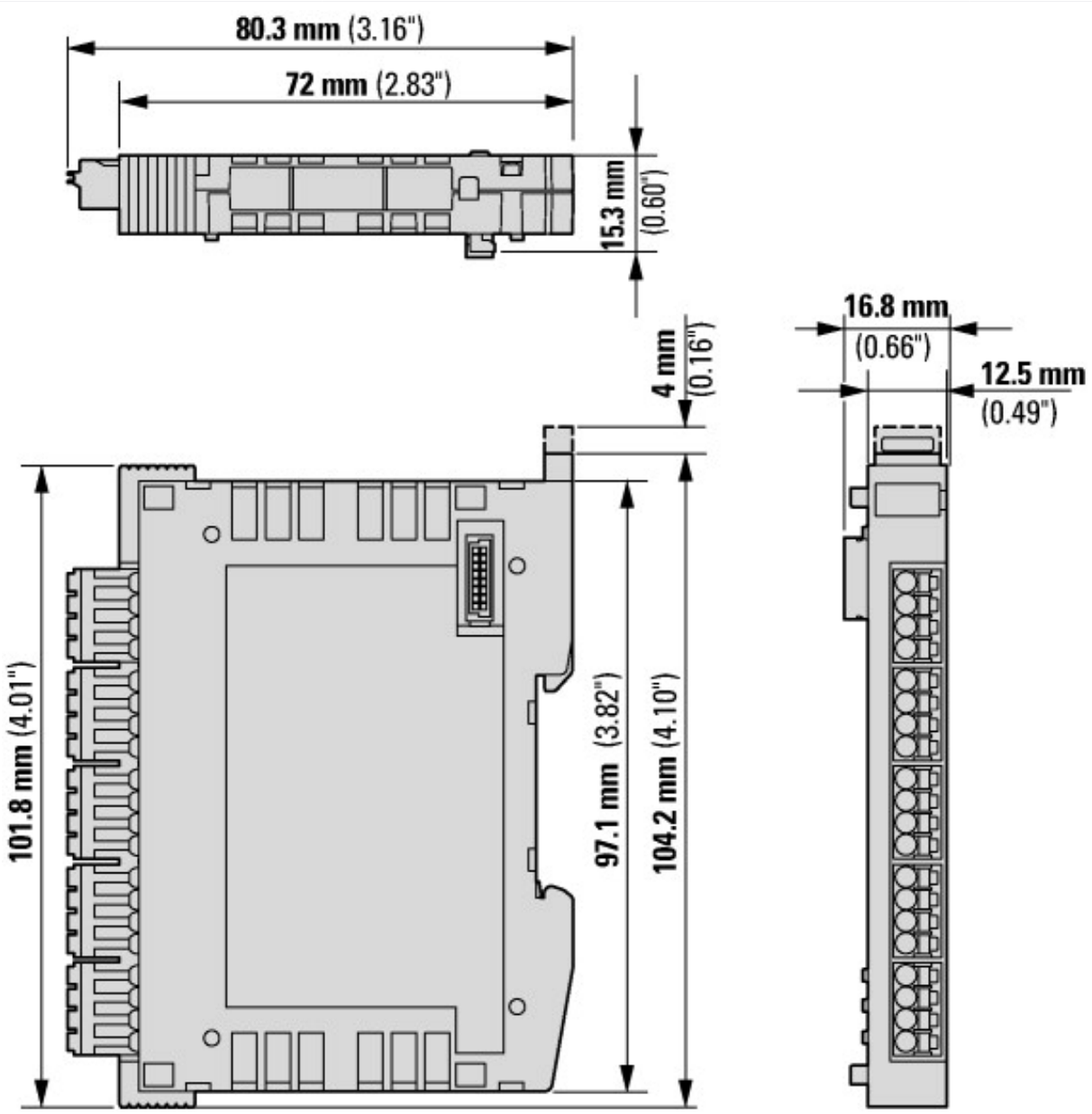
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	18 - 30
Voltage type of supply voltage		DC
Number of digital inputs		20
Number of digital outputs		0
Digital inputs configurable		Yes
Digital outputs configurable		No
Input current at signal 1	mA	2.3
Permitted voltage at input	V	14 - 30
Type of voltage (input voltage)		DC
Type of digital output		None
Output current	A	1.7
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		No
Supporting protocol for CAN		No
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		No
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
Supporting protocol for SafetyBUS p		No
Supporting protocol for other bus systems		Yes
Radio standard Bluetooth		No
Radio standard WLAN 802.11		No
Radio standard GPRS		No
Radio standard GSM		No
Radio standard UMTS		No
IO link master		No
System accessory		Yes
Degree of protection (IP)		IP20
Type of electric connection		Spring clamp connection
Time delay at signal exchange	ms	0 - 0.2
Fieldbus connection over separate bus coupler possible		No
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		-
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	16.8
Height	mm	104.2
Depth	mm	80.3

Approvals

Product Standards		CE, cULus
UL File No.		E135462

Dimensions



Notes: The plugs/connectors used depend on the version.

Additional product information (links)

MN050002 Manual XN300 digital I/O modules, analog I/O modules, power supply modules, technology modules	
MN050002 Handbuch XN300 Digitale I/O-Module, Analoge I/O-Module, Versorgungsmodule, Technologiemodule - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050002_DE.pdf
MN050002 Manual XN300 digital I/O modules, analog I/O modules, power supply modules, technology modules - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050002_EN.pdf