



Analog input module; 4 analog inputs; Pt/Ni/KTY/R with 2-wire or 3-wire connection


Part no. XN-322-4AI-PTNI
Catalog No. 178772
Alternate Catalog No. XN-322-4AI-PTNI

Delivery program

Function			XN300 I/O slice modules
Connection technique			Push-in spring-cage terminal
Function			XN-322 analog input module for XN300
Short Description			4 analog resistance inputs, Pt/Ni/KTY/R with 2-wire or 3-wire connection
Description			Analog input module for four PT100/PT1000/Ni100/Ni1000KTYxx/R resistance inputs with 2-wire and 3-wire configurations.
For use with			XN-312-...

Technical data

General

Standards				IEC/EN 61131-2 IEC/EN 61000-6-2 IEC/EN 61000-6-4
Approvals				
Approvals				CE, cULus EAC
shipping classification				DNV GL
				
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
Ambient conditions				

Climatic conditions			
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			
Operation		°C	0 - +60
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	Impacts	18 15 g/11 ms

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 / mm ²	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
Connection specifications			
"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.) 0
Current consumption for +24 V power supply	I	mA	(typ.) 37
Potential isolation	PE (polyethylene)		no
Heat dissipation			
Heat dissipation (without active channels)		W	0.768
Max. heat dissipation		W	1.08
Notes on heat dissipation			The max. heat dissipation is specified as the maximum power produced inside the device's housing.

Analog inputs

Channels		Quantity	4
Measured variables			Resistance, temperature
Resolution		Bit	16
Min. value refresh time/cycle time	per channel / all channels	ms	4 / 4
Hardware input filter			10 kHz, second-order low-pass filter
Software input filter			parameterizable
Potential isolation			500 Veff

Functions

Temperature and resistance measurement			
Channels		Quantity	4
Connectable sensors			PT / NI / KTY / R
Measurement ranges	temperature		PT100/200/500/1000: -200 ... +150 °C PT100/200/500/1000: -200 ... +850 °C NI100/1000: -60 ... +150 °C

			NI100/1000: -60 ... +250 °C KTY11: -50 ... +150 °C KTY81: -55 ... +150 °C KTY84: -40 ... +300 °C
Measurement ranges	resistor		0 - 250 0 - 500 0 - 1000 0 - 2500 0 - 5000
Value representation			SIGNED16 (0.1 °C), UNSIGNED16 (0.1 Ω)
For connection of:			2-conductor/3-conductor
Destruction limit	U_{max}		560 V_{eff}
Accuracy		% of full scale	±0.3
Notes on temperature and resistance measurements			Measurement current < 0.3

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	1.08
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 7.0

PLC's (EG000024) / Fieldbus, decentr. periphery - analogue I/O module (EC001596)			
Electric engineering, automation, process control engineering / Control / Field bus, decentralized peripheral / Field bus, decentralized peripheral - analogue I/O module (ecl@ss10.0.1-27-24-26-01 [BAA061014])			
Supply voltage AC 50 Hz		V	0 - 0
Supply voltage AC 60 Hz		V	0 - 0

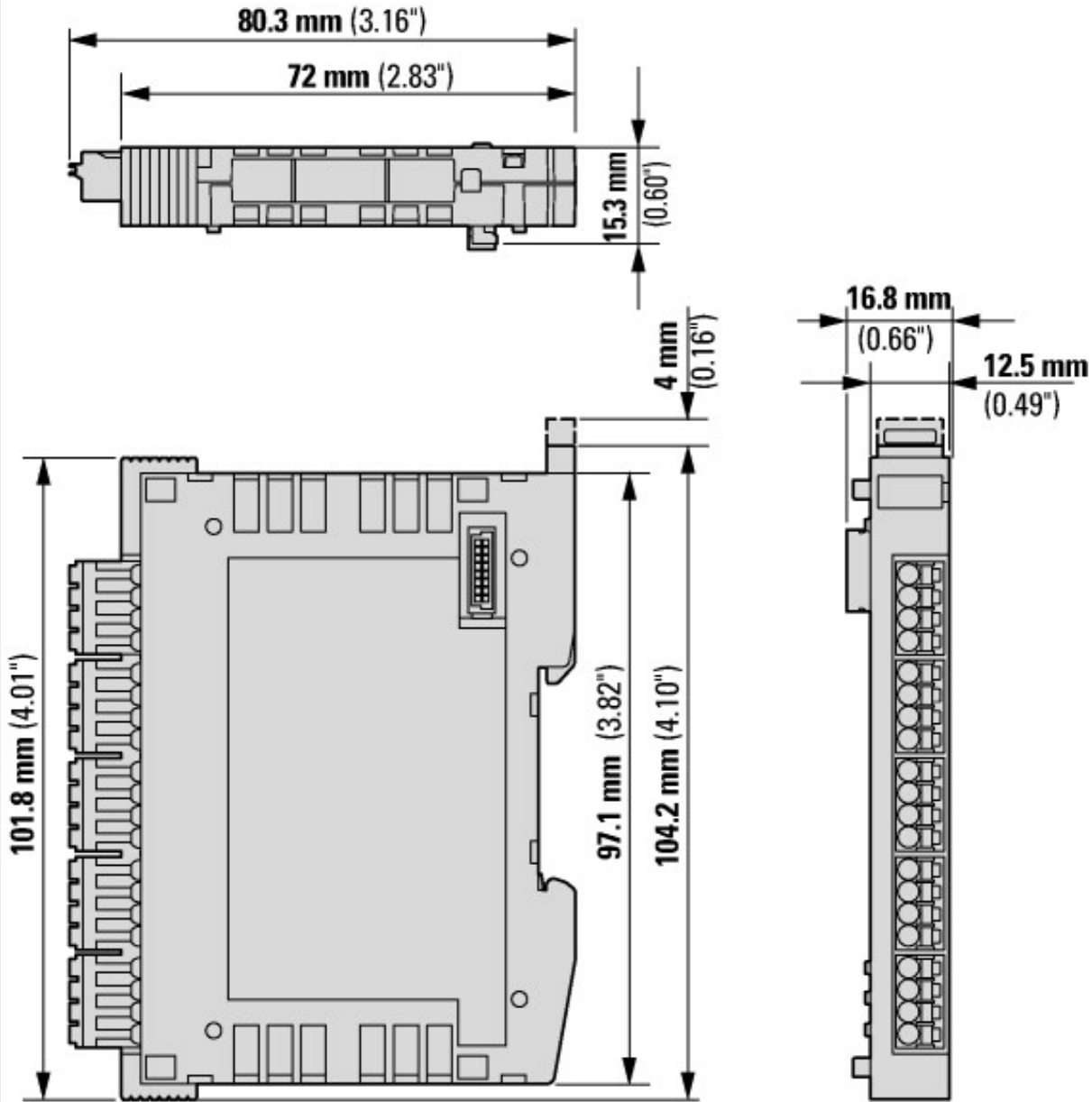
Supply voltage DC	V	18 - 30
Voltage type of supply voltage		DC
Input, current		No
Input, voltage		No
Input, resistor		Yes
Input, resistance thermometer		Yes
Input, thermocouple		No
Input signal, configurable		No
Resolution of the analogue inputs	Bit	16
Output, current		No
Output, voltage		No
Output signal configurable		No
Resolution of the analogue outputs	Bit	0
Number of analogue inputs		4
Number of analogue outputs		0
Analogue inputs configurable		Yes
Analogue outputs configurable		No
Number of HW-interfaces industrial Ethernet		0
Number of 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 USB		0
Number of HW-interfaces other		1
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		No
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
Degree of protection (NEMA)			
Type of electric connection			Screw-/spring clamp connection
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			
SIL according to IEC 61508			None
Performance level acc. 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)

Manual XN300 digital I/O modules, analog I/O modules, power supply modules, technology modules MN050002

Handbuch XN300 digitale E/A-Module, analoge E/A-Module, Stromversorgungsmodule, Technologiemodule MN050002 - Deutsch ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050002_DE.pdf

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