



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
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 (ec@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

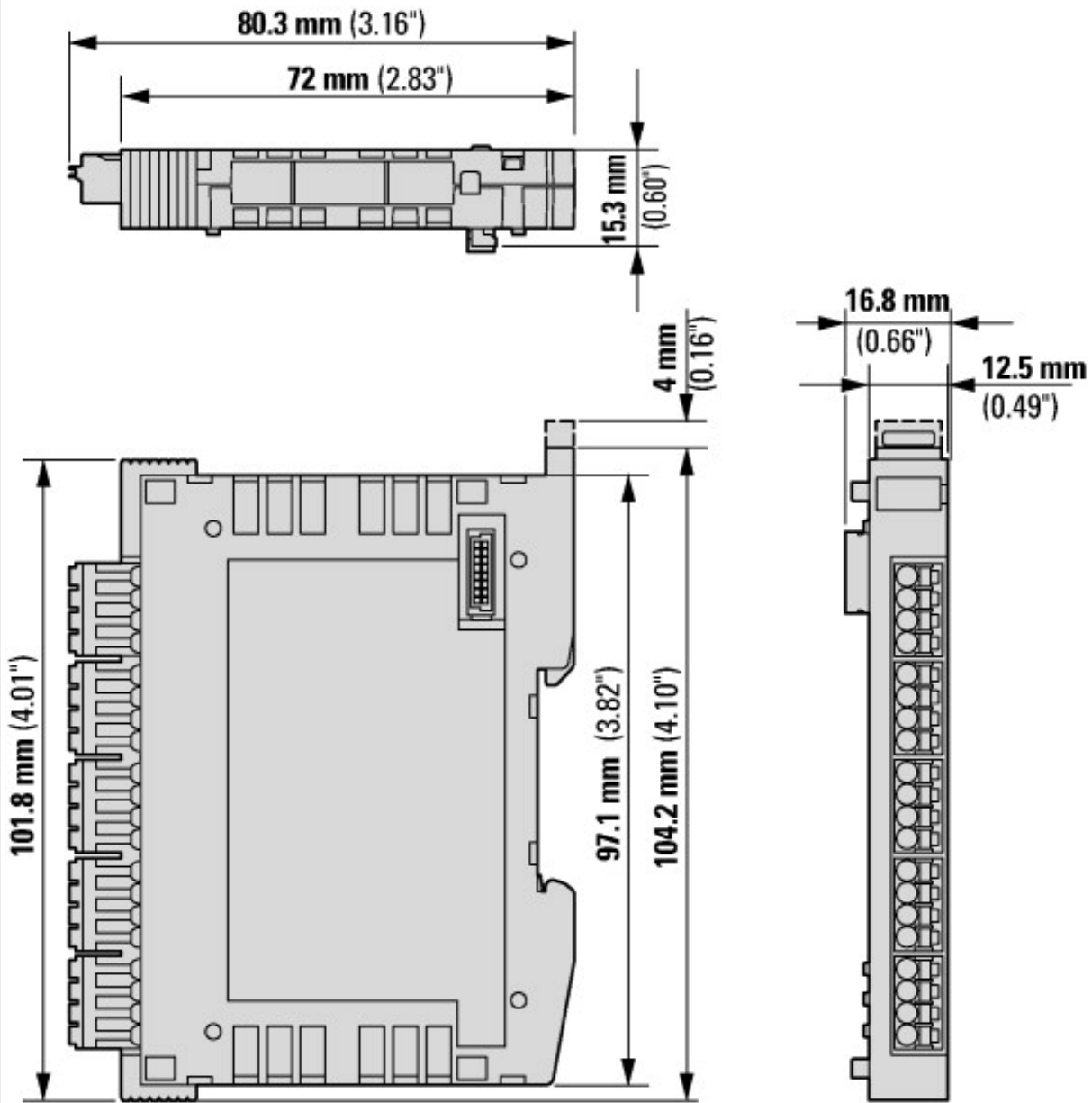
Voltage type of supply voltage			DC
Input, current			No
Input, voltage			No
Input, resistor			Yes
Input, resistance thermometer			Yes
Input, thermocouple			No
Input signal, configurable			No
Resolution of the analogue inputs		Bit	16
Output, current			No
Output, voltage			No
Output signal configurable			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)

f1=1457&f2=1282&f3=1836;Download Wizard XN300-Assist

<http://applications.eaton.eu/sdlc?LX=11&f1=1457&f2=1282&f3=1836>