DATASHEET - XN-322-4AIO-U2

Analog I/O module, 2 analog inputs and 2 analog outputs, +/-10 V, Uref

Part no.	**XN-322-4AIO-U2**
Catalog No.	**183181**
Alternate Catalog No.	**XN-322-4AIO-U2**

Powering Business Worldwide

Delivery program

Function			XN300 I/O slice modules
Connection technique			Push-in spring-cage terminal
Function			XN-322 analog input and output module for XN300
Short Description			2 analog inputs and 2 analog outputs, +/-10 V, Uref
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
			TYPE APPROVED PRODUCT DNV·GL MARITIME
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 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 / 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.) 55
Current consumption for +24 V power supply	I	mA	(typ.) 45
Potential isolation	PE (polyethylene)		no
Power supply - Output			
Sensor/transmitter supply			
Rated operating voltage	Ua	V	10
Rated operational current	I_{max}	A	0.0083
Potential isolation			no
Notes on power supply			Reference voltage output: permissible output current of 4.17 mA per channel
Heat dissipation			
Heat dissipation (without active channels)		W	1.018
Max. heat dissipation		W	1.952
Notes on heat dissipation			The max. heat dissipation is specified as the maximum power produced inside the device's housing.

Analog inputs

Channels		Quantity	2
Measured variables			Voltage or potentiometer
Resolution		Bit	16
Min. value refresh time/cycle time	per channel / all channels	ms	1 / 1
Hardware input filter			Typically: 1 kHz, third-order low-pass filter
Software input filter			parameterizable
Potential isolation			no

Analog output modules

Analog outputs			
Channels		Quantity	2
Output voltage			
Output voltage, nominal value		V DC	-10 ... +10
Resolution		Bit	12
Refresh time	All channels	ms	1
For connection of:			2 conductors
Load resistor			
Resistive load		Ω	>5000
Capacitive load		µF	0.1
Short-circuit strength			yes
Short-circuit current	per channel	mA	30
Accuracy		% of full scale	±0.5

Functions

Voltage measurement			
Channels		Quantity	2
Measurement ranges		V DC	-10 … +10
Value representation		m V	SIGNED16
For connection of:			2 conductors
Maximum input voltage		V DC	14
Common-mode range		V DC	±12
Input resistance		MΩ	> 10
Limiting frequency			Typically: 1 kHz (third-order low-pass filter)
Accuracy		% of full load	±0.3
Notes on voltage measurement			Open wire monitoring. The channels can also be used as potentiometer inputs.

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	1.952
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])

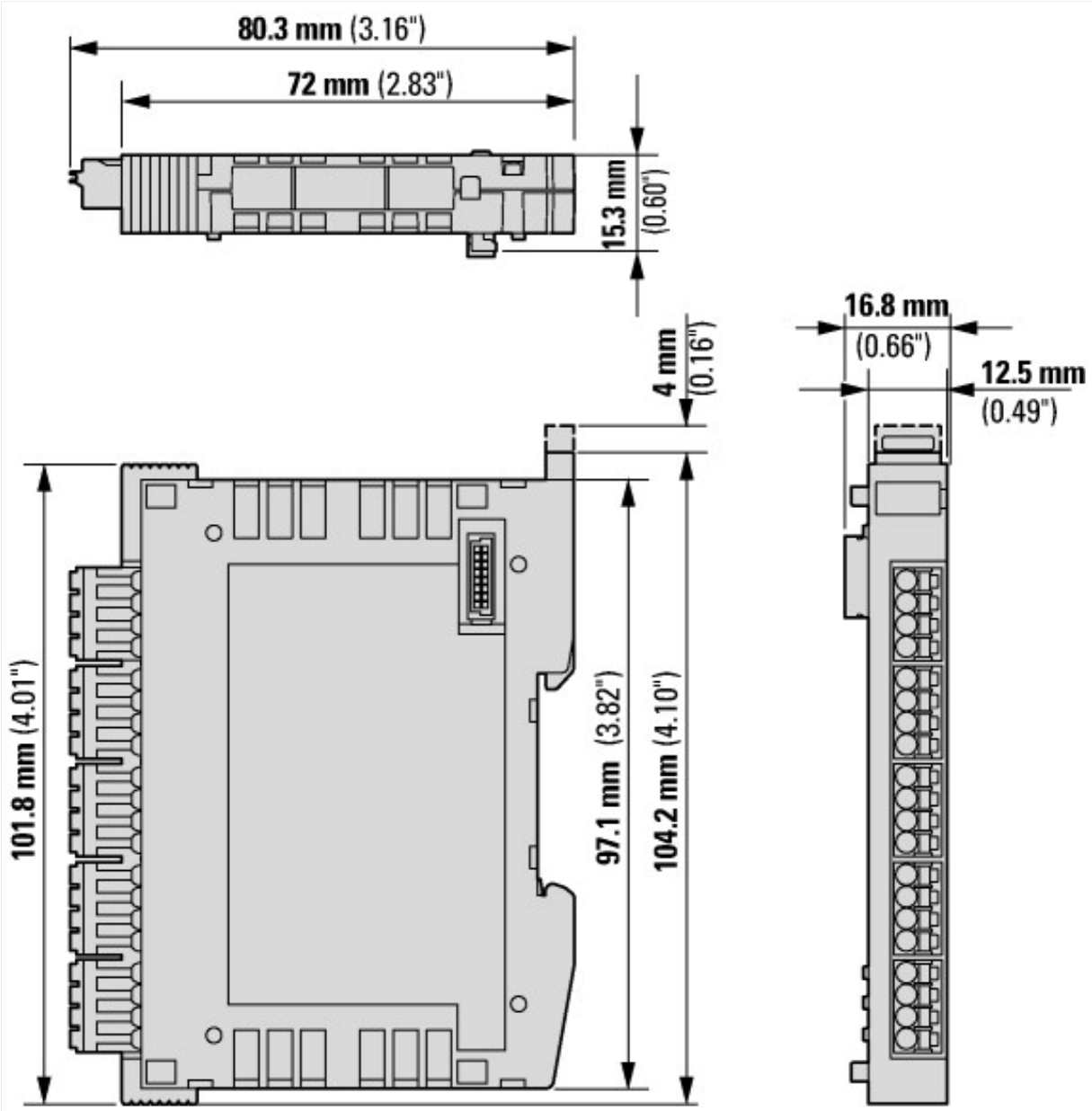
Supply voltage AC 50 Hz		V	0 - 0
Supply voltage AC 60 Hz		V	0 - 0
Supply voltage DC		V	18 - 30
Voltage type of supply voltage			DC
Input, current			No
Input, voltage			Yes
Input, resistor			No
Input, resistance thermometer			No
Input, thermocouple			No
Input signal, configurable			No
Resolution of the analogue inputs		Bit	16
Output, current			No
Output, voltage			Yes
Output signal configurable			No
Resolution of the analogue outputs		Bit	12
Number of analogue inputs			2
Number of analogue outputs			2
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			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			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		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. 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	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050002_DE.pdf
Manual XN300 digital I/O modules, analog I/O modules, power supply modules, technology modules MN050002 - English	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN050002_EN.pdf
f1=1457&f2=1282&f3=1836;Download Wizard XN300-Assist	http://applications.eaton.eu/sdlc?LX=11&amp