



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

Part no. **XN-322-4AIO-U2**
183181

General specifications	
Product name	Eaton XN-322 I/O module
Part no.	XN-322-4AIO-U2
EAN	4015081781140
Product Length/Depth	104.2 millimetre
Product height	16.8 millimetre
Product width	80.3 millimetre
Product weight	0.055 kilogram
Certifications	UL File No.: E135462 IEC/EN 61000-6-2 CULus CE IEC/EN 61000-6-4 IEC/EN 61131-2
Product Tradename	XN-322
Product Type	I/O module
Product Sub Type	None
Catalog Notes	Reference voltage output: permissible output current of 4.17 mA per channel The max. heat dissipation is specified as the maximum power produced inside the device's housing.
Features & Functions	
Electric connection type	Plug-in connection
Features	Analog outputs configurable Output, voltage Input, voltage Analog inputs configurable Fieldbus connection over separate bus coupler possible Input signal, configurable
Fitted with:	1 kHz, third-order low-pass input filter Parameterizable Software input filter
Value representation	SIGNED16, mV, Voltage measurement
Voltage measurement	± 12 V DC, Common-mode range Open wire monitoring. -10 - 10 V DC, Measurement range > 10 MΩ, Input resistance The channels can also be used as potentiometer inputs.
General information	
Current consumption	55 mA (typ.), for +5 V power supply (internal), Power supply - Input 45 mA (typ.), for +24 V, Power supply - Input
Degree of protection	IP20 NEMA 1
Limit frequency	1 kHz (third-order low-pass filter)
Mounting method	Rail mounting possible
Number of channels	2, Analog Inputs
Overvoltage category	III
Pollution degree	3
Product category	XN-322 analog input and output module
Resolution	12 Bit (Analog outputs) 16 Bit (Analog inputs)
Type	Analog mixed module with 2 analog outputs -10 to +10 V (12 bit) and 4 analog inputs -10 to +10 V (16 bit) or potentiometer inputs (0-100%, reference output (+10 V/10 mA). XN300 I/O slice module
Used with	XN300 XN-312-...
Voltage type	DC
Ambient conditions, mechanical	
Height of fall (IEC/EN 60068-2-32) - max	1 m

Mounting position		Horizontal
Shock resistance		15 g, Mechanical, Half-sinusoidal shock 11 ms, 18 Impacts
Vibration resistance		5 - 8.4 / 8.4 -150 Hz, 3,5 mm / 1 g
Climatic environmental conditions		
Air pressure		795 - 1080 hPa (operation)
Ambient operating temperature - min		0 °C
Ambient operating temperature - max		60 °C
Ambient storage temperature - min		-20 °C
Ambient storage temperature - max		85 °C
Climatic proofing		Dry heat to IEC 60068-2-2 Damp heat, constant, to IEC 60068-2-3
Environmental conditions		Condensation: prevent with appropriate measures
Relative humidity		0 - 95 % (non-condensing)
Electro magnetic compatibility		
Air discharge		8 kV
Burst impulse		1 kV, Signal cable 2 kV, Supply cable
Contact discharge		4 kV
Electromagnetic fields		1 V/m at 2 - 2.7 GHz (according to IEC EN 61000-4-3) 10 V/m at 0.08 - 1.0 GHz (according to IEC EN 61000-4-3) 3 V/m at 1.4 - 2 GHz (according to IEC EN 61000-4-3)
Emitted interference		47 dB (at 230 - 1000 MHz, Class A, radiated, high frequency) 40 dB (at 30 - 230 MHz, Class A, radiated, high frequency)
Radiated RFI		10 V
Surge rating		1 kV, Signal cable, unbalanced, EMC 0.5/0.5 kV, Supply cable, balanced/unbalanced, EMC
Voltage dips		Voltage dips: 10 ms/Voltage fluctuations: Yes
Terminal capacities		
Terminal capacity		0.25 - 1.5 mm ² , with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 0.25 - 1.5 mm ² , with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 0.2 - 1.5 mm ² , flexible without ferrule, H07V-K 24 - 16 AWG 0.2 - 1.5 mm ² , solid, H07V-U
Gauge pin		A1 (according to IEC/EN 60947-1)
Stripping length (main cable)		10 mm
Insulating material group		I
Electrical rating		
Rated control supply voltage		10 V (Sensor/transmitter supply)
Rated operational current (Ie)		Max. 0.0083 A (supply output)
Rated operational voltage		160 V (terminations)
Short-circuit current		30 mA, per channel, Analog outputs
Short-circuit protection		Yes, Short-circuit strength, Analog outputs
Supply voltage at AC, 50 Hz - min		0 V AC
Supply voltage at AC, 50 Hz - max		0 V AC
Supply voltage at DC - min		18 V DC
Supply voltage at DC - max		30 V DC
Communication		
Connection type		2 conductors, Voltage measurement Push-in spring-cage terminal (plug-in connection), Connection design in TOP direction 2 conductors, Analog outputs, Output voltage
Protocol		Other bus systems
Input/Output		
Accuracy		± 0.5 % of full scale, Analog outputs ± 0.3 % of full scale, Voltage measurement
Capacitive load		0.1 µF, Analog outputs
Input		2 Analog inputs (±10 V, Uref)
Input voltage		Max. 14 V DC
Load current		Not specified by plug manufacturer

Measured variables		Voltage or potentiometer
Number of inputs (analog)		2
Number of outputs (analog)		2
Output		2 Analog Outputs (± 10 V)
Output voltage		-10 - 10 V DC (analog outputs)
Refresh time		1 ms (analog inputs, all channels)
Resistive load		> 5000 Ω , analog outputs
Value refresh time/cycle time		Min. 1 / 1 ms (per channel / all channels), Analog Inputs
Safety		
Explosion safety category for dust		None
Explosion safety category for gas		None
Potential isolation		Analog inputs: no Sensor/transmitter supply: no
Design verification		
Equipment heat dissipation, current-dependent Pvid		0 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		1.018 W
Rated operational current for specified heat dissipation (In)		0 A
Static heat dissipation, non-current-dependent Pvs		1.952 W
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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 9.0

Programmable logic controllers PLC (EG000024) / Fieldbus, decentr. periphery - analogue I/O module (EC001596)		
Electric engineering, automation, process control engineering / Control, Process Control System (PCS) / Field bus, decentralized peripheral / Field bus, decentralized peripheral - analogue I/O module (ecl@ss13-27-24-26-01 [BAA061019])		
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	18 - 30
Voltage type (supply voltage)		DC
Power consumption	W	1.2
Input, current		No
Input, voltage		Yes
Input, resistor		No
Input, resistance thermometer		No

Input, thermocouple		No
Input signal, configurable		Yes
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		Yes
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 EtherCAT		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
Degree of protection (NEMA)		1
Type of electric connection		Plug-in connection
Fieldbus connection over separate bus coupler possible		Yes

Rail mounting possible			Yes
Wall mounting/direct mounting			No
Front built-in possible			No
Rack-assembly possible			No
Suitable for safety functions			No
SIL according to IEC 61508			None
Performance level according 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
Certified for UL hazardous location class I			No
Certified for UL hazardous location class II			No
Certified for UL hazardous location class III			No
Certified for UL hazardous location division 1			No
Certified for UL hazardous location division 2			No
Certified for UL hazardous location group A (acetylene)			No
Certified for UL hazardous location group B (hydrogen)			No
Certified for UL hazardous location group C (ethylene)			No
Certified for UL hazardous location group D (propane)			No
Certified for UL hazardous location group E (metal dusts)			No
Certified for UL hazardous location group F (carbonaceous dusts)			No
Certified for UL hazardous location group G (non-conductive dusts)			No
Width		mm	80.3
Height		mm	16.8
Depth		mm	104.2