

Analog input and output module; 4 analog inputs and 4 analog outputs; 0/4 to 20 mA

Part no. **XN-322-8AIO-I**  
**178771**

<b>General specifications</b>		
Product name		Eaton XN-322 I/O module
Part no.		XN-322-8AIO-I
EAN		7640130098350
Product Length/Depth		104.2 millimetre
Product height		16.8 millimetre
Product width		80.3 millimetre
Product weight		0.061 kilogram
Certifications		IEC/EN 61000-6-2 UL File No.: E135462 IEC/EN 61000-6-4 CE CULus IEC/EN 61131-2
Product Tradename		XN-322
Product Type		I/O module
Product Sub Type		None
Catalog Notes		The max. heat dissipation is specified as the maximum power produced inside the device's housing.
<b>Features &amp; Functions</b>		
Current measurement		50 Ω typ., input resistance 0 - 20 mA
Electric connection type		Plug-in connection
Features		Analog outputs configurable Input, current Output, current Analog inputs configurable Fieldbus connection over separate bus coupler possible Input signal, configurable
Fitted with:		Parameterizable Software input filter 1 kHz, third-order low-pass input filter
Value representation		SIGNED16, Current measurement
<b>General information</b>		
Current consumption		55 mA (typ.), for +5 V power supply (internal), Power supply - Input None 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		4, 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 4 analog outputs 0/4 to 20 mA (12 bit) and 4 analog inputs 0/4 to 20 mA (16 bit). XN300 I/O slice module
Used with		XN300 XN-312-...
Voltage type		DC
<b>Ambient conditions, mechanical</b>		
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
<b>Climatic environmental conditions</b>			
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			Damp heat, constant, to IEC 60068-2-3 Dry heat to IEC 60068-2-2
Environmental conditions			Condensation: prevent with appropriate measures
Relative humidity			0 - 95 % (non-condensing)
<b>Electro magnetic compatibility</b>			
Air discharge			8 kV
Burst impulse			2 kV, Supply cable 1 kV, Signal 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
<b>Terminal capacities</b>			
Terminal capacity			24 - 16 AWG 0.2 - 1.5 mm <sup>2</sup> , flexible without ferrule, H07V-K 0.25 - 1.5 mm <sup>2</sup> , with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 0.25 - 1.5 mm <sup>2</sup> , with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 0.2 - 1.5 mm <sup>2</sup> , solid, H07V-U
Gauge pin			A1 (according to IEC/EN 60947-1)
Stripping length (main cable)			10 mm
Insulating material group			I
<b>Electrical rating</b>			
Rated operational current (Ie)			0.078 A (supply input)
Rated operational voltage			24 V (X5) 160 V (terminations)
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
<b>Communication</b>			
Connection type			Push-in spring-cage terminal (plug-in connection), Connection design in TOP direction 2 conductors, Current measurement 2 conductors, Analog outputs, Output current
Protocol			Other bus systems
<b>Input/Output</b>			
Accuracy			± 0.5 % of full scale, Analog outputs ± 0.5 % of full scale, Current measurement
Input			4 Analog inputs (0/4 - 20 mA)
Input current			Max. 100 mA
Load current			Not specified by plug manufacturer
Measured variables			Current
Number of inputs (analog)			4
Number of outputs (analog)			4
Output			4 Analog Outputs (0/4 - 20 mA)

Output current			0 - 20 mA, Analog outputs
Refresh time			1 ms (analog inputs, all channels)
Resistive load			≤ 500 Ω, analog outputs
Value refresh time/cycle time			Min. 1 / 1 ms (per channel / all channels), Analog Inputs
<b>Safety</b>			
Explosion safety category for dust			None
Explosion safety category for gas			None
Potential isolation			Analog inputs: no Power supply, Input: no
<b>Design verification</b>			
Equipment heat dissipation, current-dependent Pvid			0 W
Heat dissipation capacity Pdis			0 W
Heat dissipation per pole, current-dependent Pvid			0.851 W
Rated operational current for specified heat dissipation (In)			0 A
Static heat dissipation, non-current-dependent Pvs			2.58 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	2.6
Input, current			Yes
Input, voltage			No
Input, resistor			No
Input, resistance thermometer			No
Input, thermocouple			No
Input signal, configurable			Yes
Resolution of the analogue inputs		Bit	16
Output, current			Yes

Output, voltage		No
Output signal configurable		No
Resolution of the analogue outputs	Bit	16
Number of analogue inputs		4
Number of analogue outputs		4
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