DATASHEET - XN-322-8AIO-U2

Analog input and output module; 4 analog inputs and 4 analog outputs; +/-10 V; Uref

Powering Business Worldwide™

Part no. **XN-322-8AIO-U2**
178791

General specifications

Product name	Eaton XN-322 Output module
Part no.	XN-322-8AIO-U2
EAN	7640130098251
Product Length/Depth	104.2 millimetre
Product height	16.8 millimetre
Product width	80.3 millimetre
Product weight	0.061 kilogram
Certifications	CULus IEC/EN 61131-2 IEC/EN 61000-6-4 UL File No.: E135462 CE IEC/EN 61000-6-2
Product Tradename	XN-322
Product Type	Output 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 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	> 10 MΩ, Input resistance The channels can also be used as potentiometer inputs. -10 - 10 V DC, Measurement range Open wire monitoring. ± 12 V DC, Common-mode range

General information

Current consumption	60 mA (typ.), for +24 V, Power supply - Input 50 mA (typ.), for +5 V power supply (internal), 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 -10 - +10 V (16 bit) and 4 analog inputs -10 - +10 V (12 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	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)
Electro magnetic compatibility	
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	40 dB (at 30 - 230 MHz, Class A, radiated, high frequency) 47 dB (at 230 - 1000 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	0.2 - 1.5 mm^2, flexible without ferrule, H07V-K 0.25 - 1.5 mm^2, with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 0.2 - 1.5 mm^2, solid, H07V-U 0.25 - 1.5 mm^2, with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 24 - 16 AWG
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. 0.0167 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 2 conductors, Analog outputs, Output voltage Push-in spring-cage terminal (plug-in connection), Connection design in TOP direction
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	4 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)		4
Number of outputs (analog)		4
Output		4 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 Pdiss		0 W
Heat dissipation per pole, current-dependent Pvid		1.21 W
Rated operational current for specified heat dissipation (In)		0 A
Static heat dissipation, non-current-dependent Pvs		2.495 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	1.8
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			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			No

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