

Digital output module; 16 digital outputs short-circuit proof 24 V DC/0.5 A each; pulse-switching



Part no. **XN-322-16DO-P05**
178787

General specifications

Product name	Eaton XN-322 Output module
Part no.	XN-322-16DO-P05
EAN	7640130098114
Product Length/Depth	104.2 millimetre
Product height	16.8 millimetre
Product width	80.3 millimetre
Product weight	0.061 kilogram
Certifications	IEC/EN 61131-2 UL File No.: E135462 IEC/EN 61000-6-4 CE CULus IEC/EN 61000-6-2
Product Tradename	XN-322
Product Type	Output module
Product Sub Type	None
Catalog Notes	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	Fieldbus connection over separate bus coupler possible
Functions	Short-circuit protection, outputs available

General information

Current consumption	None mA (typ.), for +24 V, Power supply - Input 45 mA (typ.), for +5 V power supply (internal), Power supply - Input
Degree of protection	IP20
Mounting method	Rail mounting possible
Number of channels	16, Digital Outputs
Oversupply category	III
Pollution degree	3
Product category	XN-322 digital output module
Type	Digital I/O module with sixteen 24 V DC / 0.5 A short-circuit proof outputs, featuring undervoltage diagnostics for the two power supply rails. XN300 I/O slice module
Used with	XN-312-... XN300
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	2 kV, Supply cable 1 kV, Signal cable
Contact discharge	4 kV
Electromagnetic fields	10 V/m at 0.08 - 1.0 GHz (according to IEC EN 61000-4-3) 1 V/m at 2 - 2.7 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	0.5/0.5 kV, Supply cable, balanced/unbalanced, EMC 1 kV, Signal cable, unbalanced, EMC
Voltage dips	Voltage dips: 10 ms/Voltage fluctuations: Yes
Terminal capacities	
Terminal capacity	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 , solid, H07V-U 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 , flexible without ferrule, H07V-K 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 operational current (Ie)	4 A (supply input)
Rated operational voltage	24 V (terminal + 2) 160 V (terminations) 24 V (terminal +1)
Short-circuit protection	Yes, Short-circuit rating, Digital 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	Push-in spring-cage terminal (plug-in connection), Connection design in TOP direction
Protocol	Other bus systems
Input/Output	
Delay time	< 100 µs, Digital outputs, Delay on signal change and resistive load, from Low to High signal < 100 µs, Digital outputs, Delay on signal change and resistive load, from High to Low signal
Input current at signal 1	0 mA
Load current	Not specified by plug manufacturer
Load resistance	> 48 Ω
Number of inputs (digital)	0
Number of outputs (digital)	16
Output	16 Digital Outputs (short-circuit proof, 24 V DC, 0.5 A, pulse-switching) Protective devices must be installed directly at the inductive load in order to prevent interference.
Output current	0.5 A < 0.5 mA (low level) ≤ 500 mA (high level, Digital outputs)
Output voltage	24 V DC (digital outputs) < 24 V DC (High level, digital outputs) < 1 V DC (Low level, digital outputs)
Utilization factor	100 % (# I _{Am} ax = 8A)
Safety	
Explosion safety category for dust	None
Explosion safety category for gas	None
Potential isolation	Power supply, Input: no

		Between Digital outputs: no
Design verification		
Equipment heat dissipation, current-dependent Pvid		0.25 W
Heat dissipation capacity Pdiss		0 W
Heat dissipation per pole, current-dependent Pvid		0 W
Rated operational current for specified heat dissipation (In)		0 A
Static heat dissipation, non-current-dependent Pvs		2.745 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 - digital I/O module (EC001599)		
Electric engineering, automation, process control engineering / Control, Process Control System (PCS) / Field bus, decentralized peripheral / Field bus, decentralized peripheral - digital I/O module (ecl@ss13-27-24-26-04 [BAA055019])		
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
Number of digital inputs		0
Number of digital outputs		16
Digital inputs configurable		No
Digital outputs configurable		No
Input current at signal 1	mA	0
Permitted voltage at input	V	0 - 0
Type of voltage (input voltage)		DC
Type of digital output		Transistor
Output current	A	0.5
Permitted voltage at output	V	0 - 30
Type of output voltage		DC
Short-circuit protection, outputs available		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	
With optical interface	No	
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	
Type of electric connection	Plug-in connection	
Time delay at signal change	ms	0.05 - 0.1
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