

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
Overvoltage 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 (I _e)		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 _{Amax} = 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 P _{vid}		0.25 W
Heat dissipation capacity P _{diss}		0 W
Heat dissipation per pole, current-dependent P _{vid}		0 W
Rated operational current for specified heat dissipation (I _n)		0 A
Static heat dissipation, non-current-dependent P _{vs}		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