DATASHEET - XN-322-16DIO-PD05

Digital I/O module, 8 digital inputs and 8 digital outputs 24 V DC each, pulse-switching

Part no.	XN-322-16DIO-PD05
	183179

General specifications

Product name			Eaton XN-322 I/O module
Part no.			XN-322-16DIO-PD05
EAN			4015081781126
Product Length/Depth			104.2 millimetre
Product height			16.8 millimetre
Product width			80.3 millimetre
Product weight			0.061 kilogram
Certifications			CULus UL File No.: E135462 IEC/EN 61131-2 IEC/EN 61000-6-4 IEC/EN 61000-6-2 CE
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.

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			8
Overvoltage category			III
Pollution degree			3
Product category			XN-322 digital input and output module
Type			Digital I/O module with eight 24 V DC / 3.7 mA (EN61131-2 type 1) inputs with a 0.5 ms input filter. Eight 24 V DC / 0.5 A short-circuit proof outputs and undervoltage diagnostics for the power supply rails. 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		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		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		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 mm², with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 0.25 - 1.5 mm², with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 0.2 - 1.5 mm², solid, H07V-U 24 - 16 AWG 0.2 - 1.5 mm², flexible without ferrule, H07V-K
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 +1) 160 V (terminations)
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		< 150 µs, Digital outputs, Delay on signal change and resistive load, from High to Low signal < 150 µs, Digital outputs, Delay on signal change and resistive load, from Low to High signal
Input		Digital inputs (according to EN61131-2 Type 1)
Input current		3.7 mA (Digital inputs) ≤ 1.1 mA (Digital inputs, low level) ≥ 2.3 mA (Digital inputs, high level)
Input current at signal 1		3.7 mA
Input delay		5000 µs (rising edge) 5000 µs (falling edge)
Input voltage		24 V DC (Digital inputs) 14 - 30 V (Digital inputs, high level) 0 - 8 V (Digital inputs, low level)
Load current		Not specified by plug manufacturer
Load resistance		> 48 Ω
Number of inputs (digital)		8
Number of outputs (digital)		8
Output		Protective devices must be installed directly at the inductive load in order to prevent interference.
Output current		0.5 A ≤ 500 mA (high level, Digital outputs) < 0.5 mA (low level)
Output voltage		< 1 V DC (Low level, digital outputs)

		24 V DC (digital outputs) < 24 V DC (High level, digital outputs)
Utilization factor	V	100 % (# IAmax = 4A)

Safety

Explosion safety category for dust		None
Explosion safety category for gas	A	None
Potential isolation	V	Between Digital outputs: no Power supply, Input: no Between Digital inputs: 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		2.615 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		8
Number of digital outputs		8
Digital inputs configurable		No
Digital outputs configurable		No
Input current at signal 1	mA	3.7
Permitted voltage at input	V	0 - 30
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	4 - 6
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