

Digital input module; 20 digital inputs 24 V DC each; pulse-switching; 5.0 ms



Part no. XN-322-20DI-PD
Catalog No. 178786
Alternate Catalog No. XN-322-20DI-PD

Delivery program

Function		XN300 I/O slice modules
Connection technique		Push-in spring-cage terminal
Function		XN-322 digital input module for XN300
Short Description		20 digital inputs 24 V DC each, pulse-switching, 5.0 ms
For use with		XN-312-...

Technical data

General

Standards			IEC/EN 61131-2 IEC/EN 61000-6-2 IEC/EN 61000-6-4
Approvals			
Approvals			CE, cULus EAC
shipping classification			DNV GL
Electromagnetic compatibility (EMC)			
ESD	Air/contact discharge	kV	8 / 4
Electromagnetic fields	(0.08...1) / (1,4...2) / (2...2,7) GHz	V/m	10 / 3 / 1
Burst			
Supply cable		kV	2
Signal cable		kV	1
Surge			
Supply cable (balanced / unbalanced)		kV	0,5 / 0,5
Signal cable (unbalanced)		kV	1
Radiated RFI		V	10
Emitted interference (radiated, high frequency)	(30...230 MHz) / (230...1000 MHz)	dB	40 / 47 class A
Voltage fluctuations/voltage dips			Yes / 10 ms
Ambient conditions			
Climatic conditions			
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3
Air pressure (operation)		hPa	795 - 1080
Relative humidity			0 - 95%, non condensing
Condensation			prevent with suitable measures
Temperature			
Operation		°C	0 - +55
Storage, transport	θ	°C	-20 - +85
Degree of Protection			IP20
Mounting position			Horizontal
Free fall, packaged (IEC/EN 60068-2-32)		m	1
Vibrations	3,5 mm / 1 g	Hz	5 - 8.4 / 8.4 -150
Mechanical shock resistance	Semisinusoida Impacts		18 15 g/11 ms

Terminations

Rated operational data			
Insulating material group			I
Overtoltage category / pollution degree			III / 3
Rated operating voltage		V	160
Maximum load current/cross-sectional area		A / mm ²	X (not specified by plug manufacturer)
Connection design in TOP direction			Push-in spring-cage terminal (plug-in connection)
Stripping length		mm	10
Gauge pin IEC/EN 60947-1			A1
Connection specifications			
"e" solid H07V-U		mm ²	0.2 - 1.5
"f" flexible H 07V-K		mm ²	0.2 - 1.5
"f" with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)		mm ²	0.25-1,5
"f" with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)		mm ²	0.25-1,5
Cable size		AWG	24 - 16

Supply

Power supply - Input			
Power supply			
Current consumption for +5 V power supply (internal)	I	mA	(typ.) 35
Current consumption for +24 V power supply	I	mA	(typ.) none
Potential isolation	PE (polyethylene)		no
Heat dissipation			
Heat dissipation (without active channels)		W	0.25
Max. heat dissipation		W	3.045
Notes on heat dissipation			The max. heat dissipation is specified as the maximum power produced inside the device's housing.

Digital inputs

Channels		Number	20
Input voltage			
Nominal input voltage	U _e	V DC	24
Low level	U _{eL}	V	0 < U _{eL} < +8
High level	U _{eH}	V	+14 < U _{eH} < +30
Input current			
Input current, nominal value	I _e	mA	3.7
Low level/active level	I _{eL}	mA	≤1.1
High level/active level	I _{eH}	mA	≥2.3
Input delay			
t _{Rising edge}		μs	< 5000
t _{Falling edge}		μs	< 5000
Potential isolation		Input to input	no
Heat dissipation (per active channel)		W	0.088

Digital inputs

Notes on digital inputs			Inputs as per EN61131-2 Type 1
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Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	0
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	3.045
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	55

Degree of Protection		IP20
IEC/EN 61439 design verification		
10.2 Strength of materials and parts		
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties		
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 8.0

Programmable logic controllers PLC (EG000024) / Fieldbus, decentr. periphery - digital I/O module (EC001599)		
Electric engineering, automation, process control engineering / Control / Field bus, decentralized peripheral / Field bus, decentralized peripheral - digital I/O module (ecl@ss10.0.1-27-24-26-04 [BAA055014])		
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	18 - 30
Voltage type of supply voltage		DC
Number of digital inputs		20
Number of digital outputs		0
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		None
Output current	A	0
Permitted voltage at output	V	0 - 0
Type of output voltage		DC
Short-circuit protection, outputs available		No
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 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 Wi-Fi 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 exchange		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
Width		mm	80.3
Height		mm	16.8
Depth		mm	104.2