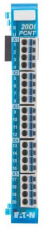
Specifications







Eaton 178767

Eaton XN-322 Digital input module, 20 digital inputs 24 V DC each, pulse-switching, 2/4 CNT, 25 kHz

General specifications	
PRODUCT NAME	Eaton XN-322 Input module
CATALOG NUMBER	178767
MODEL CODE	XN-322-20DI-PCNT
EAN	7640130098312
PRODUCT LENGTH/DEPTH	104.2 mm
PRODUCT HEIGHT	16.8 mm
PRODUCT WIDTH	80.3 mm
PRODUCT WEIGHT	0.054 kg
CERTIFICATIONS	UL File No.: E135462 CE cULus EN 61131-2 EN 61000-6-2 EN 61000-6-4 UL508 CSA-C22.2 No. 142-M

Powering Business Worldwide

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 - MAX	55 °C
AMBIENT STORAGE TEMPERATURE - MAX	85 °C
AMBIENT OPERATING TEMPERATURE - MIN	0 °C
AMBIENT STORAGE TEMPERATURE - MIN	-20 °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)

Communication

CONNECTION TYPE	Push-in spring-cage terminal (plug-in connection), Connection design in TOP direction
PROTOCOL	Other bus systems

Design verification

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.
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)	Meets the product standard's requirements.

RADIATION	
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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0.225 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	3.012 W

Electrical rating

RATED OPERATIONAL VOLTAGE	160 V (terminations)
SUPPLY VOLTAGE AT DC - MAX	30 VDC
SUPPLY VOLTAGE AT DC - MIN	18 VDC

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	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

Features & functions

ELECTRIC CONNECTION TYPE	Plug-in connection
FEATURES	Digital inputs configurable Fieldbus connection over separate bus coupler possible Fieldbus connection over separate bus coupler possible
FUNCTIONS	X1 signal analysis 4X signal analysis
OPERATING MODE	Counter mode Incremental encoder (A, B)

General information

COUNTER FREQUENCY	25 kHz 100 kHz
CURRENT CONSUMPTION	None mA (typ.), for +24 V, Power supply - Input 40 mA (typ.), for +5 V power supply (internal), Power supply - Input
DEGREE OF PROTECTION	IP20
INPUT FREQUENCY	25 kHz
MOUNTING METHOD	Rail mounting possible
NUMBER OF CHANNELS	16
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	XN-322 digital input module
RESOLUTION	• 16 Bit (Functions)

	• 8 Bit (Functions)
TYPE	• Digital I/O module with sixteen 24 V DC / 3.7 mA (EN61131-2 type 1) inputs with a 0.5 ms input filter. An additional four 24 V DC / 3.7 mA (EN61131-2 type 1) inputs with a 0.01 ms input filter can be used as four 8-bit or two 16-bit counters with an input frequency of up to 25 kHz. • XN300 I/O slice module
USED WITH	XN-312-... XN300
VOLTAGE TYPE	DC

Input/Output

INPUT	Digital inputs (according to EN61131-2 Type 1)
INPUT CURRENT	3.7 mA (Digital inputs) ≥ 2.3 mA (Digital inputs, high level) ≤ 1.1 mA (Digital inputs, low level)
INPUT CURRENT AT SIGNAL 1	3.7 mA
INPUT DELAY	10 µ s (falling edge) 500 µ s (falling edge) 500 µ s (rising edge) 10 µ s (rising edge)
INPUT VOLTAGE	0 - 8 V (low level) 0 - 8 V (Digital inputs, low level) 24 V DC (Digital inputs) 14 - 30 V (Digital inputs, high level)
LOAD CURRENT	Not specified by plug manufacturer
NUMBER OF INPUTS (DIGITAL)	20
NUMBER OF OUTPUTS (DIGITAL)	0

Safety

EXPLOSION SAFETY CATEGORY FOR DUST	None
EXPLOSION SAFETY CATEGORY FOR GAS	None
POTENTIAL ISOLATION	Digital inputs, Input delay: no Between Digital inputs: no

Terminal capacities

GAUGE PIN	A1 (according to IEC/EN 60947-1)
INSULATING MATERIAL GROUP	I
STRIPPING LENGTH (MAIN CABLE)	10 mm
TERMINAL CAPACITY	0.2 - 1.5 mm², flexible without ferrule, H07V-K 0.2 - 1.5 mm², solid, H07V-U 0.25 - 1.5 mm², with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) 24 - 16 AWG 0.25 - 0.75 mm², with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)

Resources

BROCHURES	Slice card modular I/O system for the machine building industry XN300 - brochure eaton-xc300-modular-plc-brochure-br050008en-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-input-module-declaration-of-conformity-uk251198en.pdf eaton-input-module-declaration-of-conformity-eu250715en.pdf
DRAWINGS	eaton-modular-plc-xn-input-module-dimensions.eps eaton-modular-plc-xn-input-module-3d-drawing-003.eps eaton-xn300-modular-io-system-brochure-br050004en-en-us.pdf eaton-modular-plc-xn-input-module-3d-drawing-006.eps eaton-general-xv-touch-panel-symbol.eps
ECAD MODEL	DA-CE-ETN.XN-322-20DI-PCNT
INSTALLATION INSTRUCTIONS	IL050025ZU IL050017ZU
MANUALS AND USER GUIDES	eaton-xn300-slice-modules-mn050002-en-us.pdf eaton-xn-312-gw-can-canopen-gateway-mn050003-en-us.pdf
MCAD MODEL	eaton-modular-system-digital-mcad-3d-models-xn-322-20di-pcnt.stp eaton-modular-system-digital-mcad-drawings-xn-322-20di-pcnt.dwg
MULTIMEDIA	XC100, XC200, XC300 – Eaton's modular PLC ranges System solutions based on EtherCAT

PRODUCT NOTIFICATIONS	eaton-xn-322-i-o-series-product-cybersecurity-guideline-mz050024-en-us.pdf eaton-xn-322-i-o-series-end-user-license-agreement-mz050026-en-us.pdf

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

Eaton Corporation plc Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

© 2026 Eaton. All Rights Reserved.

Follow us on social media to get the latest product and support information.