DATASHEET - XN-4DI-24VDC-N

Digital input card XI/ON, 24 VDC, 4DI, negative switching

Part no.	**XN-4DI-24VDC-N**
Catalog No.	**140059**
EL-Nummer (Norway)	**4520652**

Powering Business Worldwide™

Delivery program

Function			I/O modules
			Digital input modules
Function			XN Slice module
Short Description			4 Digital inputs, 24 V DC Negative switching
For use with			XN-S4T-SBBS XN-S4S-SBBS XN-S6T-SBBSBB XN-S6S-SBBSBB

Technical data

General

Standards			EN 61000-6-2 EN 61000-6-4 EN 61131-2
Potential isolation			Yes, through optocoupler
Ambient temperature			
Ambient temperature, operation		°C	0 - +55
Storage, transport	ϑ	°C	-25 - +85
Relative humidity			
Relative humidity			5 - 95 % (indoor), Level RH-2, no condensation (for storage at 45°C)
Ambient conditions, mechanical			
Degree of Protection			IP20
Harmful gases		ppm	SO_2: 10 (rel. humidity < 75%, no condensation) H_2S: 1.0 (rel. humidity < 75 %,no condensation)
Vibration resistance, operating conditions			according to IEC/EN 60068-2-6
Mechanical shock resistance		g	according to IEC 60068-2-27
Continuous shock resistance (IEC/EN 60068-2-29)			According to IEC 60068-2-29
Drop and topple			According to IEC 60068-2-31, free fall according to IEC 60068-2-32
Electromagnetic compatibility (EMC)			
ESD	Air/contact discharge	kV	EN 61000-4-2
Electromagnetic fields	(0.08…1) / (1,4…2) / (2…2,7) GHz	V/m	EN 61100-4-2
Burst			EN 61100-4-4
Surge			EN 61100-4-5
Radiated RFI		V	EN 61100-4-6
Emitted interference (radiated, high frequency)	(30...230 MHz) / (230...1000 MHz)	dB	EN 55016-2-3
Voltage fluctuations/voltage dips			EN 61131-2
Type test			to EN 61131-2
Approvals			CE, cULus
Other technical data (sheet catalogue)			Technical Data

Analog input modules

Channels		Number	4
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	40
Rated current consumption from module bus	I_{MB}	mA	≦ 28
Heat dissipation		W	1
Base modules			
without C connection			2-/3-wire XN-S4x-SBBS 4-wire XN-S6x-SBBSBB

Analog output modules

Channels		Number	4
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	40
Rated current consumption from module bus	I_{MB}	mA	≦ 28
Heat dissipation		W	1
Base modules			
without C connection			2-/3-wire XN-S4x-SBBS 4-wire XN-S6x-SBBSBB

Digital outputs

Channels		Number	4
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from the supply terminal (at load current = 0 mA)	I_L	mA	40
Rated current consumption from module bus	I_{MB}	mA	≦ 28

Digital inputs

Channels		Number	4
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	40
Rated current consumption from module bus	I_{MB}	mA	≦ 28
Rated insulation voltage	U_i	V AC	500
Heat dissipation		W	1
Input voltage			
Nominal input voltage	U_e	V DC	24 V DC
Low level	U_eL	V	-30 V - (U_L - 11 V)
High level	U_eH	V	0 - 5 V
Input current			
Low level/active level	I_eL	mA	0 mA - 1.2 mA
High level/active level	I_{eH}	mA	1.3 mA - 6 mA
Input delay			
$t_{Rising\ edge}$		µs	< 200
$t_{Falling\ edge}$		µs	< 200
Base modules			
without C connection			2-/3-wire XN-S4x-SBBS 4-wire XN-S6x-SBBSBB

Relay modules

Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	40
Rated current consumption from module bus	I_{MB}	mA	≦ 28
Base modules			
without C connection			2-/3-wire XN-S4x-SBBS 4-wire XN-S6x-SBBSBB

Power supply module

Rated voltage through supply terminal	U_L		24 V DC

Rated current consumption from supply terminal	I_L	mA	40
Rated current consumption from module bus	I_{MB}	mA	≦ 28

Counter module

Channels		Number	4
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	40
Rated current consumption from module bus	I_{MB}	mA	≦ 28
Heat dissipation		W	1

Digital inputs

Input voltage			
Nominal input voltage	U_e	V DC	24 V DC
Low level	U_eL	V	-30 V - (U_L - 11 V)
High level	U_eH	V	0 - 5 V
Input current			
Low level	I_eL	mA	0 mA - 1.2 mA
High level	I_{eH}	mA	1.3 mA - 6 mA

Interfaces

Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	40
Rated current consumption from module bus	I_{MB}	mA	≦ 28

Notes

The supply terminal (U_L) supplies power for the card's electronics and for the sensors at the inputs. The total current required for each card is the sum of all partial currents.

Part of the XI/ON card's electronics is supplied with module bus voltage (5 V DC), the other part through the supply terminal (U_L).

Max. permissible capacity: 141 nF at 79 V AC/50 Hz; 23 nF at 265 V AC/50 Hz

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	1
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 7.0

PLC's (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])

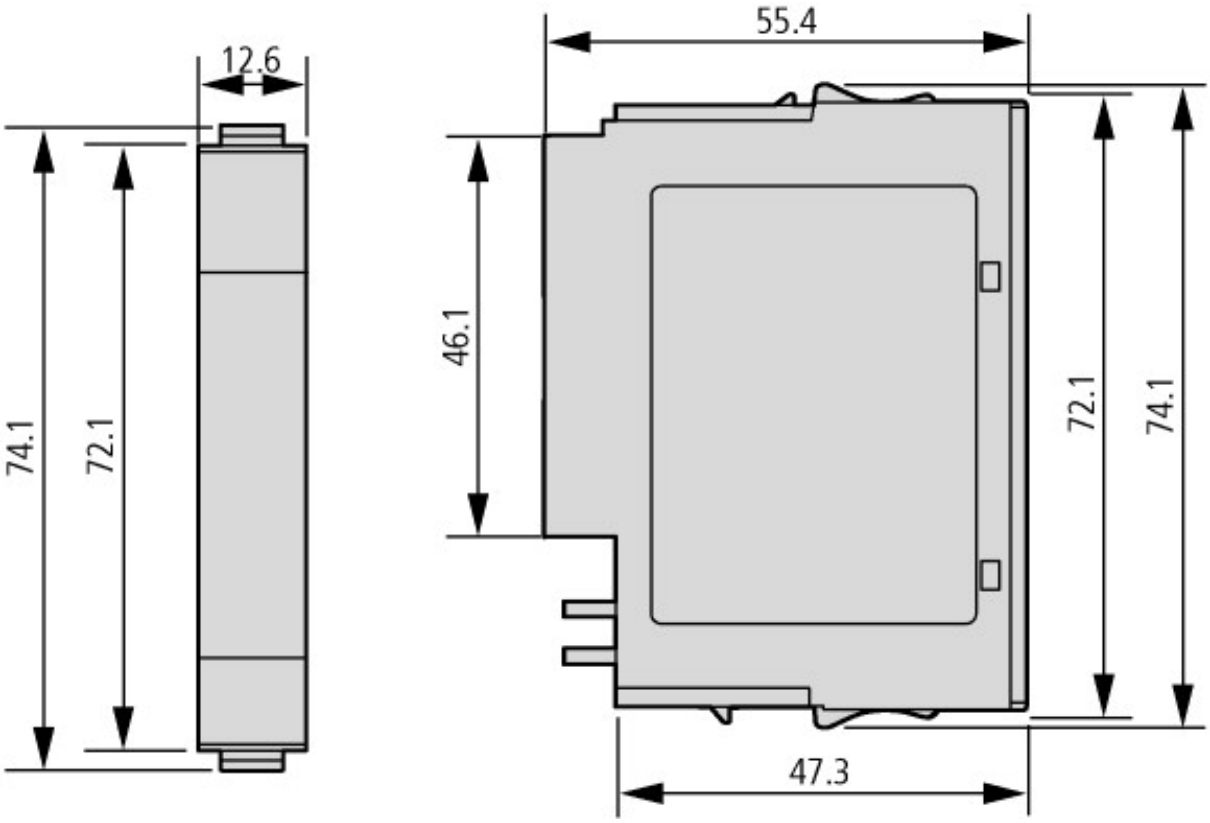
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	18 - 30
Voltage type of supply voltage		DC
Number of digital inputs		4
Number of digital outputs		0
Digital inputs configurable		No
Digital outputs configurable		No
Input current at signal 1	mA	1.3
Permitted voltage at 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		Yes
Supporting protocol for CAN		Yes
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		Yes
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 exchange	ms	0 - 0
Fieldbus connection over separate bus coupler possible		Yes
Rail mounting possible		Yes
Wall mounting/direct mounting		No
Front build in possible		No
Rack-assembly possible		No
Suitable for safety functions		No
Category according to EN 954-1		None
SIL according to IEC 61508		None
Performance level acc. 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	12.6
Height	mm	74.1
Depth	mm	55.4

Approvals

Product Standards		UL 508; CSA-C22.2 No. 142; IEC/EN 6113-2; CE marking
UL File No.		E205091
UL Category Control No.		NRAQ, NRAQ7
CSA File No.		UL report applies to both US and Canada
CSA Class No.		2252-01, 2252-81
North America Certification		UL recognized, certified by UL for use in Canada
Specially designed for North America		No
Current Limiting Circuit-Breaker		No
Degree of Protection		IEC: IP20, UL/CSA Type: -

Dimensions



Dimensions

Additional product information (links)

Technical Data	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=14.111