DATASHEET - XN-1AI-I(0/4...20MA)

Analog input card XI/ON, 24 V DC, 1AI (0/4 to 20mA)

Part no.	**XN-1AI-I(0/4...20MA)**
Catalog No.	**140063**
EL-Nummer (Norway)	**0004520615**

Powering Business Worldwide

Delivery program

Function			XI/ON I/O modules
Function			XN Slice module
Short Description			1 Analog input 0/4 to 20 mA
For use with			XN-S3T-SBB XN-S3S-SBB XN-S4T-SBBS XN-S4S-SBBS

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

Measured variables			Current
Channels		Number	1
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	50
Rated current consumption from module bus	I_{MB}	mA	≦ 41
Heat dissipation		W	< 1
Encoder supply			Linked to L+ and L- of the supply; not short-circuit protected
Input current		mA	0/4 - 20
Maximum input current		mA	50
Input impedance			< 125 Ω
Limit frequency (-3 db)		Hz	200
Offset error		%	0.1
Linearity		%	0.03
Basic error limit at 23 °C		%	0.2
Repetition accuracy (deviation)		%	0.09
Temperature coefficient			300 ppm/°C of full scale
Resolution of the A/D converter			14-bit (signed integer)
Measuring principle			Successive approximation
Measured value representation			16-bit signed integer 12-bit full range left-justified
Diagnostics			Yes
Base modules			
without C connection			2-/3-wire XN-S3x-SBB
without C connection, for sensor feeding			4-wire XN-S4x-SBBS

Analog output modules

Measured variables			Current
Channels		Number	1
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	50
Rated current consumption from module bus	I_{MB}	mA	≦ 41
Heat dissipation		W	< 1
Offset error		%	0.1
Linearity		%	0.03
Basic error limit at 23 °C		%	0.2
Repetition accuracy (deviation)		%	0.09
Temperature coefficient			300 ppm/°C of full scale
Measured value representation			16-bit signed integer 12-bit full range left-justified
Base modules			
without C connection			2-/3-wire XN-S3x-SBB

Digital outputs

Channels		Number	1
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	50
Rated current consumption from module bus	I_{MB}	mA	≦ 41
Diagnostics			Yes

Digital inputs

Channels		Number	1
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	50
Rated current consumption from module bus	I_{MB}	mA	≦ 41
Heat dissipation		W	< 1
Base modules			

without C connection			2-/3-wire XN-S3x-SBB

Relay modules

Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	50
Rated current consumption from module bus	I_{MB}	mA	≦ 41
Base modules			
without C connection			2-/3-wire XN-S3x-SBB

Power supply module

Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	50
Rated current consumption from module bus	I_{MB}	mA	≦ 41

Counter module

Channels		Number	1
Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	50
Rated current consumption from module bus	I_{MB}	mA	≦ 41
Heat dissipation		W	< 1

Measuring modes

Temperature coefficient			300 ppm/°C of full scale
Number of parameter bits			3-bit

Base modules

without C connection, for sensor feeding			4-wire XN-S4x-SBBS

Interfaces

Rated voltage through supply terminal	U_L		24 V DC
Rated current consumption from supply terminal	I_L	mA	50
Rated current consumption from module bus	I_{MB}	mA	≦ 41
Number of parameter bytes			3-bit
Base modules			
without C connection, for sensor feeding			4-wire XN-S4x-SBBS

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 - analogue I/O module (EC001596)

Electric engineering, automation, process control engineering / Control / Field bus, decentralized peripheral / Field bus, decentralized peripheral - analogue I/O module (ecl@ss10.0.1-27-24-26-01 [BAA061014])

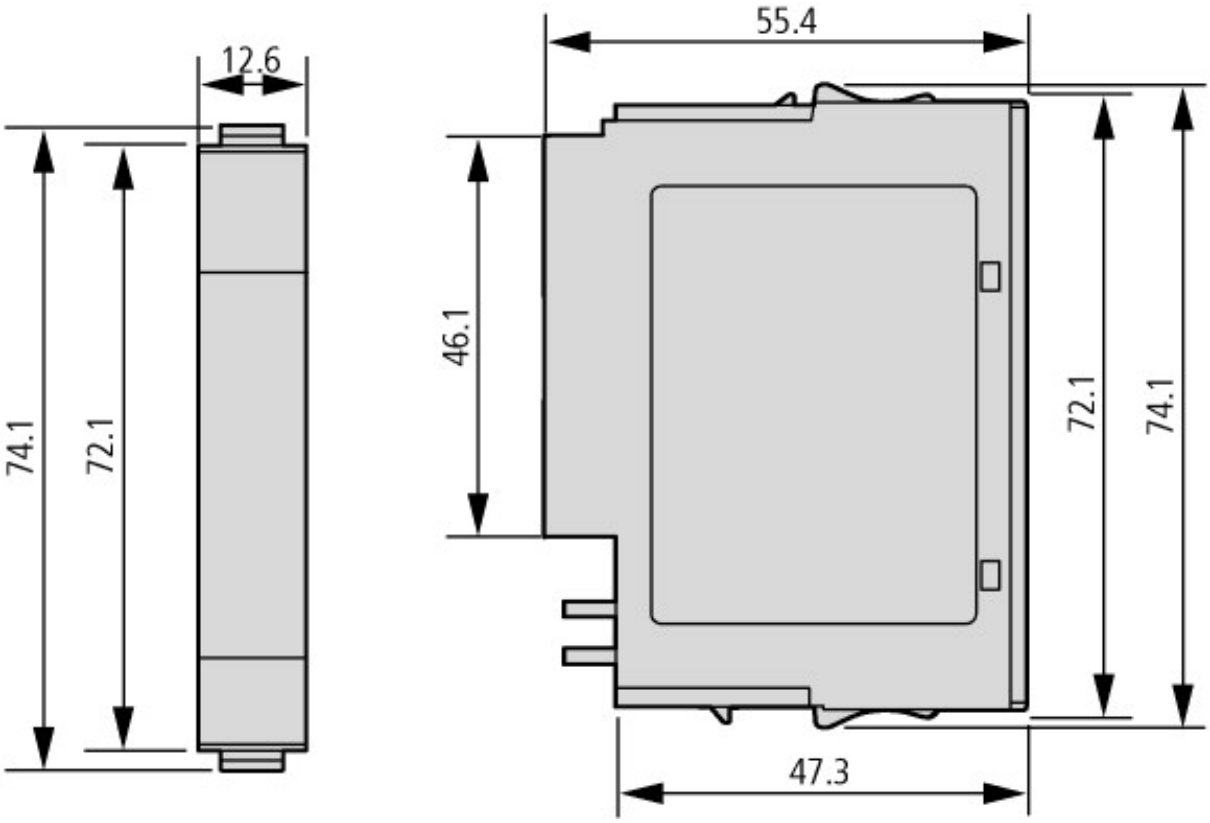
Supply voltage AC 50 Hz		V	0 - 0
Supply voltage AC 60 Hz		V	0 - 0
Supply voltage DC		V	20.4 - 28.8
Voltage type of supply voltage			DC
Input, current			Yes
Input, voltage			No
Input, resistor			No
Input, resistance thermometer			No
Input, thermocouple			No
Input signal, configurable			No
Resolution of the analogue inputs		Bit	16
Output, current			No
Output, voltage			No
Output signal configurable			No
Resolution of the analogue outputs		Bit	0
Number of analogue inputs			1
Number of analogue outputs			0
Analogue inputs configurable			Yes
Analogue outputs configurable			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
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		No
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
Degree of protection (NEMA)		
Type of electric connection		Screw-/spring clamp connection
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		
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
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)

Manual XI/ON analog I/O modules MN05002011Z	
Handbuch XI/ON analoge E/A-Module MN05002011Z - Deutsch	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN05002011Z_DE.pdf
Manual XI/ON analog I/O modules MN05002011Z - English	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN05002011Z_EN.pdf
Technical Data	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=14.111