



Analog input card XI/ON, 24 V DC, 4AI (-10/0 to +10V, 0/4 to 20mA)

Part no. **XN-4AI-U/I**
Article no. **140158**

Delivery program

Function			XI/ON I/O modules
Function			XN Slice module
Short Description			4 Analog inputs -10/0 to +10 V DC 0/4 to 20 mA Switchable as channels
For use with			XN-S6T-SBCSBC XN-S6S-SBCSBC

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	9	°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 ₂ S: 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 61100-4-2
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			Voltage, Current
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Channels		Number	4
Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	I _L	mA	20
Rated current consumption from module bus	I _{MB}	mA	\leq 50
Heat dissipation		W	< 1
Input current		mA	0/4 - 20
Maximum input current		mA	50
Input voltage			-10/0 to +10 V DC
Maximum input voltage		V DC	35 V continuous
Input impedance			< 62 Ω/> 98.5 Ω
Limit frequency (-3 db)		Hz	20
Offset error		%	0.1
Linearity		%	0.05
Basic error limit at 23 °C		%	0.3
Repetition accuracy (deviation)		%	0.05
Temperature coefficient			300 ppm/°C of full scale
Resolution of the A/D converter			16-bit
Measuring principle			Delta Sigma
Measured value representation			16-bit signed integer 12-bit signed integer, flush-left
Diagnostics			Yes
Base modules			
without C connection			2-wire/3-wire XN-S6x-SBCSBC

Analog output modules

Measured variables			Voltage, Current
Channels		Number	4
Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	I _L	mA	20
Rated current consumption from module bus	I _{MB}	mA	\leq 50
Heat dissipation		W	< 1
Offset error		%	0.1
Linearity		%	0.05
Basic error limit at 23 °C		%	0.3
Repetition accuracy (deviation)		%	0.05
Temperature coefficient			300 ppm/°C of full scale
Measured value representation			16-bit signed integer 12-bit signed integer, flush-left
Base modules			
without C connection			2-wire/3-wire XN-S6x-SBCSBC

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	20
Rated current consumption from module bus	I _{MB}	mA	\leq 50
Diagnostics			Yes

Digital inputs

Channels		Number	4
Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	I _L	mA	20
Rated current consumption from module bus	I _{MB}	mA	\leq 50
Heat dissipation		W	< 1
Base modules			
without C connection			2-wire/3-wire XN-S6x-SBCSBC

Relay modules

Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	I _L	mA	20
Rated current consumption from module bus	I _{MB}	mA	\leq 50
Base modules			
without C connection			2-wire/3-wire XN-S6x-SBCSBC

Power supply module

Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	I _L	mA	20
Rated current consumption from module bus	I _{MB}	mA	\leq 50

Counter module

Channels		Number	4
Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	I _L	mA	20
Rated current consumption from module bus	I _{MB}	mA	\leq 50
Heat dissipation		W	< 1

Measuring modes

Temperature coefficient			300 ppm/°C of full scale
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Interfaces

Rated voltage through supply terminal	U _L		24 V DC
Rated current consumption from supply terminal	I _L	mA	20
Rated current consumption from module bus	I _{MB}	mA	\leq 50

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 6.0

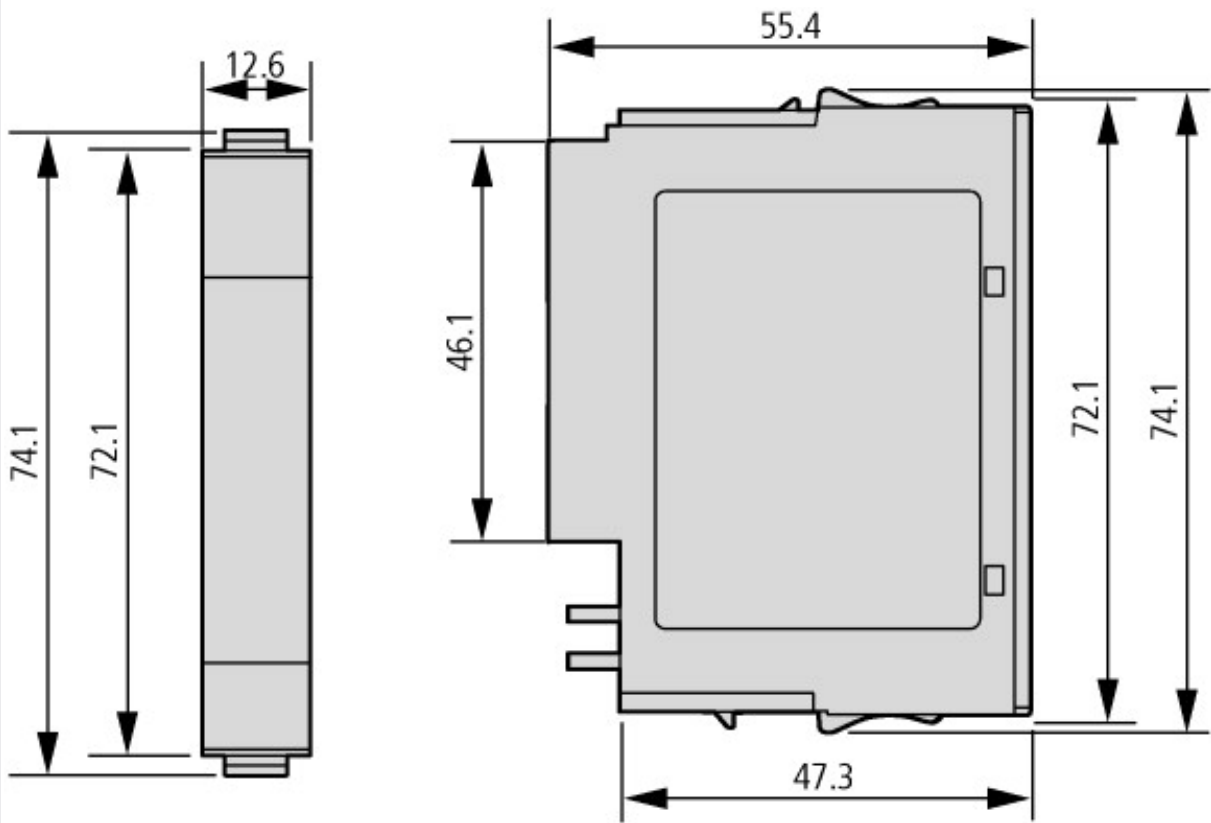
PLC's (EG000024) / Fieldbus, decentr. periphery - analogue I/O module (EC001596)			
Electric engineering, automation, process control engineering / Control / Field bus, decentralized peripheral / Field bus, decentralized peripheral - analogue I/O module (ecl@ss8.1-27-24-26-01 [BAA061011])			
Supply voltage 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			Yes
Input, resistor			No
Input, resistance thermometer			No
Input, thermocouple			No
Input signal, configurable			Yes
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			4
Number of analogue outputs			0
Analog inputs configurable			Yes
Analog outputs configurable			Yes
Number of HW-interfaces industrial Ethernet			0
Number of HW-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 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
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. 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	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)

MN05002011Z Manual XI/ON analog I/O modules	
MN05002011Z Handbuch XI/ON Analoge I/O-Module - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05002011Z_DE.pdf
MN05002011Z Manual XI/ON analog I/O modules - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05002011Z_EN.pdf
Technical Data	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=14.111