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



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

**EL Number** 4520678

(Norway)

General specifications	
Product name	Eaton XN Accessory Input card
Part no.	XN-4AI-U/I
EAN	7640130120280
Product Length/Depth	74.1 millimetre
Product height	55.4 millimetre
Product width	12.6 millimetre
Product weight	0.034 kilogram
Certifications	IEC/EN 61000-6-2 IEC/EN 61000-6-4 CSA Class No.: 2252-01, 2252-81 IEC/EN 6113-2 CSA-C22.2 No. 142 CULus UL Recognized UL File No.: E205091 Certified by UL for use in Canada CE UL report applies to both US and Canada UL 508 UL Category Control No.: NRAQ, NRAQ7 IEC/EN 61131-2
Product Tradename	XN
Product Type	Accessory
Product Sub Type	Input card
Catalog Notes	-10/0 to +10 V DC 0.3 0/4 to 20 mA 300 ppm/°C of full scale Switchable as channels
Features & Functions	
Electric connection type	Screw-/spring clamp connection
Features	Input signal, configurable Input, current Input, voltage Measuring principle: Delta Sigma Analog outputs configurable Fieldbus connection over separate bus coupler possible Analog inputs configurable
Functions	Diagnosis function
General information	
Current consumption	20 mA, from supply terminal 50 mA, from module bus, Analog input modules
Degree of protection	IP20 NEMA 1
Limit frequency	20 Hz (- 3 db)
Mounting method	Rail mounting possible
Number of channels	4
Product category	XN Slice module
Repetition accuracy	0.09 % (deviation)
Resolution	16-bit (Resolution of the A/D converter)
Suitable for	Base modules without C-Connection: 2-wire/3-wire
Туре	XI/ON I/O module
Used with	XN-S6S-SBCSBC XN-S6T-SBCSBC
Voltage type	DC
Ambient conditions, mechanical	
Drop and topple	According to IEC 60068-2-31, free fall according to IEC 60068-2-32

Shock resistance	Continuous according to IEC/EN 60068-2-29 Mechanical, According to IEC/EN 60068-2-27
Vibration resistance	According to IEC/EN 60068-2-6
Climatic environmental conditions	
Ambient operating temperature - min	0 °C
Ambient operating temperature - max	55 °C
Ambient storage temperature - min	-25 °C
Ambient storage temperature - max	85 °C
Environmental conditions	Harmful gasses - SO2: 10 ppm (relative humidity < 75%, no condensation) Harmful gasses - H2S: 1 ppm (relative humidity < 75%, no condensation)
Relative humidity	5 - 95 % (indoor, Level RH-2, non-condensing for storage at 45°C)
Electro magnetic compatibility	
Air discharge	According to EN 61100-4-2
Burst impulse	According to IEC/EN 61000-4-4
Contact discharge	According to EN 61100-4-2
Electromagnetic fields	According to IEC EN 61100-4-2
Emitted interference	230 - 1000 MHz (radiated, high frequency, according to EN 55016-2-3) 30 - 230 MHz (radiated, high frequency, according to EN 55016-2-3)
Radiated RFI	IEC/EN 61100-4-6
Surge rating	According to IEC/EN 61000-4-5 Level 4
Voltage dips	According to EN 61131-2 (Voltage fluctuations/voltage dips)
Electrical rating	
Rated operational voltage	24 V DC (supply terminal)
Supply voltage at AC, 50 Hz - min	0 V AC
Supply voltage at AC, 50 Hz - max	0 V AC
Supply voltage at DC - min	20.4 V DC
Supply voltage at DC - max	28.8 V DC
Communication	
Protocol	Other bus systems
Input/Output	
Input current	0/4 - 20 mA (Analog input) 50 mA (Analog input)
Input impedance	< 62 kΩ
Input voltage	> 98.5 kΩ -10/0 - 10 V DC (Analog input modules)
	Max. 35 V DC (continuous)
Linearity	0.05 %
Measured variables	16-bit signed integer 12-bit signed integer, flush-left
ivieasureu varianies	Current Voltage
Number of inputs (analog)	4
Number of outputs (analog)	0
Timing cycle	0.1 % Offset error
Safety	
Explosion safety category for dust	None
Explosion safety category for gas	None
Potential isolation Potential isolation	Through optocoupler: yes
Design verification	
Equipment heat dissipation, current-dependent Pvid	1 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	1 W
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	moote the product standard a 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) 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.
10.9.2 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 9.0**

Programmable logic controllers PLC (EG000024) / Fieldbus, decentr. periphery - analogue I/O module (EC001596)

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Electric engineering, automation, process control engineering / Control, Process Control System (PCS) / Field bus, decentralized peripheral / Field bus, decentralized peripheral - analogue I/O module (ecl@ss13-27-24-26-01 [BAA061019])

Sipply voltage AC 50 htz         0 <th>module (ecl@ss13-27-24-26-01 [BAA061019])</th> <th></th> <th></th>	module (ecl@ss13-27-24-26-01 [BAA061019])		
Supply voltage DC         V         204-28.8           Voltage type (supply voltage)         V         204-28.8           Power consumption         W         V           Input, certain         W         Yes           Input, voltage         Yes         W           Input, resistance thermometer         Yes         No           Input, seistance thermometer         Yes         No           Input, voltage         Yes         No           Output, voltage         Yes         No           Output, voltage         Yes         No           United on the analogue outputs         Yes         No           Number of HW-interfaces on flugrable         Yes         Yes           Analogue inputs configurable         Yes         Yes           Number of HW-interfaces PR-FINET         Yes         Yes           Number of HW-interfaces SR-422         Yes         Yes	Supply voltage AC 50 Hz	V	0 - 0
Votage type (supply voltage)         V         C           Power consumption         W         V           Input, current         See         Ves           Input, voltage         Ves         Ves           Input, resistor         No         No           Input, resistorable thermometer         Ves         No           Input, thermocouple         Ves         Ves           Input, signal, configurable         Ves         Ves           Resolution of the analogue inputs         Input, vesistand very configurable         No         No           Resolution of the analogue outputs         Ves         No         No           Output, voltage         Ves         No         No           Number of handigue outputs         Ves         Ves         No           Number of analogue outputs         Ves         Ves         No           Number of Hwi-interfaces industrial Ethernet         Ves         Ves           Number of HWi-interfaces industrial Ethernet         Ves         Ves           Number of HWi-interfaces RS-232         Ves         Ves           Number of HW-interfaces RS-242         Ves         Ves           Number of HW-interfaces RS-455         Ves         Ves           Number	Supply voltage AC 60 Hz	V	0 - 0
Power consumption Input, current Input, current Input, voltage Input, resistor Input, resistor Input, resistance thermometer Input, testiance thermometer Input, testiance undernousele Input, current Input, current Input, current Input, current Input, current Input, current Input, testiance undernousele Input, current In	Supply voltage DC	V	20.4 - 28.8
Input, current         # 8         Yes           Input, resistor         # 9         Yes           Input, resistance thermometer         # 9         No           Input, sessistance thermometer         # 9         No           Input, sessistance thermometer         # 9         No           Input, signal, configurable         # 9         Yes           Resolution of the analogue inputs         # 9         No           Output, voltage         # 9         No           Output, signal configurable         # 9         No           Resolution of the analogue outputs         # 9         No           Number of analogue outputs         # 9         No           Number of analogue outputs         # 9         Yes           Number of analogue outputs configurable         # 9         Yes           Number of HW-interfaces industrial Ethernet         # 9         Yes           Number of HW-interfaces industrial Ethernet         # 9         Yes           Number of HW-interfaces RS-22         # 9         Yes           Number of HW-interfaces RS-22         # 9         Yes           Number of HW-interfaces RS-42         # 9         Yes           Number of HW-interfaces RS-48         # 9         Yes	Voltage type (supply voltage)		DC
Input, voltage Input, resistor Input, resistance thermometer Input, thermocouple Input signal, configurable Resolution of the analogue inputs Output, current Output, voltage	Power consumption	W	
Input, resistor                   No           Input, tesistance thermometer                   No           Input, tesistance thermometer                   No           Input, tesistance thermometer                   No           Input, tesistance thermometer                   No           Input, signal, configurable                   16           Resolution of the analogue inputs                   No           Output, current                   No           Output, voltage                   No           Output, voltage                   No           Output, voltage                   No           Number of the analogue outputs                   No           Number of analogue inputs                               Number of analogue outputs   Analogue inputs configurable   Analogue inputs configurable   Number of HW-interfaces RPACPHET   Number of HW-interfaces RP-422  <	Input, current		Yes
Input, resistance thermometer         Ho         No           Input, thermocouple         Yes           Resolution of the analogue inputs         Bit         16           Output, current         Po         No           Output, voltage         No         No           Output, voltage         No         No           Output, voltage         No         No           Number of singliparble         Po         No           Number of analogue outputs         4         Analogue inputs           Number of analogue outputs         4         Yes           Analogue inputs configurable         Yes         Yes           Analogue outputs configurable         Yes         Yes           Number of HW-interfaces industrial Ethernet         Yes         Yes           Number of HW-interfaces RS-232         Yes         Yes           Number of HW-interfaces RS-232         Yes         Yes           Number of HW-interfaces RS-425         Yes         Yes           Number of HW-interfaces RS-425         Yes         Yes           Number of HW-interfaces RS-426         Yes         Yes           Number of HW-interfaces RS-427         Yes         Yes           Number of HW-interfaces serial TTY         Y	Input, voltage		Yes
Input, tiermocouple Input signal, configurable Resolution of the analogue inputs Output, current Output, current Output, voltage Output, voltage Output signal configurable Resolution of the analogue outputs Resolution of the a	Input, resistor		No
Input signal, configurable Resolution of the analogue inputs Output, current Output, voltage Output, voltage Output signal configurable Resolution of the analogue outputs Output signal configurable Resolution of the analogue outputs Resolution of the analogue outputs Resolution of the analogue inputs Number of analogue inputs Number of analogue inputs Analogue inputs Analogue inputs configurable Analogue inputs configurable Number of HW-interfaces industrial Ethernet Number of HW-interfaces RS-422 Number of HW-interfaces RS-425 Number of HW-interfaces RS-425 Number of HW-interfaces RS-426 Number of HW-interfaces serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces wireless Number of HW-interfaces other Number	Input, resistance thermometer		No
Resolution of the analogue inputs Output, current Output, voltage Output signal configurable Resolution of the analogue outputs Number of analogue inputs Number of analogue inputs Analogue inputs configurable Randogue inputs configurable Analogue inputs configurable Resolution of the analogue outputs Resolution of the analogue outputs Resolution of the analogue inputs Resolution of the analogue outputs Resolution of the analogue inputs Resol	Input, thermocouple		No
Output, voltage         No           Output, voltage         No           Output signal configurable         No           Resolution of the analogue outputs         No           Number of analogue inputs         \$           Number of analogue outputs         \$           Analogue inputs configurable         \$           Analogue outputs configurable         \$           Number of HW-interfaces industrial Ethernet         \$           Number of HW-interfaces PROFINET         \$           Number of HW-interfaces RS-232         \$           Number of HW-interfaces RS-425         \$           Number of HW-interfaces RS-485         \$           Number of HW-interfaces serial TTY         \$           Number of HW-interfaces parallel         \$           Number of HW-interfaces wireless         \$           Number of HW-interfaces serial TTY         \$           Number of HW-interfaces wireless	Input signal, configurable		Yes
Output violtage Output signal configurable Resolution of the analogue outputs Number of analogue inputs Number of analogue outputs Number of malogue inputs Analogue inputs configurable Number of HW-interfaces PR-922 Number of HW-interfaces PR-918 Number of HW-interfaces serial TTY Number of HW-interfaces parallel Number of HW-interfaces vireless Number of HW-in	Resolution of the analogue inputs	Bit	16
Output signal configurable     No       Resolution of the analogue outputs     Bit     0       Number of analogue inputs     4       Number of analogue outputs     0       Analogue inputs configurable     Yes       Analogue outputs configurable     Yes       Number of HW-interfaces industrial Ethernet     0       Number of HW-interfaces RS-232     0       Number of HW-interfaces RS-232     0       Number of HW-interfaces RS-425     0       Number of HW-interfaces RS-485     0       Number of HW-interfaces parallel     0       Number of HW-interfaces parallel     0       Number of HW-interfaces wireless     0       Number of HW-interfaces wireless     0       Number of HW-interfaces other     0	Output, current		No
Resolution of the analogue outputs  Number of analogue inputs  Number of analogue outputs  Analogue inputs configurable  Analogue outputs configurable  Number of HW-interfaces RS-232  Number of HW-interfaces RS-425  Number of HW-interfaces RS-485  Number of HW-interfaces serial TTY  Number of HW-interfaces serial TTY  Number of HW-interfaces wireless  Number of HW-interfaces Wireless  Number of HW-interfaces wireless  Number of HW-interfaces USB  Number of HW-interfaces Other  Number of HW-interfaces USB  Number of HW-interfaces Other  Number of HW-interfaces Other  Number of HW-interfaces Other  Number of HW-interfaces Other  Number of HW-interfaces USB  Number of HW-interfaces Other	Output, voltage		No
Number of analogue inputs Number of analogue outputs Analogue outputs configurable Analogue outputs configurable Analogue outputs configurable Number of HW-interfaces industrial Ethernet Number of HW-interfaces RS-232 Number of HW-interfaces RS-232 Number of HW-interfaces RS-232 Number of HW-interfaces RS-422 Number of HW-interfaces RS-422 Number of HW-interfaces RS-485 Number of HW-interfaces RS-485 Number of HW-interfaces serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces wireless Number of HW-interfaces wireless Number of HW-interfaces wireless Number of HW-interfaces wireless Number of HW-interfaces utsel	Output signal configurable		No
Number of analogue outputs0Analogue inputs configurableYesAnalogue outputs configurableYesNumber of HW-interfaces industrial Ethernet0Number of HW-interfaces RS-0230Number of HW-interfaces RS-4220Number of HW-interfaces RS-4250Number of HW-interfaces RS-4850Number of HW-interfaces serial TTY0Number of HW-interfaces parallel0Number of HW-interfaces wireless0Number of HW-interfaces wireless0Number of HW-interfaces uSB0Number of HW-interfaces other0	Resolution of the analogue outputs	Bit	0
Analogue inputs configurable Analogue outputs configurable Number of HW-interfaces industrial Ethernet Number of HW-interfaces PR0FINET Number of HW-interfaces RS-232 Number of HW-interfaces RS-422 Number of HW-interfaces RS-422 Number of HW-interfaces RS-422 Number of HW-interfaces RS-485 Number of HW-interfaces serial TTY Number of HW-interfaces parallel Number of HW-interfaces vireless Number of HW-interfaces wireless Number of HW-interfaces wireless Number of HW-interfaces usb Number of HW-interfa	Number of analogue inputs		4
Analogue outputs configurable Number of HW-interfaces industrial Ethernet  Number of interfaces PROFINET  Number of HW-interfaces RS-232  Number of HW-interfaces RS-422  Number of HW-interfaces RS-422  Number of HW-interfaces RS-485  Number of HW-interfaces serial TTY  Number of HW-interfaces parallel  Number of HW-interfaces wireless  Number of HW-interfaces wireless  Number of HW-interfaces wireless  Number of HW-interfaces other  Number of HW-interfaces other  Number of HW-interfaces other	Number of analogue outputs		0
Number of HW-interfaces industrial Ethernet  Number of interfaces PROFINET  Number of HW-interfaces RS-232  Number of HW-interfaces RS-422  Number of HW-interfaces RS-422  Number of HW-interfaces RS-485  Number of HW-interfaces serial TTY  Number of HW-interfaces parallel  Number of HW-interfaces wireless  Number of HW-interfaces wireless  Number of HW-interfaces other  Number of HW-interfaces USB  Number of HW-interfaces other	Analogue inputs configurable		Yes
Number of interfaces PR0FINET  Number of HW-interfaces RS-232  Number of HW-interfaces RS-422  Number of HW-interfaces RS-485  Number of HW-interfaces serial TTY  Number of HW-interfaces parallel  Number of HW-interfaces wireless  Number of HW-interfaces wireless  Number of HW-interfaces USB  Number of HW-interfaces other  1	Analogue outputs configurable		Yes
Number of HW-interfaces RS-232  Number of HW-interfaces RS-422  Number of HW-interfaces RS-485  Number of HW-interfaces serial TTY  Number of HW-interfaces parallel  Number of HW-interfaces wireless  Number of HW-interfaces wireless  Number of HW-interfaces usb	Number of HW-interfaces industrial Ethernet		0
Number of HW-interfaces RS-422  Number of HW-interfaces RS-485  Number of HW-interfaces serial TTY  Number of HW-interfaces parallel  Number of HW-interfaces wireless  Number of HW-interfaces wireless  Number of HW-interfaces USB  Number of HW-interfaces other  1	Number of interfaces PROFINET		0
Number of HW-interfaces RS-485  Number of HW-interfaces serial TTY  Number of HW-interfaces parallel  Number of HW-interfaces wireless  Number of HW-interfaces USB  Number of HW-interfaces other  Number of HW-interfaces other  Number of HW-interfaces other  Number of HW-interfaces other	Number of HW-interfaces RS-232		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	Number of HW-interfaces RS-422		0
Number of HW-interfaces parallel  Number of HW-interfaces wireless  Number of HW-interfaces USB  Number of HW-interfaces other  1	Number of HW-interfaces RS-485		0
Number of HW-interfaces wireless 0 Number of HW-interfaces USB 0 Number of HW-interfaces other 1	Number of HW-interfaces serial TTY		0
Number of HW-interfaces USB 0 Number of HW-interfaces other 1	Number of HW-interfaces parallel		0
Number of HW-interfaces other 1	Number of HW-interfaces wireless		0
	Number of HW-interfaces USB		0
Supporting protocol for EtherCAT No	Number of HW-interfaces other		1
	Supporting protocol for EtherCAT		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 Supporting protocol for INTERRIS-Safety	No No
Supporting protocol for INTERBUS-Safety	No No
Supporting protocol for PROFIsafe	No No
Supporting protocol for SafetyBUS p	No Ver
Supporting protocol for other bus systems	Yes
Radio standard Bluetooth	No No
Radio standard WLAN 802.11	No
Radio standard GPRS	No No
Radio standard GSM	No No
Radio standard UMTS	No
10 link master	No
System accessory	Yes
Degree of protection (IP)	IP20
Degree of protection (NEMA)	1
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 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
Certified for UL hazardous location class I	No
Certified for UL hazardous location class II	No
Certified for UL hazardous location class III	No
Certified for UL hazardous location division 1	No
Certified for UL hazardous location division 2	No
Certified for UL hazardous location group A (acetylene)	No
Certified for UL hazardous location group B (hydrogen)	No
Certified for UL hazardous location group C (ethylene)	No
Certified for UL hazardous location group D (propane)	No
Certified for UL hazardous location group E (metal dusts)	No
Certified for UL hazardous location group F (carbonaceous dusts)	No

Certified for UL hazardous location group G (non-conductive dusts)		No
Width	mm	12.6
Height	mm	55.4
Depth	mm	74.1