Counter module XI/ON ECO, 24 V DC, 2 channels

Part no. XNE-2CNT-2PWM
Article no. 140038

Powering Business Worldwide

Delivery program

Function			XI/ON technology modules
Function			XN Slice module
Short Description			2 counter channels and 2 PWM channels Counting modes: infinite, once only or periodic count Frequency, rotational speed or period count Acquisition of signals from rotary encoders (track A/B) Output of a defined digital signal Output of a defined number of pulses

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 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

Terminations

Rated data			according to VDE 0611 Part 1/8.92 / IEC/EN 60947-7-1
Connection design in TOP direction			Push-In spring-cage terminals
Stripping length		mm	8
Clamping range			max. 0.14 - 1.5 mm^2
Connectable conductors			
"e" solid H07V-U		mm^2	0.25 - 1.5
"f" flexible H 07V-K		mm^2	0.25 - 1.5
"f" with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)		mm^2	0.25 - 1.5
"f" with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)		mm^2	0.25 - 0.75
Connectable conductors			
"e" solid H07V-U		mm^2	0.25 - 1.5
"f" flexible H 07V-K		mm^2	0.25 - 1.5
"f" with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)		mm^2	0.25 - 1.5
"f" with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)		mm^2	0.25 - 0.75
Gauge pin IEC/EN 60947-1			A1

Analog input modules

Channels		Number	2
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	50
Heat dissipation		W	2
Diagnostics			4 bytes
Base modules			
without C connection, for sensor feeding			Already built in

Analog output modules

Channels		Number	2
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	50
Heat dissipation		W	2

Digital outputs

Channels		Number	2
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	50
Output current		A	
High level (rated value)	I_H		0.5 A (55° C)
High level (permissible range)	I_H	A	5 mA - 0.6 A
Number of diagnostic bytes			4 bytes
"e" solid H07V-U			Yes

Digital inputs

Channels		Number	2
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	50
Heat dissipation		W	2

Input voltage			
Nominal input voltage	U_e	V DC	24
Low level	$U_e L$	V	-30 V DC - 5 V DC
High level	$U_e H$	V	11 V DC to 30 V DC
Input current			
Low level/active level	$I_e L$	mA	-1 mA - 1.5 mA
High level/active level	I_{eH}	mA	2 mA to 10 mA

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	⎓ 50

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	⎓ 50
Diagnostics			4 bytes

Counter module

Channels		Number	2
Resolution		Bit	32
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	⎓ 50
Heat dissipation		W	2
Transducer power supply			Output voltage U_L, GND_L Output current ⎓ 0.5 A, not protected
PWM (parameters can be defined)			0.01 Hz - 20 kHz
Period duration/Duty Cycle			32 Bit at 41.6/Bit
Pulse duration			32 Bit at 41.6/Bit
Pause time			32 Bit at 41.6/Bit
Output Number of pulses			32 Bit
Operating modes Pulse output			Once, endless

Digital inputs

Input voltage			
Nominal input voltage	U_e	V DC	24
Low level	$U_e L$	V	-30 V DC - 5 V DC
High level	$U_e H$	V	11 V DC to 30 V DC
Input current			
Low level	$I_e L$	mA	-1 mA - 1.5 mA
High level	I_{eH}	mA	2 mA to 10 mA
Minimum pulse width		µs	Filter on: > 25 ms (20 kHz) Filter off: < 2.5 ms (200 kHz)

Digital outputs

Output voltage			
Output voltage, nominal value		V DC	24
Low level	U_L		3 V DC
High level			⎓ U_L (- 1 V)
Output current		A	
High level (permissible range)	I_H	A	5 mA - 0.6 A
High level (rated value)	I_H		0.5 A (55° C)
Switching frequency			
with resistive load		Hz	100
Output delay			25 µs (resistive load)
Short-circuit rating			Yes

Measurement ranges

Frequency			0.1 Hz – 200 kHz (scaleable)
Speed			Scaleable
Duration of period			5 ms – 120 s (scaleable)

Counting modes

Signal evaluation A, B			Pulse and direction; single/double/quadruple rotary transducer
Control mode			infinite counter, once only count, periodic count
Hysteresis		mm	32 Bit
Pulse duration			32 Bit/max. 120 s
Synchronization			once only/periodic
Counter limits			Upper count limit: 0 - 7FFF FFFF Lower count limit: 8000 0000 - FFFF FFFF

Measuring modes

Signal evaluation A, B			Measuring modes: pulse and direction; single rotary transducer
Diagnostics			4 bytes
parameters			16 bytes

Base modules

without C connection, for sensor feeding			Already built in

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	50
Number of diagnostic bytes			4 bytes
Number of parameter bytes			16 bytes
Base modules			
without C connection, for sensor feeding			Already built in
Note for table header			The rated current from supply terminal data apply at zero load current.

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	2
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 - function-/technology module (EC001601)

Electric engineering, automation, process control engineering / Control / Field bus, decentralized peripheral / Field bus, decentralized periphery - function-/technology module (ecl@ss8.1-27-24-26-05 [BAA066011])

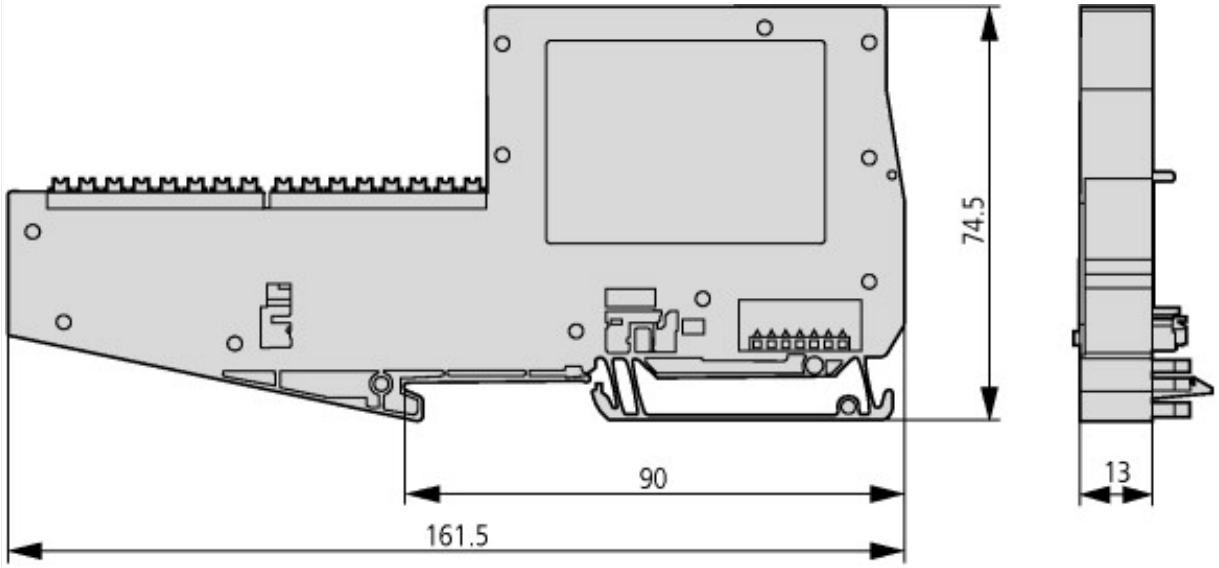
Supply voltage AC 50 Hz		V	0 - 0
Supply voltage AC 60 Hz		V	0 - 0
Supply voltage DC		V	11 - 30
Voltage type of supply voltage			DC
Number of functions			0
Number of HW-interfaces industrial Ethernet			0
Number of HW-interfaces PROFINET			0
Number of HW-interfaces RS-232			0
Number of HW-interfaces RS-422			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
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			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
Suitable for counting		Yes
Suitable for weighting		No
Suitable for temperature control		No
Suitable for welding control		No
Suitable for pressure control		No
Suitable for NC		No
Function electronic positioning available		Yes
Suitable for CNC		No
Suitable for SSI		No
Suitable for incremental data detection		Yes
Suitable for detection absolute value		Yes
Flux controller possible		No
Suitable for flux measurement		No
Suitable for path controller		No
Suitable for cam controller		No
Suitable for flying saw		No
Suitable for multi-axis control		No
Single-axis controller possible		Yes
Suitable for multi-axis positioning		No
Single-axis positioning possible		Yes
Function block restart blockage		No
Function block automatic reset		No
Contactor control function block		No
Function block emergency stop		No
Function block contactless working protection installation		No
Function block affirm pushbutton		No
Function block 2-hand switching		No
Function block operating mode selection		Yes
Function block acces control		No
Degree of protection (IP)		IP20
Fieldbus connection over separate bus coupler possible		Yes
Frequency measurement		Yes
Rail mounting possible		No
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	13
Height	mm	161.5
Depth	mm	74.5

Approvals

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)

MN05002035Z User manual XI/ON XNE-2CNT-2PWM technology module	
MN05002035Z Benutzerhandbuch XI/ON XNE-2CNT-2PWM Technologiemodul - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05002035Z_DE.pdf
MN05002035Z User manual XI/ON XNE-2CNT-2PWM technology module - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05002035Z_EN.pdf
Technical Data	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=14.111