XNE-8DI-24VDC-P - Digital input card XI/ON ECO, 24 V DC, 8DI

140035
XNE-8DI-24VDC-P

Overview
Specifications
Resources

DELIVERY PROGRAM

Function
I/O modules

Digital input modules

Function
XNE Slice module

Short Description
8 Digital inputs, 24 V DC
Positive switching

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
0 - +55 °C

Ambient temperature
Storage, transport [ϑ]
-25 - +85 °C

Relative humidity
Relative humidity
5 - 95 % (indoor), Level RH-2, no condensation
(for storage at 45°C)

Ambient conditions, mechanical
Degree of Protection
IP20

Ambient conditions, mechanical
Harmful gases
SO_2: 10 (rel. humidity < 75%, no condensation)
H_2S: 1.0 (rel. humidity < 75 %,no condensation)
ppm

Vibration resistance, operating conditions
according to IEC/EN 60068-2-6

Mechanical shock resistance
according to IEC 60068-2-27 g

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]
EN 61000-4-2 kV

Electromagnetic compatibility (EMC)

Electromagnetic fields [(0.08…1) / (1,4…2) / (2…
2,7) GHz]
EN 61100-4-2 V/m

Electromagnetic compatibility (EMC)
Burst
EN 61100-4-4

Electromagnetic compatibility (EMC)
Surge
EN 61100-4-5

Electromagnetic compatibility (EMC)
Radiated RFI
EN 61100-4-6 V

Electromagnetic compatibility (EMC)
Emitted interference (radiated, high frequency)
[(30...230 MHz) / (230...1000 MHz)]
EN 55016-2-3 dB

Electromagnetic compatibility (EMC)
Voltage fluctuations/voltage dips
EN 61131-2

Electromagnetic compatibility (EMC)
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
8 mm

Clamping range
max. 0.14 - 1.5 mm²

Connectable conductors
"e" solid H07V-U
0.25 - 1.5 mm²

Connectable conductors
"f" flexible H07V-K
0.25 - 1.5 mm²

Connectable conductors
"f" with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)
0.25 - 1.5 mm²

Connectable conductors
"f" with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)
0.25 - 0.75 mm²

Connectable conductors
"e" solid H07V-U
0.25 - 1.5 mm²

Connectable conductors
"f" flexible H07V-K
0.25 - 1.5 mm²

Connectable conductors
"f" with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)
0.25 - 1.5 mm²

Connectable conductors
"f" with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)
0.25 - 0.75 mm²

Gauge pin IEC/EN 60947-1
A1

Analog input modules

Channels
8 Number

Rated voltage through supply terminal [U_L]
24 V DC

Rated current consumption from supply terminal [I_L]
1.5 mA

Rated current consumption from module bus [I_{MB}]
□ 15 mA

Heat dissipation
< 1.5 W

Base modules
without C connection
Already built in

Analog output modules

Channels
8 Number

Rated voltage through supply terminal [U_L]
24 V DC

Rated current consumption from supply terminal [I_L]
1.5 mA

Rated current consumption from module bus [I_{MB}]
□ 15 mA

Heat dissipation
< 1.5 W

Base modules
without C connection
Already built in

Digital outputs

Channels
8 Number

Rated voltage through supply terminal [U_L]
24 V DC

Rated current consumption from the supply terminal (at load current = 0 mA) [I_L]
1.5 mA

Rated current consumption from module bus [I_{MB}]
□ 15 mA

Digital inputs

Channels
8 Number

Rated voltage through supply terminal [U_L]
24 V DC

Rated current consumption from supply terminal [I_L]
1.5 mA

Rated current consumption from module bus [I_{MB}]
□ 15 mA

Rated insulation voltage [U_i]
500 V AC

Heat dissipation
< 1.5 W

Input voltage
Nominal input voltage [U_e]
24 V DC V DC

Input voltage
Low level [U_eL]
-U_L - +5 V V

Input voltage
High level [U_eH]
11 - 30 V V

Input current

Low level/active level [I_{eL}]
-1 mA - 1.5 mA mA

Input current
High level/active level [I_{eH}]
2 mA - 5 mA mA

Input delay
$t_{Rising\ edge}$
< 100 µs

Input delay
$t_{Falling\ edge}$
< 200 µs

Base modules
without C connection
Already built in

Relay modules

Rated voltage through supply terminal [U_L]
24 V DC

Rated current consumption from supply terminal [I_L]
1.5 mA

Rated current consumption from module bus [I_{MB}]
□ 15 mA

Base modules
without C connection
Already built in

Power supply module

Rated voltage through supply terminal [U_L]
24 V DC

Rated current consumption from supply terminal [I_L]
1.5 mA

Rated current consumption from module bus [I_{MB}]
□ 15 mA

Counter module

Channels
8 Number

Rated voltage through supply terminal [U_L]
24 V DC

Rated current consumption from supply terminal [I_L]
1.5 mA

Rated current consumption from module bus [I_{MB}]
□ 15 mA

Heat dissipation
< 1.5 W

Digital inputs

Input voltage
Nominal input voltage [U_e]
24 V DC V DC

Input voltage
Low level [U_eL]
-U_L - +5 V V

Input voltage
High level [U_eH]
11 - 30 V V

Input current
Low level [I_eL]
-1 mA - 1.5 mA mA

Input current
High level [I_{eH}]
2 mA - 5 mA mA

Interfaces

Rated voltage through supply terminal [U_L]

24 V DC

Rated current consumption from supply terminal [I_L]
1.5 mA

Rated current consumption from module bus [I_{MB}]
□ 15 mA

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]
0 A

Heat dissipation per pole, current-dependent [P_{vid}]
0 W

Equipment heat dissipation, current-dependent [P_{vid}]
0 W

Static heat dissipation, non-current-dependent [P_{vs}]
1.5 W

Heat dissipation capacity [P_{diss}]
0 W

Operating ambient temperature min.

0 °C

Operating ambient temperature max.
+55 °C

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 Strength of materials and parts
10.2.3.1 Verification of thermal stability of enclosures
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.2 Verification of resistance of insulating materials to normal heat
Meets the product standard's requirements.

10.2 Strength of materials and parts
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 Strength of materials and parts
10.2.4 Resistance to ultra-violet (UV) radiation
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.5 Lifting
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
10.2.6 Mechanical impact
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
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 Insulation properties
10.9.3 Impulse withstand voltage
Is the panel builder's responsibility.

10.9 Insulation properties
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
0 - 0 V

Supply voltage AC 60 Hz
0 - 0 V

Supply voltage DC
18 - 30 V

Voltage type of supply voltage
DC

Number of digital inputs
8

Number of digital outputs
0

Digital inputs configurable
No

Digital outputs configurable
No

Input current at signal 1
2 mA

Permitted voltage at input
30 - 30 V

Type of voltage (input voltage)
DC

Type of digital output
None

Output current
0 A

Permitted voltage at output
0 - 0 V

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
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
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
Screw-/spring clamp connection

Time delay at signal exchange
0 - 0 ms

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
13 mm

Height
129.5 mm

Depth
74.5 mm

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

Link to sheet catalogue
Dimensions