# DATASHEET - XN-4DO-24VDC-0.5A-P

**Digital output module XI/ON, 24 V DC, 4DO, 0.5A, pulse-switching**

| | |
|---|---|
| **Part no.** | **XN-4DO-24VDC-0.5A-P** |
| | **140148** |
| **EL Number (Norway)** | **4520640** |

## General specifications

| | |
|---|---|
| Product name | Eaton XN Output module |
| Part no. | XN-4DO-24VDC-0.5A-P |
| EAN | 7640130120310 |
| Product Length/Depth | 74.1 millimetre |
| Product height | 55.4 millimetre |
| Product width | 12.6 millimetre |
| Product weight | 0.028 kilogram |
| Certifications | IEC/EN 6113-2<br>UL Category Control No.: NRAQ, NRAQ7<br>CE<br>IEC/EN 61131-2<br>CSA-C22.2 No. 142<br>UL report applies to both US and Canada<br>UL 508<br>IEC/EN 61000-6-4<br>UL Recognized<br>UL File No.: E205091<br>CULus<br>CSA Class No.: 2252-01, 2252-81<br>IEC/EN 61000-6-2<br>Certified by UL for use in Canada |
| Product Tradename | XN |
| Product Type | Output module |
| Product Sub Type | None |

## Features & Functions

| | |
|---|---|
| Electric connection type | Screw-/spring clamp connection |
| Features | Fieldbus connection over separate bus coupler possible |
| Fitted with: | Connectable sensors for inductive loads<br>Connectable sensors for lamp loads<br>Connectable sensors for resistive loads |
| Functions | Short-circuit protection, outputs available<br>Positive switching<br>Diagnosis function |

## General information

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|---|---|
| Current consumption | 25 mA, from supply terminal<br>30 mA, from module bus, Analog input modules |
| Degree of protection | IP20 |
| Mounting method | Rail mounting possible |
| Number of channels | 4 |
| Operating frequency | < 2 at inductive load |
| Product category | XN Slice module |
| Suitable for | Base modules with C-connection: 4-wire<br>Base modules with C-connection: 4 x 2-/3-wire |
| Switching frequency | 2 Hz<br>1000 Hz, with resistive load RLO < 1 kΩ, Digital outputs<br>10 Hz, with lamp load, Digital outputs |
| Type | XI/ON I/O module |
| Used with | XN-S4T-SBCS<br>XN-S6T-SBCSBC<br>XN-S4S-SBCS<br>XN-S6S-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 | Mechanical, According to IEC/EN 60068-2-27<br>Continuous according to IEC/EN 60068-2-29 |
| Vibration resistance | According to IEC/EN 60068-2-6 |

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|---|---|
| **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)<br>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)<br>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** | |
| Power loss | 1 W |
| Rated operational voltage | 24 V DC (supply terminal) |
| Short-circuit protection | Short-circuit proof, Short-circuit rating, Digital outputs |
| Short-circuit release | Automatic, Ii, Reset after short-circuit rectified, Digital outputs |
| 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 | 18 V DC |
| Supply voltage at DC - max | 30 V DC |
| **Communication** | |
| Interfaces | Terminating resistor: > 48 Ω |
| Number of bytes | 1 diagnostic bytes |
| Protocol | Other bus systems |
| **Input/Output** | |
| Delay time | 250 µs, Digital outputs, Delay on signal change and resistive load, from High to Low signal<br>250 µs, Digital outputs, Delay on signal change and resistive load, from Low to High signal |
| Input current at signal 1 | 0 mA |
| Input voltage | Min. L+ 1 V (Digital inputs, high level) |
| Lamp load | ≤ 6 W (at RLL) |
| Load resistance | 1.2 h (inductive load)<br>≥ 48 Ω |
| Number of inputs (digital) | 0 |
| Number of outputs (digital) | 4 |
| Output | 4 Digital Outputs (24 V DC, 0.5 A)<br>Parallel connection of max. 4 Transistor outputs |
| Output current | 0.5 A<br>< 0.6 A (high level, permissible range)<br>2 A, Module total current, Digital outputs |
| Output voltage | 23 V DC (Digital outputs) |
| Utilization factor | 100 % |
| **Safety** | |
| Explosion safety category for dust | None |
| Explosion safety category for gas | None |
| Potential isolation | Through optocoupler: yes |
| **Design verification** | |
| Equipment heat dissipation, current-dependent Pvid | 0 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 | | Meets the product standard's 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 - digital I/O module (EC001599)

Electric engineering, automation, process control engineering / Control, Process Control System (PCS) / Field bus, decentralized peripheral / Field bus, decentralized peripheral - digital I/O module (ecl@ss13-27-24-26-04 [BAA055019])

| | | |
|---|---|---|
| Supply voltage AC 50 Hz | V | 0 - 0 |
| Supply voltage AC 60 Hz | V | 0 - 0 |
| Supply voltage DC | V | 18 - 30 |
| Voltage type (supply voltage) | | DC |
| Number of digital inputs | | 0 |
| Number of digital outputs | | 4 |
| Digital inputs configurable | | No |
| Digital outputs configurable | | No |
| Input current at signal 1 | mA | 0 |
| Permitted voltage at input | V | 0 - 0 |
| Type of voltage (input voltage) | | DC |
| Type of digital output | | Transistor |
| Output current | A | 0.5 |
| Permitted voltage at output | V | 0 - 30 |
| Type of output voltage | | DC |
| Short-circuit protection, outputs available | | 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 |

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|---|---|---|---|
| With optical interface | | | No |
| 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 | | | 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 change | | ms | 0.1 - 0.25 |
| 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 |


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