




Digital I/O module, 8 digital inputs and 8 digital outputs 24 V DC each, pulse-switching

Part no. XN-322-16DIO-PD05
Article no. 183179
Catalog No. XN-322-16DIO-PD05

Delivery programme

| | | |
|----------------------|--|---|
| Photo | |  |
| Function | | XN300 I/O slice modules |
| Connection technique | | Push-in spring-cage terminal |
| Function | | XN-322 digital input and output module for XN300 |
| Short Description | | 8 digital inputs and 8 digital outputs 24 V DC each, pulse-switching |
| Description | | Digital I/O module with eight 24 VDC / 3.7 mA (EN61131-2 type 1) inputs with a 0.5 ms input filter. Eight 24 VDC / 0.5 A short-circuit proof outputs and undervoltage diagnostics for the power supply rails. |
| For use with | | XN-312-... |

Technical data

General

| | | | |
|---|--|-----|--|
| Standards | | | IEC/EN 61131-2 IEC/EN 61000-6-2 IEC/EN 61000-6-4 |
| Electromagnetic compatibility (EMC) | | | |
| ESD | Air/contact discharge | kV | 8 / 4 |
| Electromagnetic fields | (0.08...1) / (1,4...2) / (2...2,7) GHz | V/m | 10 / 3 / 1 |
| Burst | | | |
| Supply cable | | kV | 2 |
| Signal cable | | kV | 1 |
| Surge | | | |
| Supply cable (balanced/unbalanced) | | kV | 0,5 / 0,5 |
| Signal cable (unbalanced) | | kV | 1 |
| Radiated RFI | | V | 10 |
| Emitted interference (radiated, high frequency) | (30...230 MHz) / (230...1000 MHz) | dB | 40 / 47 class A |
| Voltage fluctuations/voltage dips | | | Yes / 10 ms |
| Umgebungsbedingungen | | | |
| Klima | | | |
| Climatic proofing | | | Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3 |
| Air pressure (operation) | | hPa | 795 - 1080 |
| Relative humidity | | | 0 - 95%, non condensing |
| Condensation | | | prevent with suitable measures |

| | | | |
|---|--------------------------------------|----|--------------------|
| Temperature | | | |
| Betrieb | | °C | 0 - +60 |
| Storage, transport | θ | °C | -20 - +85 |
| Degree of Protection | | | IP20 |
| Mounting position | | | Horizontal |
| Free fall, packaged (IEC/EN 60068-2-32) | | m | 1 |
| Vibrations | 3,5 mm / 1 g | Hz | 5 - 8.4 / 8.4 -150 |
| Mechanical shock resistance | Semisinusoidal Impacts 15 g/11 ms | | 18 |

Terminations

| | | | |
|--|--|---------------------|---|
| Rated operational data | | | |
| Insulating material group | | | I |
| Overvoltage category / pollution degree | | | III / 3 |
| Rated operating voltage | | V | 160 |
| Maximum load current/cross-sectional area | | A / mm ² | X (not specified by plug manufacturer) |
| Connection design in TOP direction | | | Push-in spring-cage terminal (plug-in connection) |
| Stripping length | | mm | 10 |
| Gauge pin IEC/EN 60947-1 | | | A1 |
| Anschlussvermögen | | | |
| "e" solid H07V-U | | mm ² | 0.2 - 1.5 |
| "f" flexible H 07V-K | | mm ² | 0.2 - 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 | 0.25-1,5 |
| Cable size | | AWG | 24 - 16 |

Supply

| | | | |
|--|----------------------|----|---|
| Power supply - Input | | | |
| Power supply | | | |
| Current consumption for +5 V power supply (internal) | I | mA | (typ.) 45 |
| Current consumption for +24 V power supply | I | mA | (typ.) none |
| Potential isolation | PE (polyethylene) | | no |
| Rated operating voltage | U _e | V | 24 (terminal +1) |
| Rated operational current | I _e | A | 4 |
| Potential isolation | | | no |
| Heat dissipation | | | |
| Heat dissipation (without active channels) | | W | 0.25 |
| Max. heat dissipation | | W | 2.615 |
| Notes on heat dissipation | | | The max. heat dissipation is specified as the maximum power produced inside the device's housing. |

Digital inputs

| | | | |
|---------------------------------------|-----------------|----------------|-----------------------------|
| Channels | | Number | 8 |
| Input voltage | | | |
| Nominal input voltage | U _e | V DC | 24 |
| Low level | U _{eL} | V | 0 < U _{eL} < +8 |
| High level | U _{eH} | V | +14 < U _{eH} < +30 |
| Input current | | | |
| Input current, nominal value | I _e | mA | 3.7 |
| Low level/active level | I _{eL} | mA | ≤1.1 |
| High level/active level | I _{eH} | mA | ≥2.3 |
| Input delay | | | |
| t _{Rising edge} | | μs | < 5000 |
| t _{Falling edge} | | μs | < 5000 |
| Potential isolation | | Input to input | no |
| Heat dissipation (per active channel) | | W | 0.088 |

Digital inputs

| | | | |
|-------------------------|--|--|--------------------------------|
| Notes on digital inputs | | | Inputs as per EN61131-2 Type 1 |
|-------------------------|--|--|--------------------------------|

Digital outputs

| | | | |
|---|----------|----------|---|
| Channels | | Quantity | 8 |
| Output voltage | | | |
| Output voltage, nominal value | U_a | V DC | 24 |
| Low level | U_{aL} | V | $0V < U_{aL} < 1V$ |
| High level | U_{aH} | V | $U_e - 1V < U_{aH} < U_e$ |
| Output current | | A | |
| Output current, nominal value | I_{aL} | A | 0.5 |
| Low signal | I_A | mA | $0 < I_{aL} < 0.5$ |
| High level | I_{aH} | mA | $0 \leq I_{aH} \leq 500$ |
| Short-circuit rating | | | Yes |
| Potential isolation | | | no |
| Heat dissipation (internal, per active channel) | | W | 0.095 |
| Utilization factor | % | g | 100% ($\Sigma I_{Amax} = 4A$) |
| Delay on signal change and resistive load | | | |
| from Low to High level | | μs | < 100 |
| From High to Low signal | | μs | < 150 |
| Resistive load | | | |
| Resistive load | | Ω | > 48 |
| Notes on digital outputs | | | Protective devices must be installed directly at the inductive load in order to prevent interference. |

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 | 2.615 |
| Heat dissipation capacity | P_{diss} | W | 0 |
| Operating ambient temperature min. | | $^{\circ}C$ | 0 |
| Operating ambient temperature max. | | $^{\circ}C$ | 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 - 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@ss8.1-27-24-26-04 [BAA055011])

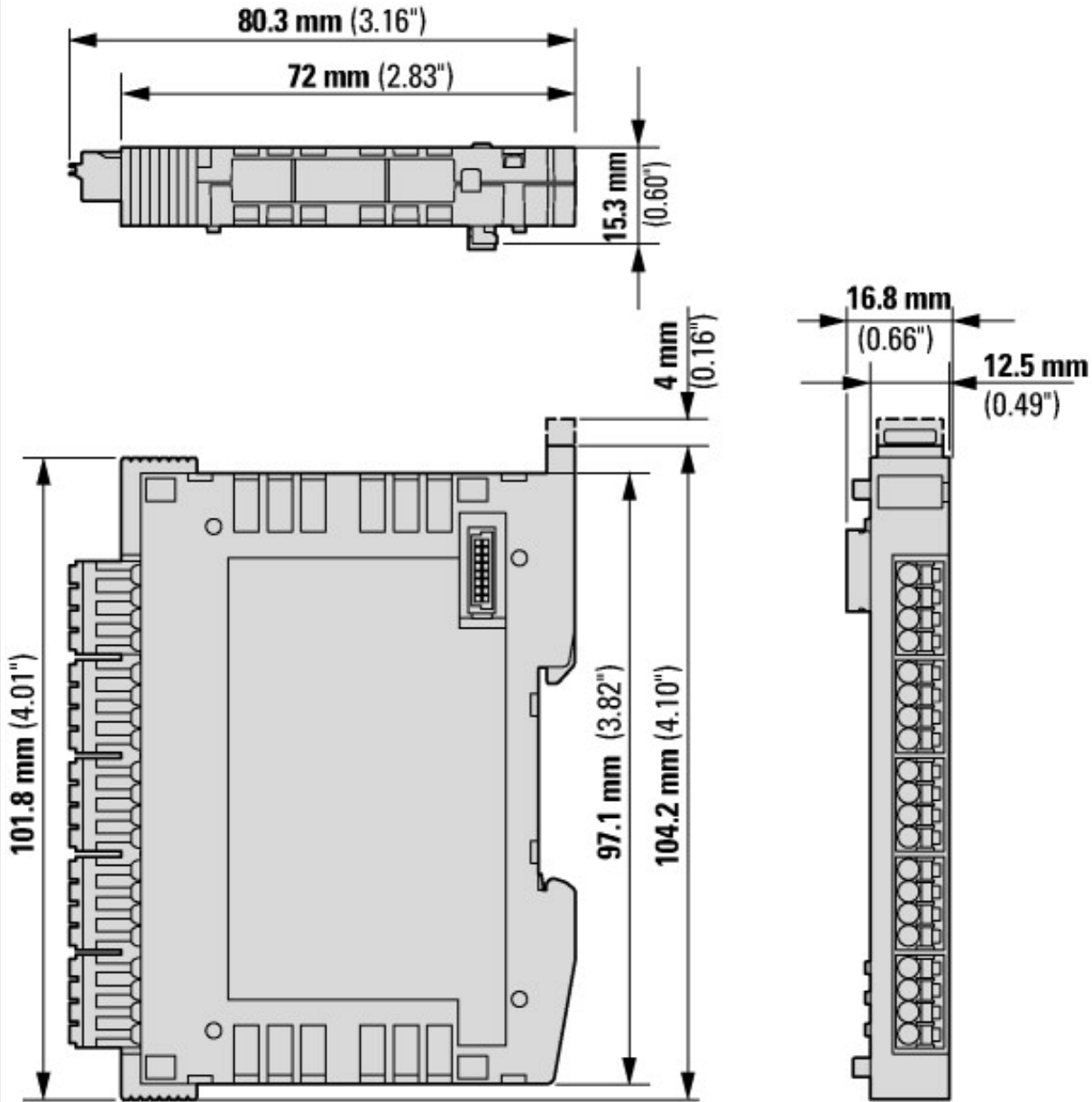
| | | |
|---|----|----------|
| Supply voltage AC 50 Hz | V | 0 - 0 |
| Supply voltage AC 60 Hz | V | 0 - 0 |
| Supply voltage DC | V | 18 - 30 |
| Voltage type of supply voltage | | DC |
| Number of digital inputs | | 8 |
| Number of digital outputs | | 8 |
| Digital inputs configurable | | No |
| Digital outputs configurable | | No |
| Input current at signal 1 | mA | 2.3 |
| Permitted voltage at input | V | -30 - 30 |
| Type of voltage (input voltage) | | DC |
| Type of digital output | | - |
| Output current | A | 0.5 |
| Permitted voltage at output | V | 0 - 30 |
| Type of output voltage | | DC |
| Short-circuit protection, outputs available | | No |
| 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 | | No |
| 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 | ms | 0 - 5 |
| Fieldbus connection over separate bus coupler possible | | No |
| 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 | 16.8 |
| Height | mm | 104.2 |
| Depth | mm | 80.3 |

Approvals

| | | |
|-------------------|--|-----------|
| Product Standards | | CE, cULus |
| UL File No. | | E135462 |

Dimensions



Notes: The plugs/connectors used depend on the version.

Additional product information (links)

MN050002 Manual XN300 digital I/O modules, analog I/O modules, power supply modules, technology modules

MN050002 Manual XN300 digital I/O modules, analog I/O modules, power supply modules, technology modules - Deutsch

ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050002_DE.pdf

MN050002 Manual XN300 digital I/O modules, analog I/O modules, power supply modules, technology modules - English

ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN050002_EN.pdf