# DATASHEET - XN-322-10AI-TEKT

**Analog input module, 8 thermocouple inputs and two KTY inputs**

**Part no.** **XN-322-10AI-TEKT**
**178792**

## General specifications

| | |
|---|---|
| Product name | Eaton XN-322 Input module |
| Part no. | XN-322-10AI-TEKT |
| EAN | 7640130098268 |
| Product Length/Depth | 104.2 millimetre |
| Product height | 16.8 millimetre |
| Product width | 80.3 millimetre |
| Product weight | 0.061 kilogram |
| Certifications | IEC/EN 61131-2<br>IEC/EN 61000-6-4<br>CULus<br>UL File No.: E135462<br>CE<br>IEC/EN 61000-6-2 |
| Product Tradename | XN-322 |
| Product Type | Input module |
| Product Sub Type | None |
| Catalog Notes | The max. heat dissipation is specified as the maximum power produced inside the device's housing.<br>A KTY sensor is included with the product.<br>265 V AC (thermocouples), 40V DC (KTY) |

## Features & Functions

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| Electric connection type | Plug-in connection |
| Features | Input signal, configurable<br>Analog inputs configurable<br>Input, resistance thermometer<br>Analog outputs configurable<br>Input, thermocouple<br>Fieldbus connection over separate bus coupler possible |
| Fitted with: | 2 kHz, third-order low-pass input filter<br>Parameterizable Software input filter |
| Measurement ranges | 0 - 1820 °C (Temperature measurement, Type B)<br>0 - 940 °C (Temperature measurement, Type K)<br>0 - 1760 °C (Temperature measurement, Type R)<br>0 - 400 °C (Temperature measurement, Type T)<br>0 - 590 °C (Temperature measurement, Type U)<br>0 - 680 °C (Temperature measurement, Type L)<br>0 - 520 °C (Temperature measurement, Type E)<br>0 - 690 °C (Temperature measurement, Type J)<br>0 - 1080 °C (Temperature measurement, Type N)<br>-20 - 80 °C (Temperature measurement, KTY10)<br>0 - 1760 °C (Temperature measurement, Type S) |
| Value representation | SIGNED16 (0.1 °C), Temperature and resistance measurement |

## General information

| | |
|---|---|
| Current consumption | 75 mA (typ.), for +24 V, Power supply - Input<br>62 mA (typ.), for +5 V power supply (internal), Power supply - Input |
| Degree of protection | NEMA 1<br>IP20 |
| Mounting method | Rail mounting possible |
| Number of channels | 10, Analog Inputs |
| Overvoltage category | III |
| Pollution degree | 3 |
| Product category | XN-322 analog input module |
| Resolution | 16 Bit (Analog inputs) |
| Type | XN300 I/O slice module<br>Analog input module for eight thermocouples and two KTY temperature sensors for cold-junction compensation purposes. |
| Used with | XN300<br>XN-312-… |
| Voltage type | DC |

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| **Ambient conditions, mechanical** | |
| Height of fall (IEC/EN 60068-2-32) - max | 1 m |
| Mounting position | Horizontal |
| Shock resistance | 15 g, Mechanical, Half-sinusoidal shock 11 ms, 18 Impacts |
| Vibration resistance | 5 - 8.4 / 8.4 -150 Hz, 3,5 mm / 1 g |
| **Climatic environmental conditions** | |
| Air pressure | 795 - 1080 hPa (operation) |
| Ambient operating temperature - min | 0 °C |
| Ambient operating temperature - max | 60 °C |
| Ambient storage temperature - min | -20 °C |
| Ambient storage temperature - max | 85 °C |
| Climatic proofing | Dry heat to IEC 60068-2-2<br>Damp heat, constant, to IEC 60068-2-3 |
| Environmental conditions | Condensation: prevent with appropriate measures |
| Relative humidity | 0 - 95 % (non-condensing) |
| **Electro magnetic compatibility** | |
| Air discharge | 8 kV |
| Burst impulse | 1 kV, Signal cable<br>2 kV, Supply cable |
| Contact discharge | 4 kV |
| Electromagnetic fields | 3 V/m at 1.4 - 2 GHz (according to IEC EN 61000-4-3)<br>10 V/m at 0.08 - 1.0 GHz (according to IEC EN 61000-4-3)<br>1 V/m at 2 - 2.7 GHz (according to IEC EN 61000-4-3) |
| Emitted interference | 40 dB (at 30 - 230 MHz, Class A, radiated, high frequency)<br>47 dB (at 230 - 1000 MHz, Class A, radiated, high frequency) |
| Radiated RFI | 10 V |
| Surge rating | 0.5/0.5 kV, Supply cable, balanced/unbalanced), EMC<br>1 kV, Signal cable, unbalanced, EMC |
| Voltage dips | Voltage dips: 10 ms/Voltage fluctuations: Yes |
| **Terminal capacities** | |
| Terminal capacity | 0.25 - 0.75 $mm^2$, with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)<br>0.2 - 1.5 $mm^2$, solid, H07V-U<br>0.25 - 1.5 $mm^2$, with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)<br>24 - 16 AWG<br>0.2 - 1.5 $mm^2$, flexible without ferrule, H07V-K |
| Gauge pin | A1 (according to IEC/EN 60947-1) |
| Stripping length (main cable) | 10 mm |
| Insulating material group | I |
| **Electrical rating** | |
| Rated operational voltage | 160 V (terminations) |
| 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** | |
| Connection type | Push-in spring-cage terminal (plug-in connection), Connection design in TOP direction<br>2 conductors, Temperature and resistance measurement |
| Protocol | Other bus systems |
| **Input/Output** | |
| Accuracy | ± 0.7 % of full scale, Temperature and resistance measurement |
| Input | 2 KTY inputs<br>8 Analog thermocouple inputs |
| Load current | Not specified by plug manufacturer |
| Measured variables | Temperature |
| Number of inputs (analog) | 10 |
| Number of outputs (analog) | 0 |
| Value refresh time/cycle time | Min. 1 / 1 ms (per channel / all channels), Analog Inputs |

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| **Safety** | | | |
| Explosion safety category for dust | | | None |
| Explosion safety category for gas | | | None |
| Potential isolation | | | Analog inputs: no |
| **Design verification** | | | |
| Equipment heat dissipation, current-dependent Pvid | | | 0 W |
| Heat dissipation capacity Pdiss | | | 0 W |
| Heat dissipation per pole, current-dependent Pvid | | | 2.11 W |
| Rated operational current for specified heat dissipation (In) | | | 0 A |
| Static heat dissipation, non-current-dependent Pvs | | | 3.04 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 - analogue I/O module (EC001596)

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])

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|---|---|---|---|
| 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 |
| Power consumption | | W | 2.6 |
| Input, current | | | No |
| Input, voltage | | | No |
| Input, resistor | | | No |
| Input, resistance thermometer | | | Yes |
| Input, thermocouple | | | Yes |
| Input signal, configurable | | | Yes |
| Resolution of the analogue inputs | | Bit | 16 |
| Output, current | | | No |
| Output, voltage | | | No |
| Output signal configurable | | | No |
| Resolution of the analogue outputs | | Bit | 0 |
| Number of analogue inputs | | | 10 |
| Number of analogue outputs | | | 0 |

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| Analogue inputs configurable | Yes |
| Analogue outputs configurable | 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 |
| 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 |
| Degree of protection (NEMA) | 1 |
| Type of electric connection | Plug-in 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 |

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| 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 | 80.3 |
| Height | | mm | 16.8 |
| Depth | | mm | 104.2 |


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