Honeywell

Compact I/O Module

XIO-4PT1000 LON® ANALOG INPUT MODULE

INSTALLATION INSTRUCTIONS

GENERAL

The Honeywell XIO-4PT1000 LON® Analog Input Module is a LON module with 8 analog inputs, 4 temperature and 4 voltage, suitable to collect temperatures with PT 1000 sensors and voltages. In a LON installation, all 8 inputs can be scanned simultaneously by standard network variables, SNVT.

SPECIFICATIONS

Electrical Ratings:
Supply Operating Voltage: 20 to 28 V AC/DC.
Current Consumption: 67 mA (AC) / 24 mA (DC).
Duty cycle: 100%.
Recovery time: 550 ms.

Terminal Blocks:
Supply and Bus: 16 AWG (1.5 mm²).
(terminal block and jumper plug included with each unit).
Analog Inputs: 14 AWG (2.5 mm²).

Display:
Operation: green LED.
Function: yellow LED for status (service).

LON Interface:
Transceiver: FTT10A free topology.
Neuron: 3120, 3K EEPROM.
Data format: standard network variables (SNVT).
Transmission rate: 78 kBit/s.
Maximum Length:
Line topology: 8858 ft. (2700 m) / 64 nodes.
Free topology: 1640 ft. (500 m) / 64 nodes.
Cabling: Twisted Pair.

Temperature Ratings:
Operating: 23° F to 131° F (-5° C to +55° C).
Storage: -4° F to +158° F (-20° C to +70° C).

Humidity Range:
5 to 85% RH, non-condensing, in accordance with EN 60721-3-3 climatic class 3k3.

Dimensions (W x H x D):
1.4 x 2.7 x 2.4 in. (35 x 68 x 60 mm).

Weight: 3.0 ounces (84 grams).

Mounting Position: Any.

Mounting: DIN rail per EN 50022.

Input:
Temperature input range for platinum 1000 sensor:
-58° F to 302° F (-50° C to +150° C).
Resistive input sensor resolution: 0.1 kΩ.
Resistive input temperature error: ±0.2° F (±0.1° C).
Voltage input: 0 ... 10 V DC.
Maximum: 11 V DC.
Voltage input sensor resolution: 10 mV (0.0 ... 100%).
Voltage input temperature error: ±100 mV.
Input impedance: 10 kΩ.

Construction Material:
Housing and Terminal Blocks: Polyamide 6.6 V0.
Faceplate: Polycarbonate.

Protective circuitry:
Operating voltage: polarity reversal protection.

Protection:
IP40 housing DIN 40050.
IP20 terminal blocks DIN 40050.

CE c UL us

95-7728

SAFETY INSTRUCTIONS

NOTES REGARDING DEVICE DESCRIPTION

These instructions include indications for use and mounting of the device. In case of questions that cannot be answered with these instructions, please consult the product supplier or manufacturer. It is the responsibility of the equipment installer to ensure that all federal, state and local codes are followed.

SAFETY INSTRUCTIONS

- Keep these Installation Instructions for industrial safety and the prevention of accidents.
- Only qualified personnel shall do mounting and installation work with these devices, see section titled QUALIFIED PERSONNEL.
- The information in these instructions must be read and understood by every person using this device.

QUALIFIED PERSONNEL

Qualified personnel in the sense of these instructions are persons who are well versed in the use and installation of such devices and whose professional qualification meets the requirements of their work.

This includes, for example:

- Qualification to connect the device according to applicable specifications and regulations, and a qualification to put this device into operation, to power it down, or to activate it by respecting the internal directions.
- Knowledge of safety rules.
- Knowledge about application and use of the device within the equipment system.

BEFORE INSTALLATION

1. Unpack the XIO-4PT1000 LON Analog Input Module.
2. Check the equipment and report any damage to a Honeywell representative.
3. Read all of these instructions and ensure they are understood.

MOUNTING

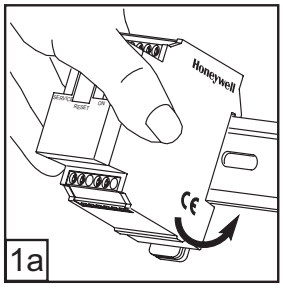
Mount the XIO-4PT1000 LON Analog Input Module on standard DIN rail per EN 50022 (1.4 x 0.3 in. [35 x 7.5 mm]), in junction boxes and/or on distribution panels.

INSTALLATION

⚠ CAUTION

Electrical installation and device termination shall be accomplished by qualified persons only, by respecting all applicable specifications and regulations.

1. Power down the equipment. Mount the module on the DIN rail.



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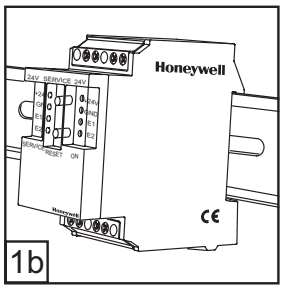

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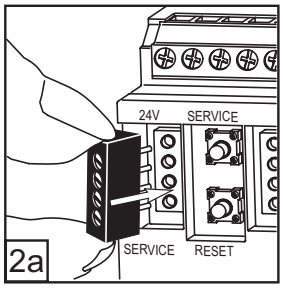
2. Plug in the terminal block for bus connection.



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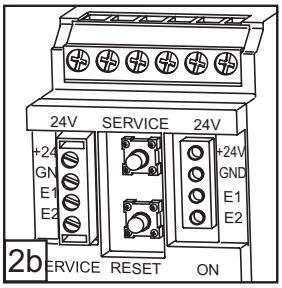

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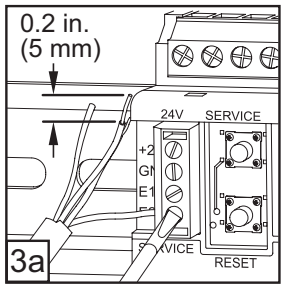
3. Prepare the cable for bus connection:



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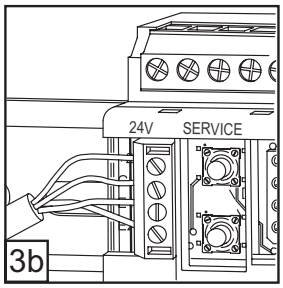

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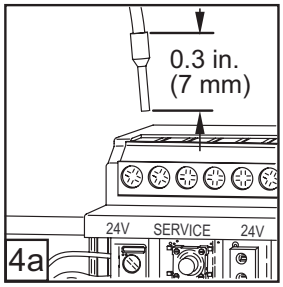
a. Remove about 0.8 in. (2 cm) of the plastic cable sheath.
b. Strip 0.2 in. (5 mm) insulation from each wire. Put a wire end sleeve on stranded wires.
c. Insert the wire to the respective contact and secure it by screwing down the contact screw.
d. Wire cross section of the 4 pole terminal block bus/main connection:
   (1) Maximum 16 AWG (1.5 mm^2) single wire.
   (2) Maximum 18 AWG (1.0 mm^2) stranded wire.
   (3) Wire diameter minimum 28 AWG (0.3 mm) up to 16 AWG (1.4 mm).

4. Prepare cable for module connections.



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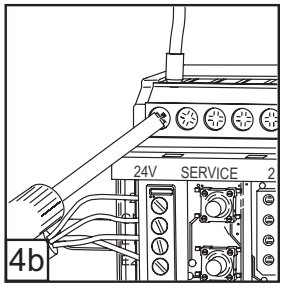

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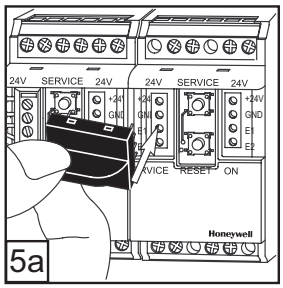
a. Strip the wires by 0.3 in. (7 mm). Put a wire end sleeve on stranded wires.
b. Insert the wire into the respective module contact and secure it by screwing down the contact screw.
c. Wire cross section of the module contacts:
   (1) Maximum 12 AWG (4.0 mm^2) single wire.
   (2) Maximum 14 AWG (2.5 mm^2) stranded wire.
   (3) Wire diameter: minimum 28 AWG (0.3 mm) up to maximum 10 AWG (2.7 mm).

5. The module can be aligned without interspace. Use the strapping plug to connect bus and supply voltage when the modules are mounted in series. The modules can be mounted in series without interspace. The maximum number of modules connected in series is 15, with each group needing an external power supply.



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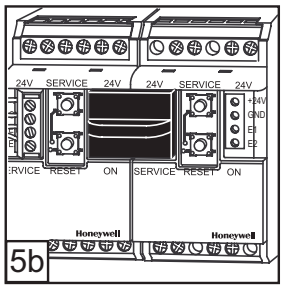

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TERMINATION

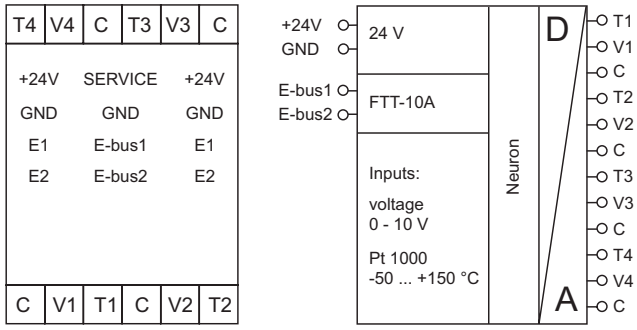

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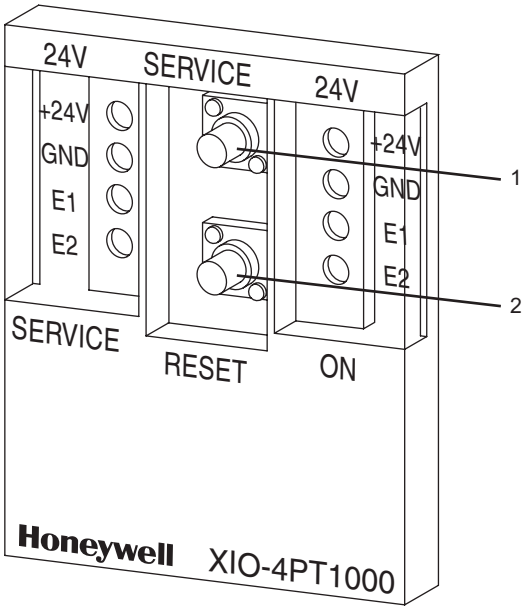
Fig. 1. Termination diagram for the XIO-4PT1000.

DISPLAY AND OPERATING ELEMENTS



1 SERVICE KEY AND YELLOW LED.

2 RESET KEY AND GREEN LED (OPERATING MODE).

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Fig. 2. XIO-4PT1000 front display and operating elements.

WIRING

Wiring of the XIO-4PT1000 must be accomplished in accordance with federal, state, and local requirements. Figures 3 and 4 show front and side panel diagrams for wiring of the XIO-4PT1000.

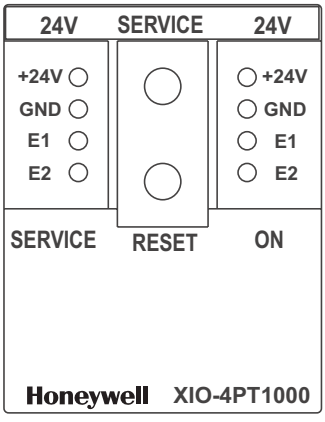

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Fig. 3. Front panel diagram of XIO-4PT1000.

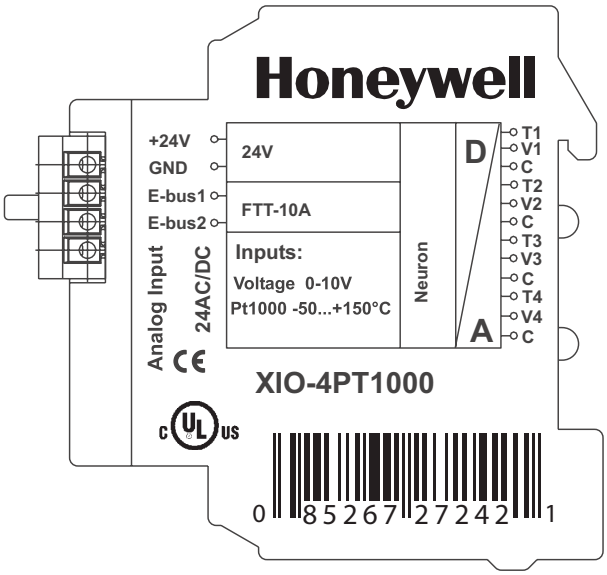

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Fig. 4. Side panel diagram of XIO-4PT1000.

SOFTWARE DESCRIPTION

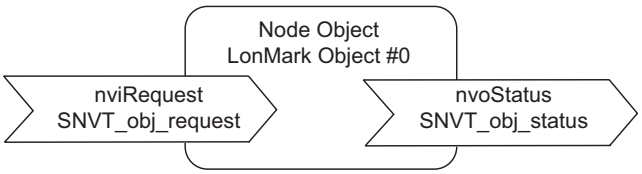

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Fig. 5. XIO-4PT1000 Node Object.

The Node Object monitors and controls the functions of the different objects in the device. It supports the basic functions Object-Status and Object-Request required by LONMARK®.

nviRequest	**SNVT_obj_request**
nvoStatus	**SNVT_obj_status**

These application objects contain the functions status record and data exchange.

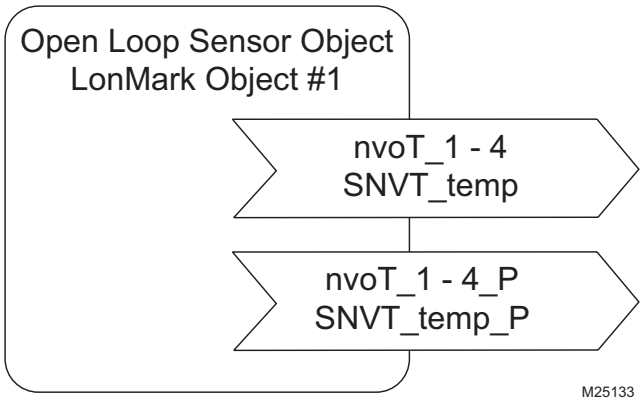

Fig. 6. XIO-4PT100 T Object (temperature).

nvoT[1..4] (index 2..5)
SNVT type **SNVT_temp**
Platinum 1000 temperature values between -58° F (-50.0° C) and 302° F (+150.0° C) are measured at the inputs and issued to the LON bus.

nvoT[1..4]P (index 6..9)
SNVT type **SNVT_temp_p**
See nvoT[1..4] but with 0.01K issue.

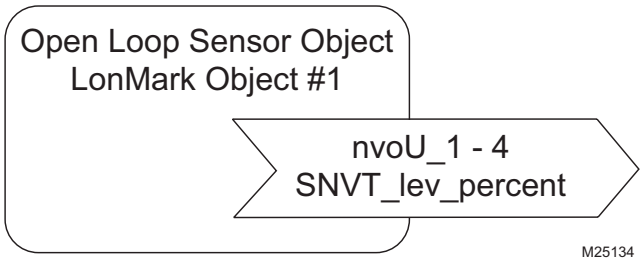

Fig. 7. XIO-4PT1000 U Object (voltage).

nvoU[1..4] (index 10..13) **SNVT_lev_percent**
Voltages between 0 and 10.0 volts DC are measured at the inputs and issued to the LON bus.

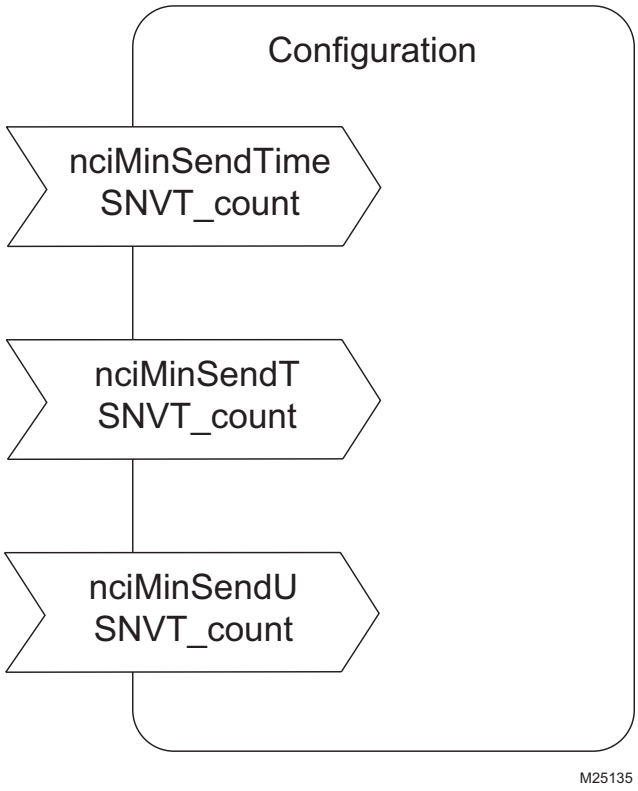

Fig. 8. XIO-4PT1000 Configuration variables.

nciMinSendTime (index 14)
SNVT type **SNVT_count**
All output variables described above are issued even without a status change at the end of a preset period of time. Thus the device reports periodically to the system.
Time settings: 0 timer turned off.
1 .. 60 timer time in seconds (factory setting 0).

nciMinSendT (index 15)
SNVT type **SNVT_count**
Guaranteed interval between two temperature values.
Time settings: 0 timer turned off.
1 .. 60 timer time in seconds (factory setting 0).

nciMinSendU (index 16)
SNVT type **SNVT_count**
Guaranteed interval between two voltage values.
Time settings: 0 timer turned off.
1.. 60 timer time in seconds (factory setting 0).

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