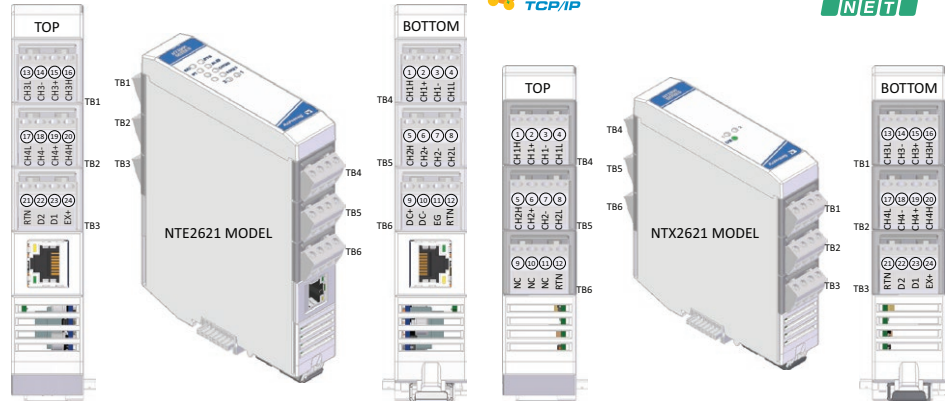


Ethernet I/O: BusWorks® NT Series

NT2620 Ethernet Temperature Input Modules



4 RTD/resistance inputs ♦ 2 discrete I/O ♦ Ethernet I/O plus Expansion I/O ♦ Multi-protocol support

The BusWorks® NT2000 series offers a cost-effective, modular solution for Ethernet remote I/O systems. Two module types are available. NTE Ethernet models provide the protocol interface plus I/O signal processing channels. NTX expansion modules add extra I/O channels when mated to any NTE Ethernet communication module.

NT2620 modules offer 4 RTD/resistance inputs and 2 bidirectional discrete digital I/O channels. Each input can support RTD or resistance sensor types. NTE Ethernet models provide a network interface to monitor temperature levels. Appending NTX expansion models can interface up to 16 RTD sensor inputs at a single IP address.

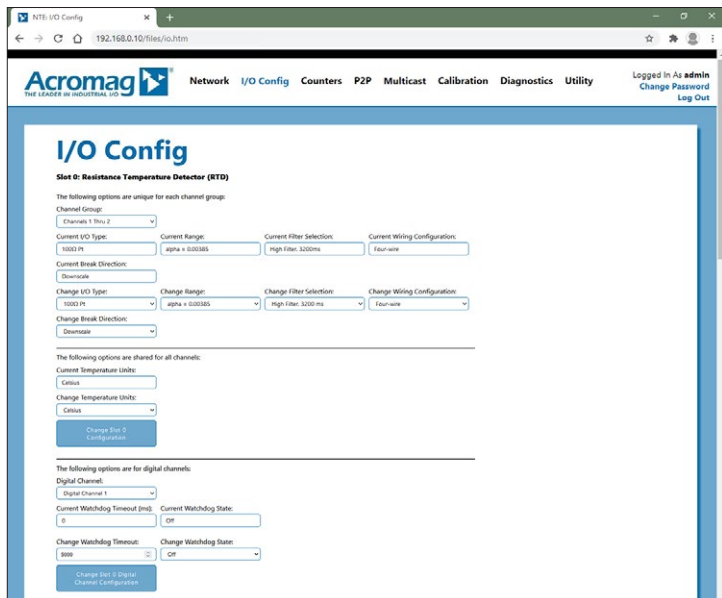
Applications include monitoring temperatures in tanks, pipes, motors, heaters, chillers, and many industrial processes. Resistive sensors include slidewires and potentiometers.

An isolated RS-485 bus links up to three expansion modules to the Ethernet module with bus connectors that join units along the DIN rail. This internal NT bus distributes power and communication between the modules. Users can mix analog, temperature, and discrete I/O modules across the NT bus.

Acromag's i2o® messaging technology allows direct peer-to-peer or multicast communication between remote modules without a master controller.

Key Features & Benefits

- Configured over Ethernet using a web browser
- Expandable I/O capacity, up to 54 I/O channels at one IP address
- Field-selectable Modbus TCP/IP, EtherNet/IP, or Profinet communication
- i2o peer-to-peer or multicast communication
- Dual RJ45 ports enable daisy chain topology
- Four RTD or linear resistance inputs
- Accepts Pt, Ni, and Cu RTDs with 2, 3, or 4 wires and 0 to 4500 ohm linear ranges
- Discrete I/O can monitor and control equipment with TTL or 32V logic levels
- *OPC-UA, *MQTT and *RESTful API IIoT support
- Conditional logic for rule-based I/O operation
- Advanced *alarm and *data logging functions
- 1500V isolation between I/O, network, and power
- Thin 25mm housing with pluggable terminals
- Wide temperature operation (-40 to 70°C)
- CE compliant. Hazardous approvals pending
- * Coming soon. Consult factory for availability.



Easily configure I/O modules using any web browser.

Tel 877-214-6267 ■ sales@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

Ethernet I/O: BusWorks® NT Series

NT2620 Ethernet Temperature Input Modules

Performance Specifications

■ Ethernet Interface (NTE models only)

Communication

Configurable for Modbus TCP/IP and EtherNet/IP, and Profinet.

10/100Mbps data rate, auto-sensing.

IP Address

Default 192.168.0.10. Configurable static IP or DHCP.

■ Analog Inputs

A/D Converter

Four input channels differentially multiplexed to a 24-bit sigma-delta ADC through unity-gain differential buffers (only 16-bits are used).

Input Accuracy

Input Type	Input Range	Accuracy (Typical)
PT 100 ohm	-200°C to +850° C	±0.25°C
PT 200 ohm	-200°C to +850° C	±0.30°C
PT 500 ohm	-200°C to +850° C	±0.50°C
PT1000 ohm	-200°C to +850° C	±1.00°C
Ni 120 ohm	-80°C to +320°C	±0.08°C
Cu 10 ohm	-200°C to +270°C	±1.00°C
Resistance	0 to 25 ohm	±0.05 ohm
	0 to 450 ohm	±0.10 ohm
	0 to 900 ohm	±0.90 ohm
	0 to 2250 ohm	±2.25 ohm
	0 to 4500 ohm	±4.50 ohm

Break Detection

Configurable for upscale or downscale open sensor or lead break detection.

Linearization (RTD Inputs)

Within ±0.25°C of the NIST tables.

Temperature Measurement Drift

Better than ±75ppm/°C (±0.0075%/°C).

■ Discrete Inputs (Active-Low)

Input Signal Voltage Range
0 to +32V DC.

Input Current
280µA, typical at 32V DC.

Input Signal Threshold
TTL compatible w/100mV of hysteresis, typical.
1.7V DC Low-to-High, 1.6V DC High-to-Low.
0.8V DC TTL LOW limit, 2.0V DC TTL HIGH limit.

Input Resistance
200K ohms typical (input only), ~10K ohms w/ tandem output using internal pull-ups.

Input Response Time
5ms typical, not including network time.

■ Discrete Outputs (Sinking)

Output "OFF" Voltage Range
0 to 32V DC.

Output "ON" Current Range
0 to 300mA DC, continuous.

Output Rds ON Resistance
0.8 ohms typical, 1.6 ohms maximum.

Output Response Time
10ms typical. Does not include network time.

■ General I/O

Input Update/Conversion Rate
Fresh data available to the network every 10ms.

Response Time from an Ethernet command
Less than 5ms, typical.

Excitation
External voltage of 4-32V required between I/O EXC and any RTN for D/I/O. Excitation must source 600mA at EXC level 4V to 32V. For both channels at 250mA max. rated load.

I/O Pull-Ups (Internal)

Each discrete I/O channel has 10KΩ pull-up to EXC to pull the tandem open drain output and input high/OFF.

■ Environmental and Physical

Temperature and Humidity
Operating: -40 to +70°C (-40 to +158°F).
Storage: -40 to +85°C (-40 to +185°F).
Relative Humidity: 5 to 95%, non-condensing.

Isolation
1500V AC for 60 seconds and 250V AC or 354V DC continuous between I/O channels (group), each network port and power circuits.

Power Supply
10-32V DC SELV power wired to NTE model only.
Power to NTX models is via its NT bus connection.

Power Consumption
NTE2621: <=1.36W (input).
NTX2621: <=0.142W max. (each).

Dimensions (width x height x depth)

NTE: 25 x 116.9 x 139.2 mm (0.98 x 4.6 x 5.48 inches).
NTX: 25 x 116.9 x 116.65 mm (0.98 x 4.6 x 4.59 inches).

Weight

NTE: 0.5 lbs (0.23 kg).
NTX: 0.3 lbs (0.14 kg).

■ Standards and Certifications

Electromagnetic Compatibility (EMC)
CE marked, per EMC Directive 2004/108/EC.

Safety Approvals

Hazardous approvals pending.

Ordering Information

■ Models

[Go to on-line ordering page >](#)

NTE2621-1111

Ethernet I/O module with dual RJ45 ports, 4 RTD/resistance inputs and 2 discrete sinking I/O.

NTX2621-0011

Expansion I/O module with 4 RTD/resistance inputs and 2 discrete sinking I/O.

■ Accessories

5035-369

5035-370

Ethernet patch cable, low EMI, double-shielded. 3 feet (5035-369) or 15 feet (5035-370).

P55R-VB24

Power supply, 24V DC, 15W output.

See www.acromag.com for other sizes.



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