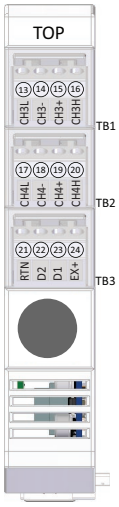
Wireless I/O: BusWorks® NTW Series

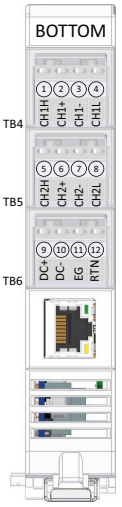
NTW2620 Wi-Fi Ethernet Temperature Input Modules

CE 24 HOUR STOCK ITEM 2 YEAR WARRANTY RoHS Compliant

EtherNet/IP Modbus TCP/IP

Shown with NTX Expansion I/O Module





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

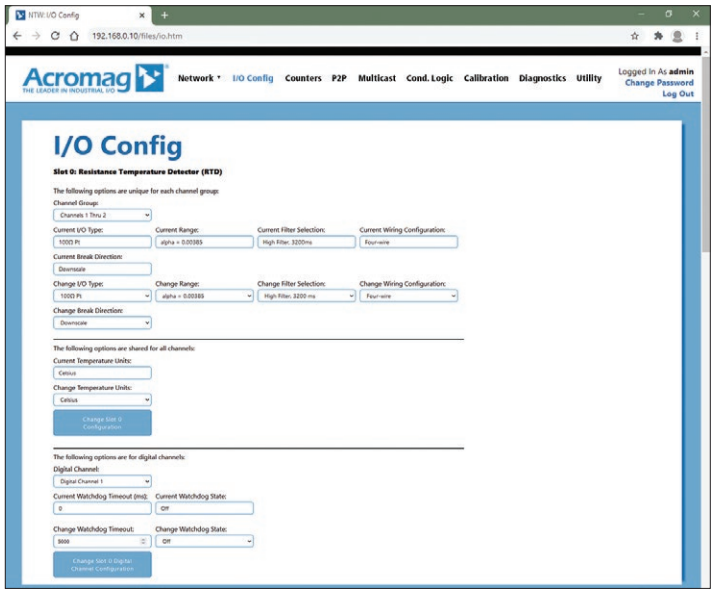
BusWorks® NTW2000 modules offer a cost-effective, wireless solution for Ethernet remote I/O systems. NTW Wi-Fi models provide the protocol interface plus I/O signal processing channels. Connecting NTX expansion modules can add extra I/O channels or a mix of signal types over a single Wi-Fi interface.

NTW2620 modules offer 4 RTD/resistance inputs and 2 bidirectional discrete digital I/O channels. Each input can support RTD or resistance sensor types. Each module has an embedded wireless IoT gateway providing a Wi-Fi interface to monitor temperature levels. An RJ45 port provides additional flexibility for a cabled network interface.

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 NTX expansion modules to the NTW Wi-Fi module with connectors that join units along the DIN rail. This internal NT bus distributes power and communication between the modules. Users can mix temperature, current, voltage, and discrete I/O modules across the NT bus.

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



Easily configure I/O modules using any web browser.

Key Features & Benefits

- Wireless 802.11 a/b/g/n dual-band 2.4 and 5 GHz Wi-Fi interface
- Configured over Ethernet with web browser
- Expandable I/O capacity, up to 64 I/O channels of mixed signal types on one IP address
- Field-selectable Modbus TCP/IP or EtherNet/IP communication
- i2o peer-to-peer communication
- RJ45 port enables cable connections
- 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
- 1500V isolation between I/O, network, and power
- Thin 25mm housing with pluggable terminals
- Wide temperature operation (-40 to 70°C)
- LED status indicators for visual troubleshooting
- CE compliant. UL/cUL Class 1 Div 2 and ATEX/IECEx Zone 2 approvals (pending)

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

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NTW2620 Wi-Fi Ethernet Temperature Input Modules

Performance Specifications

Ethernet Interface

Communication
Configurable for Modbus TCP/IP and EtherNet/IP.

10/100Mbps data rate, auto-sensing.

IP Address
Default 192.168.0.10. Configurable from static IP or via WLAN using DHCP

Wi-Fi Interface

Wireless Communication
Dual Band 2/.4/5GHz Wi-Fi interface.
IEEE 802.11a/b/g up to 54Mbps.
IEEE 802.11n up to 150Mbps.
IEEE 802.11r fast roaming.

Data Rate
Fixed 100Mbps, full-duplex (not auto-negotiated).

Wi-Fi Security
WPA3 / TLS 1.2 with PKI and X.509 certificate management. AES 256-bit encryption.

Antenna
Single external UFL antenna wired to external whip/tilt type antenna using an RP-SMA connector. 2.15dBi.
Dimension (straight): 108.5 x 10 mm (4.27 x 0.39").
Dimension (bent): 31.5 x 87 mm (1.24 x 3.43").

Communication Distance
100 meters line-of-sight, typical.

RF Certification
USA (FCC Part 15), Canada (IC RSS), EU (RED), Japan (MIC), China (SRRC), AU/NZS.

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 DI/O. Excitation must source 600mA st 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 NTW model only. Power to NTX models is via its NT bus connection.

Power Consumption
NTW2621: <=1.36W (input).

Dimensions (width x height x depth - w/o antenna)
NTW: 25 x 116.9 x 139.2 mm (0.98 x 4.6 x 5.48 inches).

Weight
NTW: 0.5 lbs (0.23 kg).

Standards and Certifications

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

Safety Approvals
UL/cUL: Class I; Div 2; Groups A, B, C, D (pending).
ATEX/IECEx: Zone 2 (pending).

Ordering Information

Models

Go to on-line ordering page >

NTW2621-1111
Wi-Fi Ethernet I/O module with one RJ45 port, 4 RTD/resistance inputs and 2 discrete sinking I/O.

Expansion I/O Modules

See Acromag.com/NT for a full list of NTX Expansion I/O Units.

Accessories

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

PS5R-VB24
Power supply, 24V DC, 15W output.

See www.acromag.com for other sizes.

ISO9001
AS9100
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