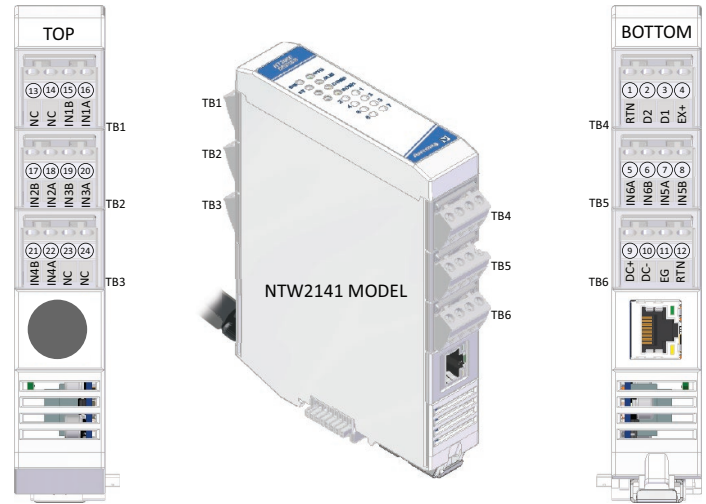


Wireless I/O: BusWorks® NTW Series

NTW2240 Wi-Fi Ethernet Analog I/O Modules



16 single-ended voltage inputs ♦ 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.

NTW2240 modules offer 16 voltage inputs. Each input supports bipolar and unipolar ranges with 16-bit A/D. Each module has an embedded wireless IoT gateway providing a Wi-Fi interface to monitor sensor levels or 0-10V devices. An RJ45 port provides additional flexibility for a cabled network interface.

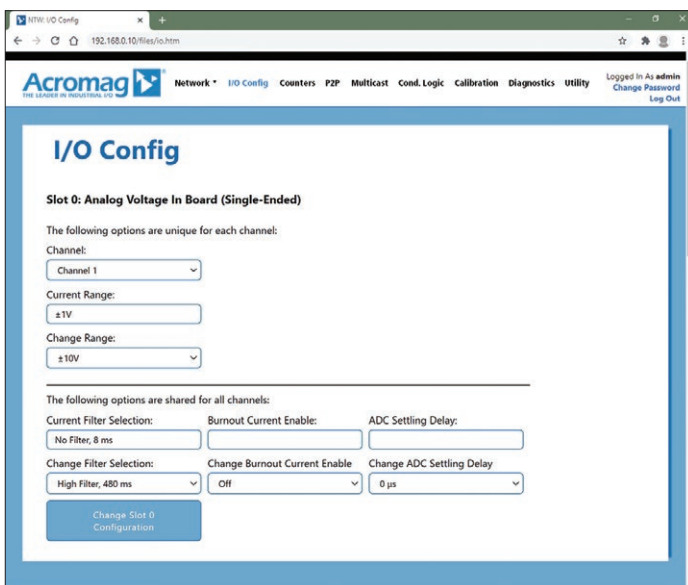
Applications include collecting pressure, HVAC levels, temperature, and other data at sensors, transducers, or transmitters. The 0-10V signal is very commonly used for automation and environmental controllers.

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.

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
- 16 single-ended voltage inputs that share common
- Accepts $\pm 1/5/10V$ and 0 to 1/5/10V inputs
- LED status indicators for visual troubleshooting
- 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)



Easily configure I/O modules using any web browser.



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Wireless I/O: BusWorks® NTW Series

NTW2240 Wi-Fi Ethernet Analog I/O 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

16 input channels multiplexed to a 24-bit sigma-delta ADC through resistive dividers using a 16-bit bipolar conversion scheme.

Input Voltage Ranges

±1V, ±5V, ±10V, 0-1V, 0-5V, 0-10V.

Input channels are single-ended inputs that share a common return connection.

Input Accuracy

Better than ±0.05% of span typical, ±0.1% maximum.

Input Measurement Temperature Drift

Better than ±50ppm/°C (±0.0050%/°C).

Input Update/Conversion Rate

Response time will vary as filtering is increased. The fastest response time without sample averaging is less than 1ms typical.

Input Overvoltage Protection

Bipolar Transient Voltage Suppressors (TVS) with 18V clamp level. Inputs also include triple diode over-voltage clamps.

Input Impedance

97.1KΩ minimum (NT2241 input divider).

Input Filter

Normal mode filtering fixed per input type.

■ 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.

■ 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 NT bus connection.

Power Consumption

NTW2241: ≤1.5W (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 >](#)

NTW2241-1111

Wi-Fi Ethernet I/O module with one RJ45 port, 16 single-ended voltage inputs

■ 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).

P55R-VB24

Power supply, 24V DC, 15W output.

See [www.acromag.com](#) for other sizes.

ISO9001 
AS9100 

Acromag 
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