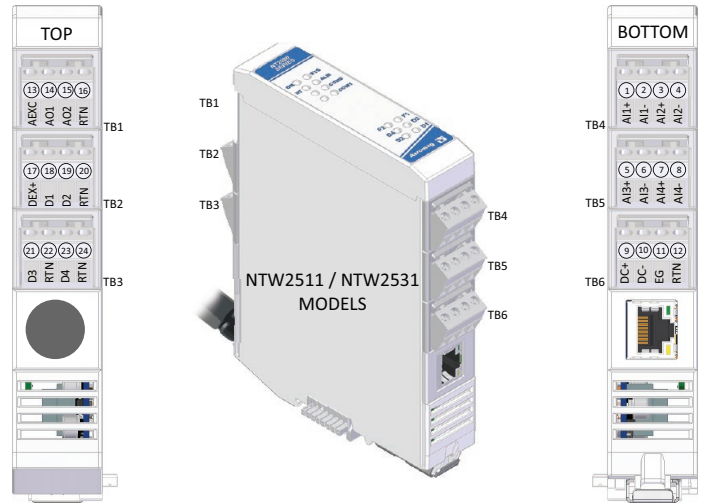


Wireless I/O: BusWorks® NTW Series

NTW2510/2530 Wi-Fi Ethernet Multi-Function I/O Modules



4 analog inputs ◆ 2 analog outputs ◆ 4 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.

NTW2510 modules offer 4 current inputs, 2 current outputs, and 4 discrete I/O channels. NTW2530 models have voltage input. Each module has an embedded wireless IoT gateway providing a Wi-Fi interface to monitor and control I/O signals. An RJ45 port provides additional flexibility for a cabled network interface.

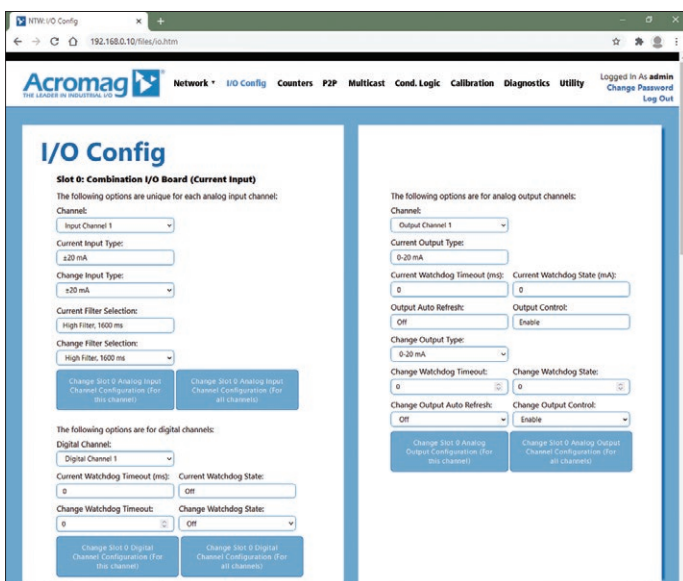
Applications include monitoring and controlling analog signals representing temperature, pressure, level, and flow. Discrete I/O sense and control levels on motors, lamps, valves, and other equipment.

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
- Four differential analog inputs
current ranges: 0/4-20mA, ±20mA, 0/10-50mA
voltage ranges: 0-1/5/10V, ±1/5/10V
- Two process current 0/4-20mA outputs (optional)
- Four tandem discrete I/O for TTL or 32V input
- 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

NTW2510/2530 Wi-Fi Ethernet Multi-Function 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

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

Input Current Ranges (NT2510 models)

±20mA, 0-20mA, 4-20mA, 0-50mA, or 10-50mA.

Input Voltage Ranges (NT2530 models)

±1V, ±5V, ±10V, 0-1V, 0-5V, 0-10V.

Input Accuracy

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

■ Analog Outputs

NTW2511, 2531 models only

D/A Converter

Two current output channels driven by a 16-bit DAC.

Output Current Ranges

0-20mA, 4-20mA.

Output Accuracy

Factory calibrated to better than ±0.1% of span. Manual calibration can be better than ±0.05%.

Output Excitation

Two excitation inputs for 12V and 24V sources.

■ Discrete Inputs (Active-high)

Input Signal Voltage Range

0 to 32VDC.

Input Signal Threshold

TTL compatible w/100mV of hysteresis, typical.

Low-to-High threshold: 1.7VDC, typical.

High-to-Low threshold: 1.6VDC, typical.

TTL logic limit - LOW: 0.8V DC max.

TTL logic limit - HIGH: 2.0VDC min.

Tandem I/O Channels

Inputs support loop-back monitoring of output state.

■ Discrete Outputs (Sourcing)

Output "ON" Voltage Range

TTC (6V) to 32V DC.

Output "ON" Current Range

0 to 300mA DC, continuous.

■ General I/O

Input Update/Conversion Rate

Fresh data available to the network every 10mS.

Dependent on number of samples with averaging.

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. Note, network isolation is <1500V.

Power Supply

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

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 >](#)

NTW2511-1111

Wi-Fi Ethernet I/O module with one RJ45 port, 4 current inputs, 2 current outputs, 4 discrete I/O

NTW2512-1111

Wi-Fi Ethernet I/O module with one RJ45 port, 4 current inputs, 4 discrete I/O

NTW2531-1111

Wi-Fi Ethernet I/O module with one RJ45 port, 4 voltage inputs, 2 current outputs, 4 discrete I/O

NTW2532-1111

Wi-Fi Ethernet I/O module with one RJ45 port, 4 voltage inputs, 4 discrete I/O

■ Expansion I/O Modules

See [Acromag.com/NT](#) for a full list of NTX Expansion I/O Units.

■ Accessories

5020-350

Toroidal 0 to 20A AC current sensor. 0-11, 17mA output.

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 **MADE IN USA**

Acromag 
THE LEADER IN INDUSTRIAL I/O

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