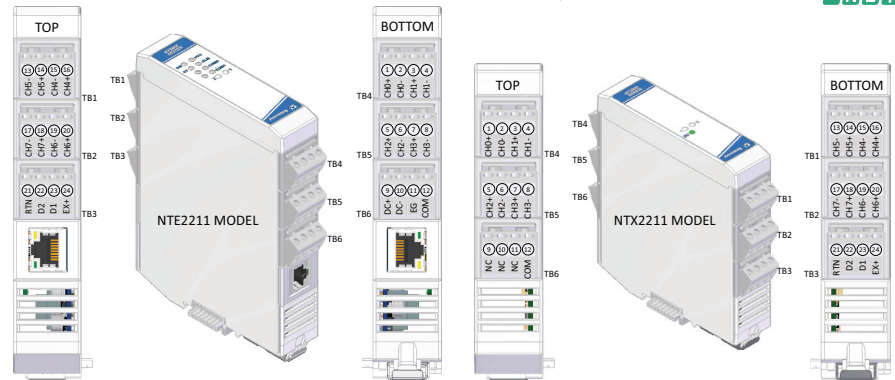


Ethernet I/O: BusWorks® NT Series

NTW000 Series: Wireless Ethernet I/O Modules



Model NT2211 Shown Above

Wi-Fi Gateway Interface ◆ IEEE 802.11 a/b/g/n ◆ Up to 100 Mbps ◆ Dual-band 2.4 GHz and 5 GHz channels

BusWorks® NTW000 modules offer a cost-effective, wireless solution for Ethernet remote I/O systems. NTW Wi-Fi models provide the protocol interface plus up to 16 I/O signal processing channels. NTX expansion modules can plug in to add extra I/O channels or a mix of signal types over a single Wi-Fi interface.

An embedded wireless IoT gateway provides a Wi-Fi interface in addition to the RJ45 Ethernet port. The omnidirectional antenna enables line of sight communication for up to 300 feet. Enterprise-grade security ensures safe and trusted networking.

Select from a variety of models providing analog or discrete I/O signal processing channels. Applications include monitoring temperature, level, flow, pressure, and other sensor types or controlling relays, motors, and other switching equipment.

An isolated RS-485 bus links up to three expansion modules to the Wi-Fi 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 temperature, current, voltage, and discrete I/O modules across the NT bus.

Key Features & Benefits

- Configured over Ethernet with web browser
- Embedded Wi-Fi IoT gateway
- Omnidirectional dipole antenna attached to R-SMA connector
- Advanced security with WPA2 Enterprise, SSLv3/TLS 1.2, and AES 256-bit encryption
- Expandable I/O capacity, up to 64 I/O channels of mixed signal types on one IP address
- Field-selectable Modbus TCP/IP, EtherNet/IP, or Profinet communication
- i2o® peer-to-peer multicast communication
- RJ45 ports enable daisy chain topology
- 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)
- RF certified (FCC, ICES, ETSI, others)
- CE compliant. UL/cUL Class 1 Div 2 and ATEX/IECEx Zone 2 approvals

* Coming soon. Consult factory for availability.

Wireless Device Configuration

Product Information

Firmware: 5.4.0.0R9
 Serial Number: 0080A3F9E6E2
 Bootloader Version: 1.3.0.0R1
 Region: United States

Network Settings

Wireless Port Status

MAC Address: 00:80:A3:F9:E6:E3
 Connection State: Connected
 Active WLAN Profile: Acromag WiFi
 Hostname:
 IP Address: 10.1.1.246/16
 Default Gateway: 10.1.1.1
 Domain:
 Primary DNS: 10.1.1.11
 Secondary DNS: 172.16.13.25

WLAN Profile Configuration

Basic

Network Name: Acromag WiFi

Security

WPAx Username: my_username
 WPAx Password: *****

Advanced

Suite: WPA2
 WPAx Authentication: 8021X
 WPAx IEEE 80211r: Enabled Disabled
 WPAx IEEE 8021X: PEAP
 WPAx Credentials:
 WPAx PEAP ver: 0
 WPAx PEAP Option: EAP-MSCHAPV2

Connect

Easily configure I/O modules using any web browser.



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Ethernet I/O: BusWorks® NT Series

NTW2000 Series: Wireless Ethernet I/O Modules

Performance Specifications

■ Ethernet Interface

Communication

Configurable for Modbus TCP/IP, EtherNet/IP, and Profinet.
10/100Mbps data rate, auto-sensing.

IP Address

Default: 192.168.0.10. Configurable static IP or DHCP.

■ 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.

■ Analog and Discrete I/O

See NTE/INTX models for I/O specifications.

■ 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

1500VAC HIPOT for 60 seconds with 250VAC/354VDC
continuous isolation between output channels/excitation
(as a group), network (each port), and input power.

Power Supply

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

Power Consumption

Depends on I/O configuration. Less than 1.36W.

Dimensions (width x height x depth)

25 x 116.9 x 139.2 mm (0.98 x 4.6 x 5.48 inches)
without antenna.

Weight

0.5 lbs (0.23 kg).

■ Wireless

Antenna

Dual band, omnidirectional, dipole antenna.
Male R-SMA connectors.

Transmission Distance

Line of sight @ 2.4 GHz: ~300ft ± 10ft (~91m ± 3m).
Line of sight @ 5 GHz: ~100ft ± 10ft (~30m ± 3m).

Wireless Standards

IEEE 802.11 a/b/g/n.

Security

WPA2 Enterprise, SSLv3/TLS 1.2, AES 256-bit Encryption.

■ 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).

Radio Equipment Certifications

FCC Part 15, Class A (self-declared DoC).
FCC Part 15, Subpart B, Class B.
FCC Part 15, Subpart C 15.247 (WLAN).

EU Radio Equipment Directive (RED)

EN 300 328 V2.1.1.
EN 301 489-1 V2.0.0.
EN 301 489-17 V3.2.0.
EN 301 893 V2.1.1.
EN 62311: 2008.
EN 62368-1: 2014.

ICES-003:2012 Issue 5, Class B.

RSS-Gen, Issue 4, 2014-11.

RSS-102, Issue 5, 2015-03.

RSS-247, Issue 2, 2017-02.

AS/NZS 4268 2017.

AS/NZS 2772.2.

ARIB STD-T66(v3.7), MIC notice 88 Appendix 43.

ARIB STD-T71(v6.1), MIC notice 88 Appendix 45.

SRRC

Ordering Information

■ Models

NTW2111-1111

Wi-Fi Ethernet I/O module with 16 discrete I/O channels
(active low input / sinking output)

NTW2121-1111

Wi-Fi Ethernet I/O module with 16 discrete I/O channels
(active high input / sourcing output)

NTW2131-1111

Wi-Fi Ethernet I/O module with 6 relay outputs and 6
discrete inputs

NTW2211-1111

Wi-Fi Ethernet I/O module with 8 differential current inputs
and 2 discrete I/O

NTW2221-1111

Wi-Fi Ethernet I/O module with 16 single-ended current
inputs

NTW2231-1111

Wi-Fi Ethernet I/O module with 8 differential voltage inputs
and 2 discrete I/O

NTW2241-1111

Wi-Fi Ethernet I/O module with 16 single-ended voltage
inputs

NTW2311-1111

Wi-Fi Ethernet I/O module with 8 current outputs

NTW2321-1111

Wi-Fi Ethernet I/O module with 8 voltage outputs

NTW2511-1111

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

NTW2512-1111

Wi-Fi Ethernet I/O module with 4 current inputs
and 4 discrete I/O

NTW2531-1111

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

NTW2532-1111

Wi-Fi Ethernet I/O module with 4 voltage inputs and
4 discrete I/O

NTW2611-1111

Wi-Fi Ethernet I/O module with 8 thermocouple/mV inputs
and 2 discrete I/O

NTW2621-1111

Wi-Fi Ethernet I/O module with 6 RTD/resistance
inputs and 2 discrete I/O



ISO9001
AS9100  MADE IN USA

NTW with NTX I/O
Expansion Module

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