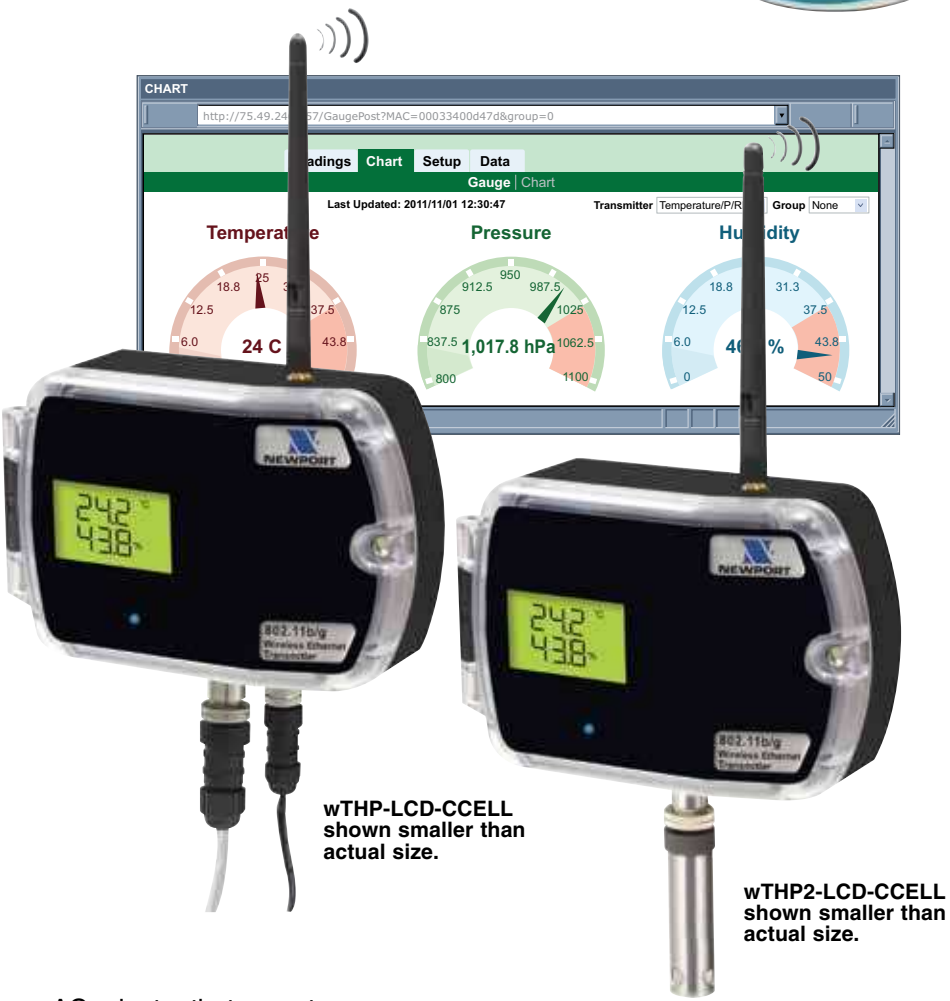
Wi-Fi Wireless Sensor System

802.11b/g Wireless Ethernet

wSeries

- **Web Server**
- **Virtual Coordinator Data Logging Software**
- **Alarms by Email or Text Message**
- **Gadgets for your Desktop**
- **Temperature**
- **Humidity**
- **Barometric Pressure**
- **Dual Thermocouple Input**
- **Analog Process Voltage and Current Inputs**
- **NEMA 4 (IP65) Enclosure**



wTHP-LCD-CCELL shown smaller than actual size.

wTHP2-LCD-CCELL shown smaller than actual size.

The new NEWPORT® **wSeries** transmitters communicate on a standard Wi-Fi network which is an ideal and economical solution for facilities with an existing Wi-Fi network as well as new installations.

Newport offers Wi-Fi transmitters for analog voltage and current, temperature from digital sensors and dual thermocouples, humidity, and barometric pressure.

Included with Wireless Sensor System is the Virtual Coordinator, a data logging software application running on a computer on the network. The "VC" collects and logs data from the transmitters and serves it to Web browsing clients.

You can view charts and graphs, monitor and record readings from virtually any type of transducer over an Ethernet network or the Internet from any computer, tablet, or smart phone with a Web browser.

The Wi-Fi transmitters are powered by your choice of batteries or AC. The battery version comes with two ordinary alkaline "C-cell" batteries that can last for 2 years depending on the frequency of readings. The AC version comes with a universal AC adaptor that operates on any voltage worldwide (110 to 240 Vac) and also includes an alkaline "AA" backup battery.

The wSeries Wi-Fi transmitters are designed for demanding industrial applications and harsh outdoor environments. The electronics are protected in a rugged weatherproof, polycarbonate NEMA 4 (IP65) rated housing.

Alarm and Email

The wSeries wireless sensor system can trigger an alarm if variables go above or below a set point that you determine. You can even set alarms to be notified by email. Alarms can be sent to a single user or to a group distribution list, including text messages to cell phones.

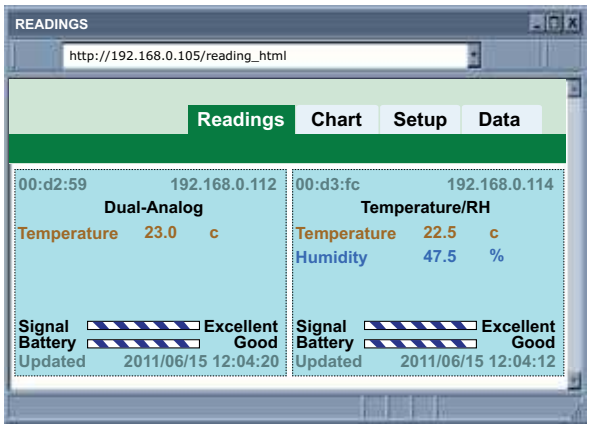
Charts and Graphs

The wSeries system serves active web pages to display real time readings and charts of analog voltage and current, temperature, humidity, and barometric pressure. You can also log data in standard data formats for use in a spreadsheet or data acquisition program such as Excel or Visual Basic.

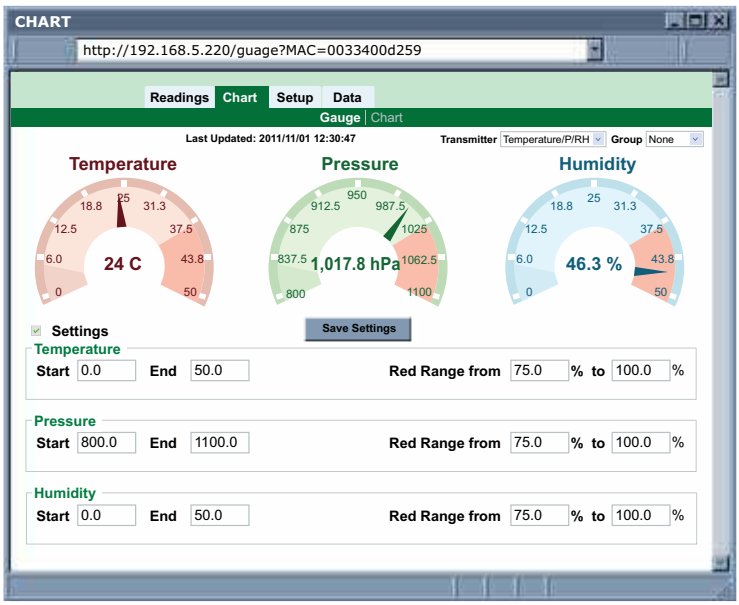
Chart scales are fully adjustable on the fly. For example, the chart can display one minute, one hour, one day, one week, one month or one year. Temperature and humidity can be charted across the full span (-40 to 125°C, and 0 to 100% RH) or within any narrow range such as (20 to 30°C). Newport offers an OPC Server software that makes it easy to integrate the wSeries wireless sensor system with many popular data acquisition and automation programs offered by OMEGA, Wonderware, iConics, Intellution, Rockwell Automation, and National Instruments, among others.

Quality and Technology

The innovative wSeries system features an extended one year warranty at no extra charge.



Readings from a web browser.



Gauge readings from a web browser

Sensor Specifications

Relative Humidity

Accuracy/Range (wTHP, wTHP2, wBTHP):
±2% for 10 to 90%;
±3% for 5 to 10% and 90 to 95%;
±4% for 0 to 5% and 95 to 100%

Hysteresis: ±1% RH

Non-Linearity: ±3%

Repeatability: ±0.1%

Resolution: 0.1%

Temperature

Accuracy/Range*

wTHP, wTHP2:
±0.5°C for 5 to 45°C (±0.9°F for 41 to 113°F); up to ±1.5°C for -40 to 5°C and 45 to 124°C (up to ±2.7°F for -40 to 41°F and 113 to 255°F)

wTP1, wTP2:
±0.5°C for 10 to 85°C (±0.9°F for 50 to 185°F); ±1°C for -40 to 10°C and 85 to 125°C (±1.8°F for -40 to 50°F and 185 to 257°F)

wBTHP:
±0.5°C for 5 to 45°C (±0.9°F for 41 to 113°F); up to ±1.5°C for -40 to 5°C and 45 to 85°C (up to ±2.7°F for -40 to 41°F and 113 to 185°F)

wBTP:
±0.8°C @ 25°C (±1.5°F @ 77°F)
±4°C for -40 to 85°C (±7.2°F for -40 to 185°F)

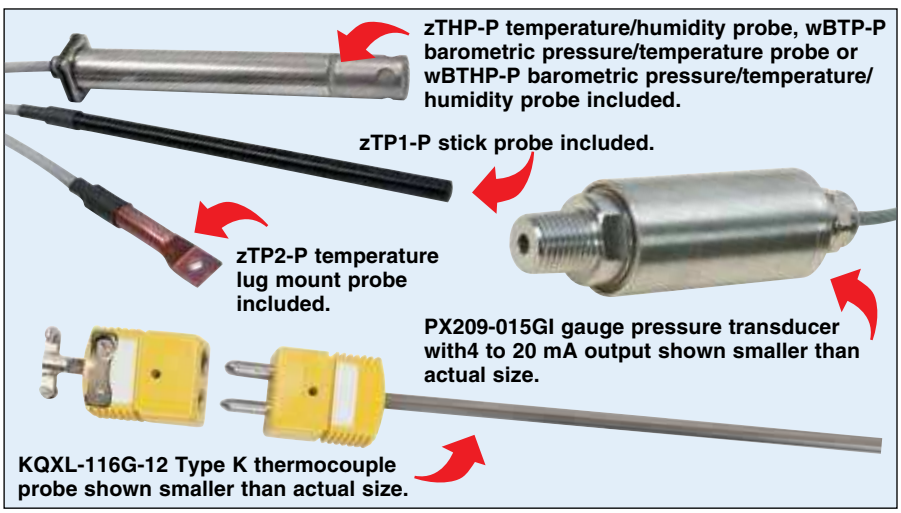
***Note:** *Extended temperature range is for external probe only.*

Resolution: 0.1°C

Barometric Pressure

Accuracy/Range*
wBTP, wBTHP:
±2 mbar for 300 to 1100 mbar @ 0 to 50°C; ±6 mbar for 300 to 1100 mbar @ -40 to 85°C)

Resolution: 0.1 mbar



Analog Voltage and Current Input (wVI)

Voltage Input: Differential; bipolar; ±100 mV, ±1 V, ±10 V

Input Impedance: 38 kΩ for voltage

Current Input: Differential; bipolar; ±20 mA (5 Ω load)

Accuracy: ±0.1% full range@ 25°C

Reading Rate: Periodic (1 sample/update) or continuous (3 samples/second)

A/D Conversion: Sigma-delta

Resolution: 16 bits

Temperature Coefficient: ±50 ppm/°C

Common Mode Rejection: 105 dB

Normal Mode Rejection: 98 dB

Warm-Up to Rated Accuracy: 30 minutes

Thermocouple Input (wTC)

Temperature Range: Refer to thermocouple chart on next page

Temperature Accuracy: Refer to thermocouple chart on next page

Temperature Stability: 0.08°C/°C

Temperature Coefficient: ±25 ppm/°C

Thermocouple Cold End Tracking: 0.1°C/°C

Thermocouple Lead Resistance: 100 Ω max

Thermocouple Type (ITS 90): J, K, T, E, R, S, B, C, N, L (DIN J)

Warm-Up to Rated Accuracy: 30 minutes

Reading Rate: Periodic (1 sample/update) or continuous (3 samples/second)

Meter Specifications

Supported Protocols Transmitter: TCP/IP, UDP, ARP, ICMP, DHCP, HTTP and FTP
Supported Protocols VC: TCP/IP, UDP, HTTP, FTP, SMTP and Telnet

Wireless Communication

Standard: IEEE 802.11 b/g / Wi-Fi
Frequency: 2.4 GHz (2402 to 2480 MHz)
Range: 60 m (200') indoor line-of-site or more depending upon sensitivity, data rate, wireless access point, and environmental considerations
Radio Power Output Level (Class 1): 91.4 mW EIRP (19.6 dBm EIRP)
Modulation:
- **802.11b Compatibility:** DSSS (CCK-11, CCK-5.5, DQPSK-2, DBPSK-1)
- **802.11g:** OFDM (default)

Channels: 1 to 13; Channel 14 for Japan use only and is not certified
Channel Spacing (Bandwidth):
Transmission Rate (over the air): 20 MHz, refer to manual
- **802.11b:** 1 to 11 Mbps
- **802.11g:** 6 to 54 Mbps

Receiver Sensitivity: -85 dBm, typ.

Power (wSeries AC Power)

Power Input: 5 Vdc
Consumption: 0.7 W max
AC Power Adaptor (Safety Qualified):
- **Nominal Output:** 5 Vdc @ 0.6 A
- **Input:** 100 to 240 Vac, 50/60 Hz

Back-Up Alkaline Battery: One “AA” 1.5 Vdc (included)

Power (wSeries-CCELL)

Alkaline Battery: 2 “CCELL” 1.5 Vdc (included)
Lifetime: Estimate of 4.3 year with frequency of 1 reading per 2 minutes (see chart this page)

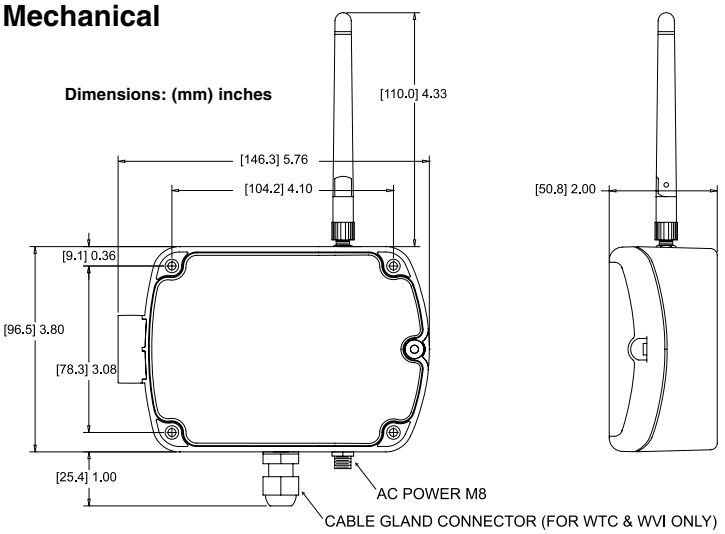
Enclosure Packaging

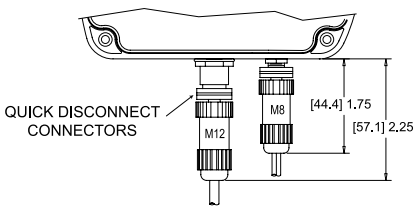
Material: Polycarbonate
Protection: NEMA 4 (IP65) rated housing
Dimensions: 96.5 H x 146.3 W x 50.8 mm D (3.8 x 5.76 x 2"), not including connectors or antenna

General

Approvals: FCC Part 15C; CE EMC; 2004/108/EC, LVD 2006/95/EC, R&TTE 1999/5/EC
Operating Temperature: -10 to 55°C (14 to 131°F), 90% RH non-condensing

Mechanical





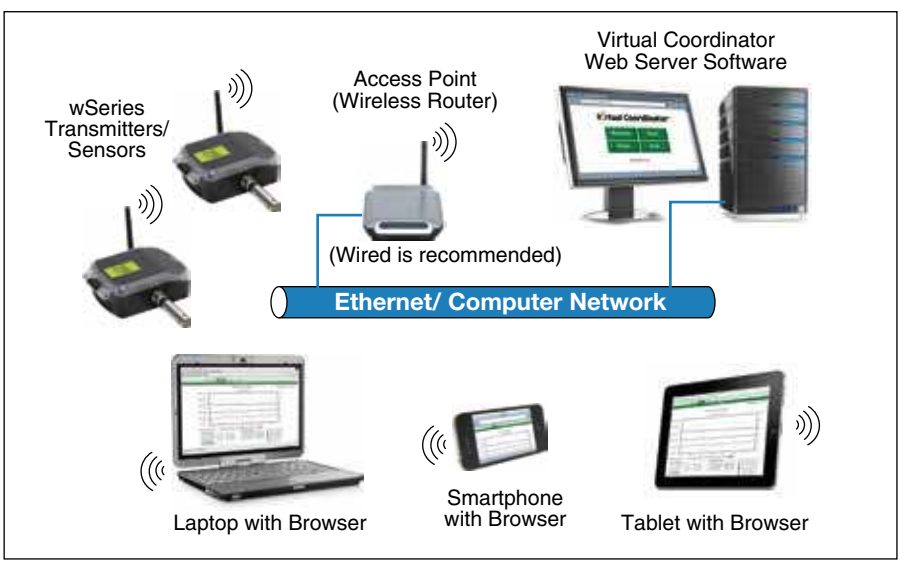
Safety qualified universal AC power adaptor included.

Thermocouple Chart	
Input type	
J	Iron - Constantan
K	CHROMEGA®- ALOMEGA®
T	Copper - Constantan
E	CHROMEGA® - Constantan
R	Pt / 13%Rh-Pt
S	Pt / 10%Rh-Pt
B	30%Rh-Pt / 6%Rh-Pt
C	5%Re-W / 26%Re-W
N	Nicrosil - Nisil
L	J DIN

ESTIMATED ALKALINE BATTERY LIFETIME

Update Rate	C Cell Units	AA Back-Up/AC Units
Continuous* (wTC, wVI)	2 weeks	2 days
10 seconds	9.6 to 20.5 months	4 weeks
1 minute	2.4 to 7 years	3.6 to 9.6 months
2 minutes	4.3 to 7 years	6 months to 1.5 years

** Power save mode.*
***Important:** Battery life is dependent on environmental conditions and transmitter settings.*



Gadgets
Another way to display your data is by using our gadget feature. This is a convenient way to view your process without keeping a web browser open, and you can display multiple IP addresses. The values are always visible while you are working on your other computer tasks. It will automatically start when you restart your computer.

Visit newportUS.com/wseries and download the gadget from the software section.

To Order *Visit newportUS.com/wseries for Pricing and Details*	
Model No.	**Description**
wTP1-LCD	Temperature sensor with stick probe, AC powered, LCD display
wTP2-LCD	Temperature sensor with lug mount probe, AC powered, LCD display
wTHP-LCD	Temperature and humidity sensor, AC powered, LCD display
wTHP2-LCD	Temperature and humidity sensor, short probe, AC powered, LCD display
wBTHP-LCD	Barometric pressure, temp and humidity sensor, AC powered, LCD display
wBTP-LCD	Barometric pressure and temperature sensor, AC powered, LCD display
wTC-LCD	Dual thermocouple inputs, AC powered, LCD display
wVI-LCD	Analog input, AC powered, LCD display
wTP1-LCD-CCELL	Temperature sensor with stick probe, battery powered, LCD display
wTP2-LCD-CCELL	Temperature sensor with lug mount probe, battery powered, LCD display
wTHP-LCD-CCELL	Temperature and humidity sensor, battery powered, LCD display
wTHP2-LCD-CCELL	Temperature and humidity sensor, short probe, battery powered, LCD display
wBTHP-LCD-CCELL	Barometric pressure, temp and humidity sensor, battery powered, LCD display
wBTP-LCD-CCELL	Barometric pressure and temperature sensor, battery powered, LCD display
wTC-LCD-CCELL	Dual thermocouple inputs, battery powered, LCD display
wVI-LCD-CCELL	Analog input, battery powered, LCD display
Replacement Probes	
zTP1-P	External stick probe with temperature sensor, 3 m (10') cable
zTP2-P	External lug mount probe with temperature sensor, 3 m (10') cable
zTHP-P	External industrial probe with temperature and humidity sensor, 3 m (10') cable
zTHP2-P	External short industrial probe with temperature and humidity sensor
wBTP-P	External industrial probe with barometric pressure, temperature sensor, 3 m (10') cable
wBTHP-P	External industrial probe with barometric pressure, temp and humidity sensor, 3 m (10') cable

Calibration for New Units	**Description**
CAL-3-HU	NIST traceable calibration certificate; three humidity points: 25%, 50%, 75%, and one temperature point of 25°C (for new units)
CAL-3-HU-P-T	NIST traceable calibration certificate; three humidity, barometric pressure, and temperature points (for new units)
CAL-3-P	NIST traceable calibration certificate; three barometric pressure points, and one temperature 25°C (for new units)
CAL-3-T	NIST traceable calibration certificate, three temperature points (for new units)
CT485B-CAL-KIT	Calibration kit, 33% and 75% RH standards

Comes complete with 2 "CCELL" batteries or AC power adaptor, and "AA" backup battery.
Ordering Example: *Two* ***wTP1-LCD,*** *wireless transmitters with LCD, AC power and external temperature sensor with 3 m (10') cable, and two* ***CAL-3-T****, NIST traceable calibration certificates;* ***zTP1-CAL-3-T****, a calibrated replacement probe including calibration certificate.*
Note: *Two type K thermocouples with 1 m of 24 AWG PFA insulated wire with stripped lead termination included with WTC models.*