

WIRELESS TRANSMITTERS AND RECEIVERS



Wi-Fi Wireless Sensor System 802.11b/g Wireless Ethernet

wSeries



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



wTP1-CCELL shown smaller than actual size.

wTHP2-LCD-CCELL shown smaller than actual size.

The new OMEGA® 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.

OMEGA 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.

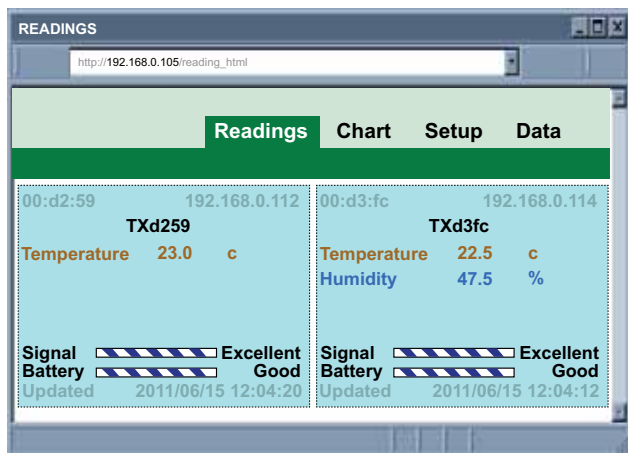
Chart scales are fully adjustable on the fly. For example, the chart can display one minute, one hour, one day, one week, one month or one year. Temperature and humidity can be charted across the full span (-40 to 125°C, and 0 to 100% RH) or within any narrow range such as (20 to 30°C). OMEGA offers 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

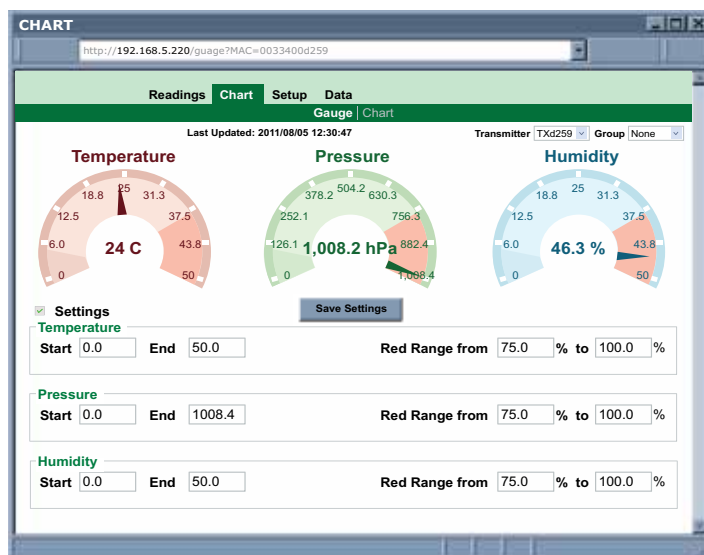
The innovative wSeries system features an extended one year warranty at no extra charge.



WIRELESS TRANSMITTERS AND RECEIVERS



Readings from web browser.



Gauge readings from web browser.

Specifications

RELATIVE HUMIDITY

wTHP, wTHP2, wBTHP Accuracy/Range: $\pm 2\%$ for

10 to 90%; $\pm 3\%$ for 5 to 10% and 90 to 95%; $\pm 4\%$ for 0 to 5% and 95 to 100%

Hysteresis: $\pm 1\%$ RH

Non-Linearity: $\pm 3\%$

Repeatability: $\pm 0.1\%$

Resolution: 0.1%

TEMPERATURE

Accuracy/Range*:

wTHP, wTHP2: $\pm 0.5^\circ\text{C}$ for 5 to 45°C ($\pm 0.9^\circ\text{F}$ for 41 to 113°F); up to $\pm 1.5^\circ\text{C}$ for -40 to 5°C and 45 to 124°C (up to $\pm 2.7^\circ\text{F}$ for -40 to 41°F and 113 to 255°F)

wTP1, wTP2: $\pm 0.5^\circ\text{C}$ for 10 to 85°C ($\pm 0.9^\circ\text{F}$ for 50 to 185°F); $\pm 1^\circ\text{C}$ for -40 to 10°C and 85 to 125°C ($\pm 1.8^\circ\text{F}$ for -40 to 50°F and 185 to 257°F)

wBTHP: $\pm 0.5^\circ\text{C}$ for 5 to 45°C ($\pm 0.9^\circ\text{F}$ for 41 to 113°F); up to $\pm 1.5^\circ\text{C}$ for -40 to 5°C and 45 to 85°C (up to $\pm 2.7^\circ\text{F}$ for -40 to 41°F and 113 to 185°F)

wBTP: $\pm 0.8^\circ\text{C}$ @ 25°C ($\pm 1.5^\circ\text{F}$ @ 77°F) $\pm 4^\circ\text{C}$ for -40 to 85°C ($\pm 7.2^\circ\text{F}$ for -40 to 185°F)

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

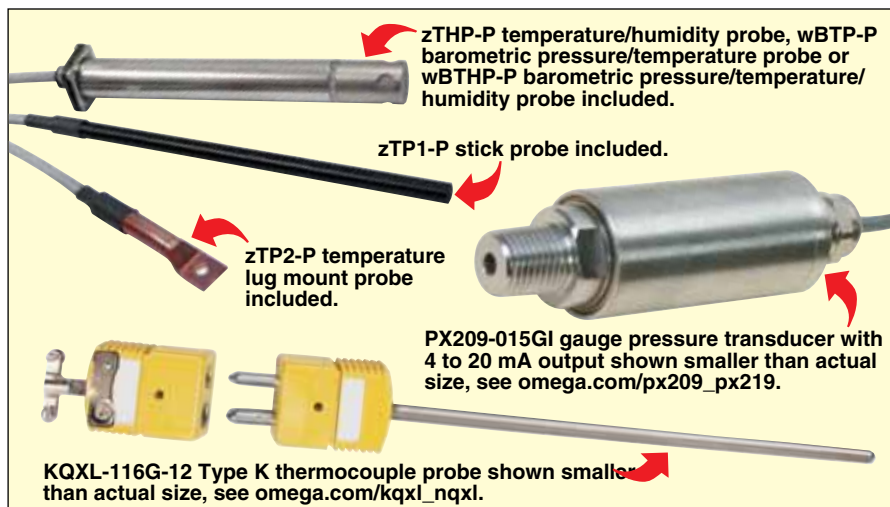
Resolution: 0.1°C

BAROMETRIC PRESSURE

wBTP, wBTHP Accuracy/Range:

± 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 k Ω for voltage

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

Accuracy: $\pm 0.1\%$ 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/ $^\circ\text{C}$

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: $0.08^\circ\text{C}/^\circ\text{C}$

Temperature Coefficient: ± 25 ppm/ $^\circ\text{C}$

Thermocouple Cold End

Tracking: $0.1^\circ\text{C}/^\circ\text{C}$

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: Up to 100 m (330') depending
upon environmental considerations

**Radio Power Output Level
(Class 1):** 20 dBm

Modulation:

802.11b Compatibility: DSSS
(CCK-11, CCK-5.5, DQPSK-2,
DBPSK-1)

802.11g: OFDM (default)

Channels: 1 to 14

Channel Interval: 5 MHz

Transmission Rate (Over the Air):

802.11b: 1 to 11 Mbps

802.11g: 6 to 54 Mbps

Receiver Sensitivity: -85 dBm, typ

POWER

Power Input

wVI: 9 Vdc

All Others: 5 Vdc

Consumption

wVI: 1.3 W max

All Others: 0.7 W max

AC Power Adaptor

(Safety Qualified):

Nominal Output: 5 Vdc @ 0.6 A

Nominal Output (wVI): 9 Vdc @ 0.5 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:

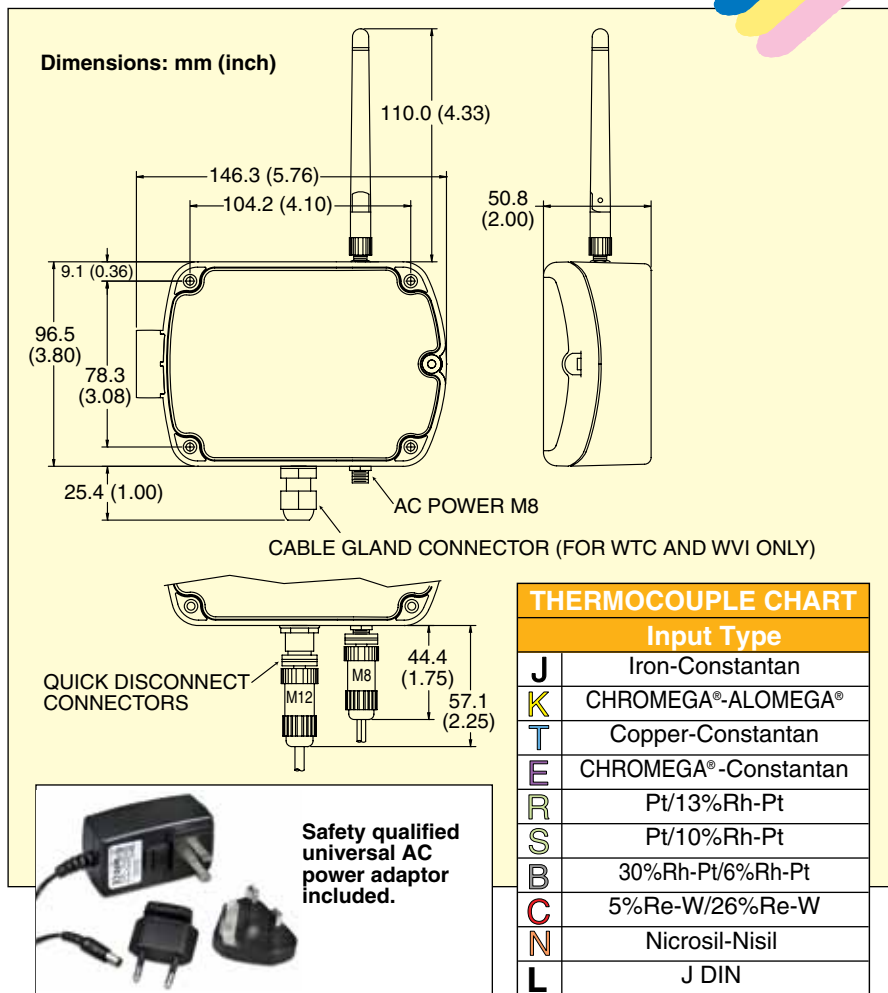
96.5 H x 146.3 W x 50.8 mm D
(3.8 x 5.76 x 2"), not including
connectors or antenna

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

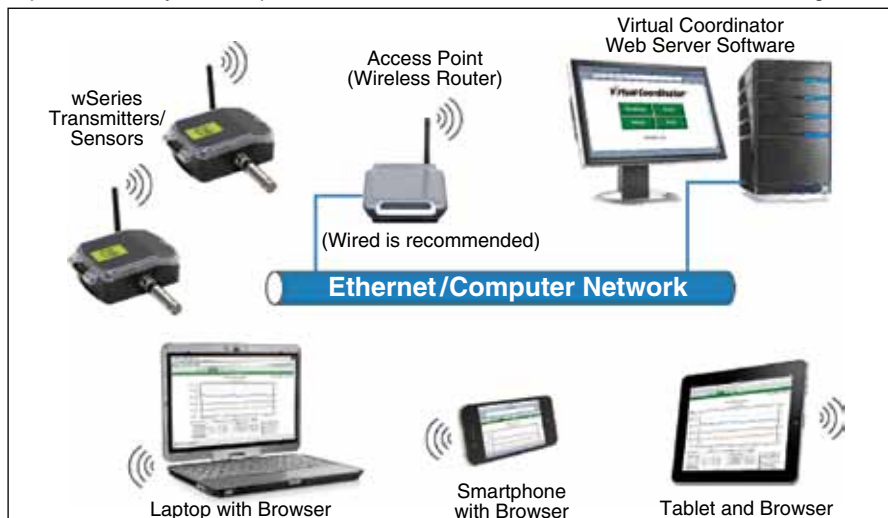


ESTIMATED ALKALINE BATTERY LIFETIME

Update Rate	C Cell Units	AA Back-Up/AC Units
Continuous* (wTC, wVI)	2 weeks	2 days
10 seconds* (default)	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.





WIRELESS TRANSMITTERS AND RECEIVERS

To Order Visit omega.com/wseries for Pricing and Details

Model No.	Description
wTP1	Temperature sensor with stick probe, AC powered
wTP2	Temperature sensor with lug mount probe, AC powered
wTHP	Temperature and humidity sensor, AC powered
wTHP2	Temperature and humidity sensor, short probe, AC powered
wBTHP	Barometric pressure, temp and humidity sensor, AC powered
wBTP	Barometric pressure and temperature sensor, AC powered
wTC	Dual thermocouple inputs, AC powered
wVI	Analog input, AC powered
wTP1-CCELL	Temperature sensor with stick probe, battery powered
wTP2-CCELL	Temperature sensor with lug mount probe, battery powered
wTHP-CCELL	Temperature and humidity sensor, battery powered
wTHP2-CCELL	Temperature and humidity sensor, short probe, battery powered
wBTHP-CCELL	Barometric pressure, temp and humidity sensor, battery powered
wBTP-CCELL	Barometric pressure and temperature sensor, battery powered
wTC-CCELL	Dual thermocouple inputs, battery powered
wVI-CCELL	Analog input, battery powered
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	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	
CAL-3-HU	NIST traceable calibration certificate, 3 humidity points: 25%, 50%, 75%, 1 temperature point 25°C (for new units)
CAL-3-HU-P-T	NIST traceable calibration certificate, 3 humidity, barometric pressure, and temperature points (for new units)
CAL-3-P	NIST traceable calibration certificate, 3 barometric pressure points and one temperature 25°C (for new units)
CAL-3-T	NIST traceable calibration certificate, 3 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 certificate.