

Long Distance Industrial **Wireless** Transmitters and Receivers

Up to 450 m (1500') Line of Sight Range

UWXL Series



UWXL-24-TC shown smaller than actual size.

- ✓ Thermocouple, RTD, Infrared Temperature, RH, pH, Process Voltage/Current and Input Models
- ✓ J, K, T, E, R, S, B, and N Thermocouples
- ✓ 385 and 392 Pt100 RTD Probes
- ✓ IP68 Rated Enclosure—Dust- and Water-Tight
- ✓ Free Software Converts Your PC Into a Multi-Channel Chart Recorder or Data Logger
- ✓ Compatible with Both UWTC-REC and UWTC-REC-NEMA Wireless Receivers
- ✓ Long Battery Life



Dust- and Water-Tight

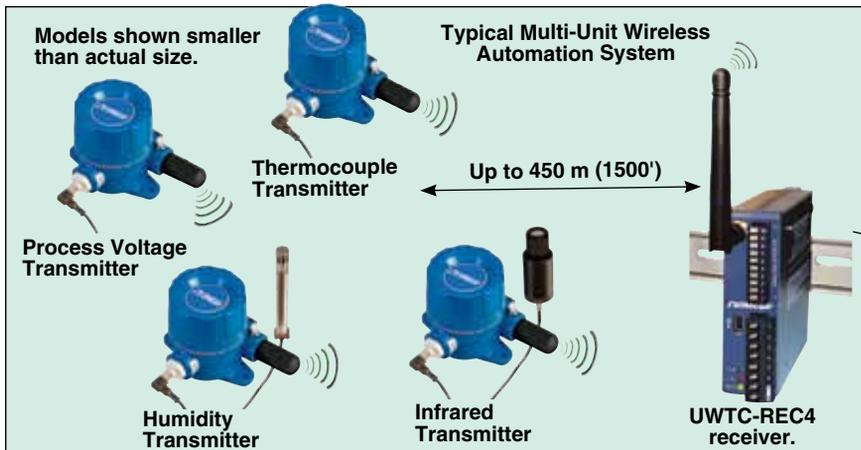
IP68 Enclosure

The UWXL Series industrial wireless transmitters from OMEGA offer unparalleled flexibility for process measurement applications. Capable of ranges to 450 m (1500') line of sight (LOS), the UWXL transmitters are designed for a variety of applications, including temperature, infrared temperature, relative humidity, process transducers with standard voltage or current outputs, as well as pH. Thermocouple models are user-configurable for

any of 9 calibrations, while RTD units are compatible with both 0.00385 and 0.00392 curve Pt100 sensors. UWXL transmitters are programmable to transmit data at intervals configurable from once every 2 seconds to every 2 minutes. Transmitted data includes the process measurement along with the ambient temperature, RF signal strength and battery condition. Software provided with each model can display this information in real time. This free software allows you to use your PC as a multi-channel meter, recorder or data logger; data can also be exported to a standard

spreadsheet file.

UWXL transmitters are compatible with a wide variety of OMEGA wireless receivers. UWTC-REC receivers are available with optional analog output, alarms and display, while the UWTC-REC-NEMA receivers add a NEMA rated enclosure. Receivers can accept up to 48 transmitters. Receivers with analog outputs can also retransmit data through a wired connection, as an analog voltage, current or thermocouple signal, to interface with a controller, PLC or data acquisition interface.



Transmitter model
UWXL-24-RH-RPI.

Humidity/temperature
sensor included.



UWXL-RH features a detachable combination humidity/temperature sensor that can be remotely mounted.



Temperature transmitter models
UWXL-TC-24, UWXL-RTD.

Thermocouple and RTD models feature screw terminal connections that allow you to connect a wide range of sensors and probes. Models with integral probes are available contact factory.

Transmitter model
UWXL-IR-1.

Infrared
sensor head
included.



UWXL-IR-1 features a remotely mounted sensor head to measure non-contact infrared temperature.

Common Specifications

Computer Interface: USB

Transmit Sample Rate: Programmable from 2 second to 120 second

Radio Frequency (RF) Transceiver

Carrier: ISM 2.4 GHz, direct sequence spread spectrum, (2.450 to 2.490 GHz—12 RF channels)

RF Output Power: 18 dBm (63 mW)

Range of RF Link: Up to 450 m (1500') outdoor line of sight; up to 90 m (300') indoor/urban

RF Data Packet Standard: IEEE 802.15.4, open communication architecture

Software (Included Free): Requires Windows® 2000, XP or Vista (32 bit) operating system

Power: One 3.6V, Lithium C Cell (included)

Battery Life (Typical): 3 years; at 1 sample/minute reading rate @ 25°C

Operating Temperature: -10 to 70°C (14 to 158°F)

Storage Temperature: -40 to 80°C (-40 to 176°F)

Model UWXL-24-TC

Input: J, K, T, E, R, S, B, C or N thermocouple, software selectable

Measurement Range:

J: -100 to 760°C (-148 to 1400°F)

K: -100 to 1260°C (-148 to 2300°F)

T: -200 to 400°C (-328 to 752°F)

E: -200 to 1000°C (-328 to 1832°F)

R: 260 to 1760°C (500 to 3200°F)

S: 260 to 1760°C (500 to 3200°F)

B: 870 to 1820°C (1598 to 3308°F)

C: 0 to 2315°C (32 to 4200°F)

N: -100 to 1260°C (-148 to 2300°F)

Accuracy @ 25°C:

Types J and K: ±0.5% rdg or ±1.0°C (1.8°F), whichever is greater

Types T, E, and N: ±0.5% rdg or ±2.0°C (3.6°F), whichever is greater

Types R, S, B and C: ±0.5% FS

Resolution: 1°C/1°F

Sensor Connection: Screw terminals

Model UWXL-24-RTD

Input: Pt100 RTD; 0.00385 or 0.00392 curve, software selectable

Measurement Range:

Pt100, 0.00385: -200 to 850°C (-328 to 1562°F)

Pt100, 0.00392: -100 to 457°C (-148 to 854°F)

Accuracy: ±0.5°C (1.0°F)

Resolution: 1°C/1°F

Sensor Connection: Screw terminals

Model UWXL-24-IR-1

Temperature Range: -18 to 538°C (0 to 1000°F)

Accuracy: ±2% rdg or 2.2°C (4°F), whichever is greater; @ 22°C (72°F) ambient temperature and emissivity ≥0.95

Optical Field of View: 6:1 (distance/spot size)

Sensor Head Cable Extension: Up to 15 m (50') total

Repeatability: ±1% rdg

Spectral Response: 5 to 14 microns

Response Time: 100 ms (0 to 63% of final value)

Emissivity: 0.1 to 1.00, adjustable

Operating Ambient:

Sensor Head: 0 to 70°C (32 to 158°F)

Sensor Head (-HT Model): 0 to 85°C (32 to 185°F)

Sensor head with OS100-WC (Water Cooling Jacket): 0 to 200°C (32 to 392°F)

Relative Humidity: Less than 95% RH, non-condensing

OS100-WC Water Flow Rate:

0.25 GPM, room temperature

Thermal Shock: About 30 minute for 25°C (77°F) abrupt ambient temperature change

Warm-Up Period: 3 minutes

OS100-AP Air Flow Rate: 1 CFM (0.5 L/s) (1 x 2.5")

OS100-LA Laser Sight

Accessory

Wavelength (Color): 630 to 670 nm (red)

Operating Distance (Laser Dot): Up to 9.1 m (30')

Max Output Optical Power: Less than 1 mW @ -6°C (22°F) ambient temperature

European Classification: Class 2, EN60825-1/11.2001

Max Operating Current: 45 mA @ 3 Vdc

FDA Classification: Complies with 21 CFR 1040.10, Class II laser product

Beam Diameter: 5 mm (0.20")

Beam Divergence: <2 mrad

Operating Ambient: 0 to 50°C (32 to 122°F); <95% RH, non-condensing

Power Switch: On/off slide switch on the battery pack

Power Indicator: Red LED

Power: Battery pack, 3 Vdc (consists of two 1.5 Vdc "AA" lithium batteries, included)

All models shown smaller than actual size.



UWXL-PC Transmitter.

Process Input model UWXL-24-PC features M12 connection that allows you to connect a wide range sensors or transducers that have voltage or current output.



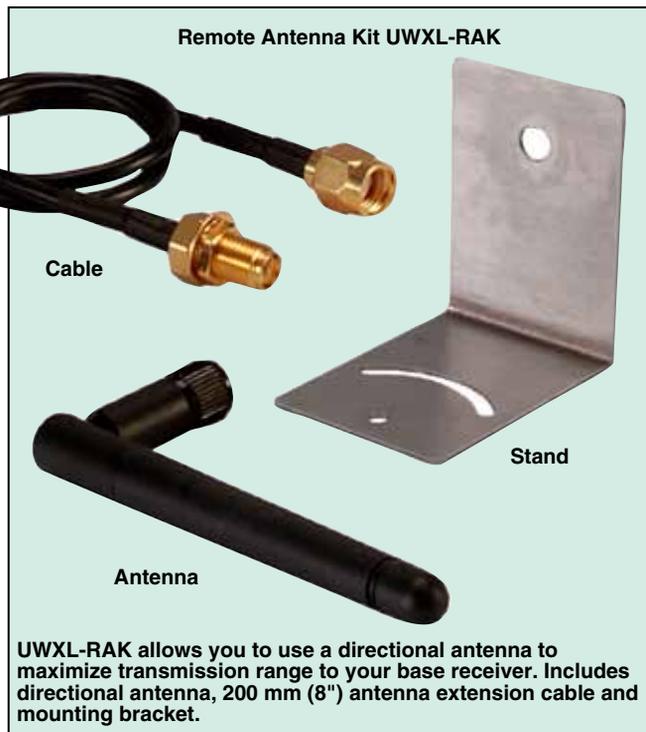
UWTC-REC1-NEMA Receiver.

UWTC-REC1-NEMA is mounted in a water tight, Polycarbonate/ABS IP68 rated enclosure. This unit will receive data from up to 48 transmitters and is powered directly by the USB connection on your computer (no analog output provided).



UWTC-REC2-D-NEMA Transceiver.

UWTC-REC2-D-NEMA is mounted in a water tight, Polycarbonate/ABS IP68 rated enclosure. This unit will receive data from up to 48 transmitters and provides a local displayed reading and a wired retransmission analog output.



Remote Antenna Kit UWXL-RAK

Cable

Stand

Antenna

UWXL-RAK allows you to use a directional antenna to maximize transmission range to your base receiver. Includes directional antenna, 200 mm (8") antenna extension cable and mounting bracket.

Model UWXL-24-PC

Input: 0 to 1 Vdc, 0 to 5 Vdc, 0 to 10 Vdc, 0 to 20 A, 4 to 20 mA
Accuracy: ±0.1% FS @ 25°C
Resolution: 12 to 15 bit
Connection: M12

Model UWXL-24-RH

Temperature
Range: -17 to 49°C (2 to 120°F)
Accuracy: ±1°C (±1.8°F) @ 25°C
Resolution: 1°C/1°F
Relative Humidity
Range: 2 to 98% RH
Accuracy: ±2.5% RH from 20 to 80% RH; ±3.5% RH <20 and >80% RH @ 25°C (76°F)
Resolution: 1% RH

Model UWXL-24-PH

pH Input:
Range: 0 to 14 pH
Accuracy: ±0.1 pH @ 25°C
Resolution: 0.01 pH
Response Time: 2 s
Input Connection: BNC
Temperature Compensation: Automatic, 0 to 100°C (32 to 212°F)
RTD Temperature Input:
Type: Pt100 Ω RTD, 0.00385 curve
Range: 0 to 100°C (32 to 212°F)
Accuracy: ±1°C (1.8°F)
Resolution: 0.1°
Input Connection: Screw terminals

Connect a Wireless Receiver to Your Computer, PLC or Data Logger to Form a Complete **Wireless** System!



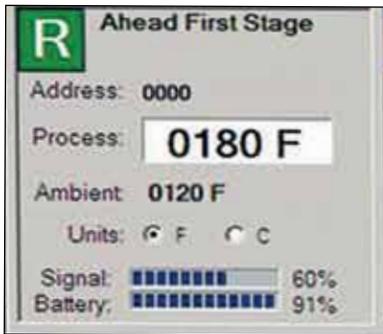
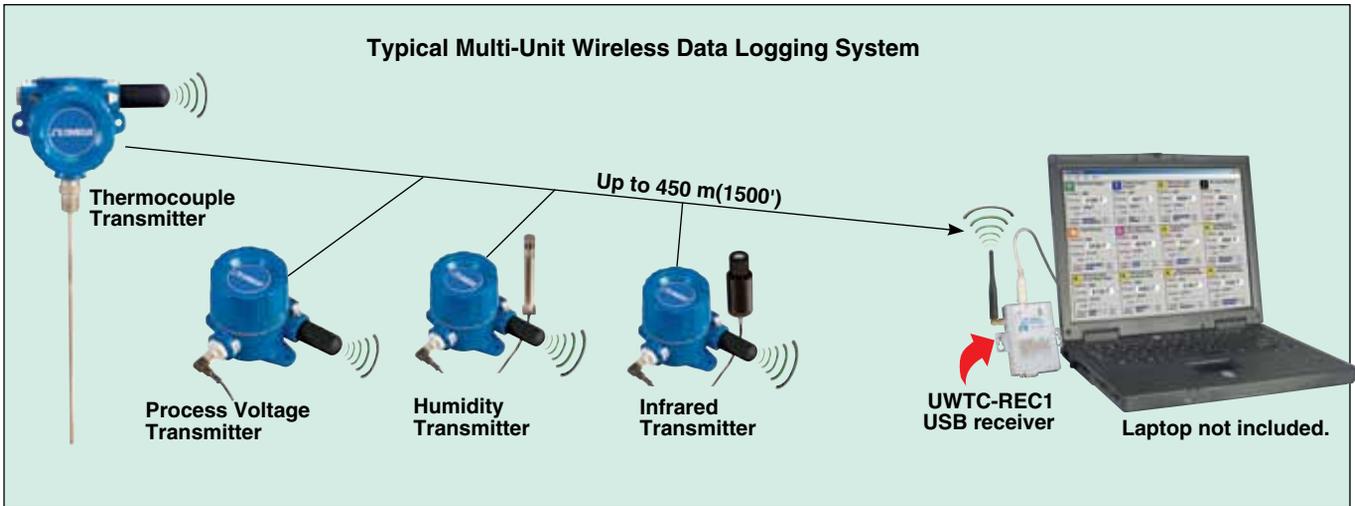
UWTC-REC1 will receive data from up to 48 transmitters and is powered directly by the USB connection on your computer (no analog output provided).

UWTC-REC2-D will receive data from up to 48 transmitters. This model provides a displayed reading and a retransmitted, hard wired analog output for 1 user selected transmitter in your system. Requires DC power adaptor (included).

UWTC-REC3 receiver/host with ethernet is compatible with UWTC, UWRTD, UWRH and UWIR transmitters and connects directly to your network or the Internet—no PC.

UWTC-REC4 will receive data from up to 48 transmitters. This model provides a scalable retransmitted, hard wired analog output for 4 user selected transmitters in your system. Requires 12 to 24 Vdc power supply.

All models shown smaller than actual size.



Monitor up to 48 different wireless transmitters, simultaneously on your PC. Display shows process reading, signal strength and battery level in real-time.

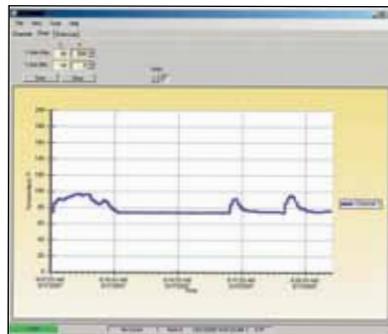
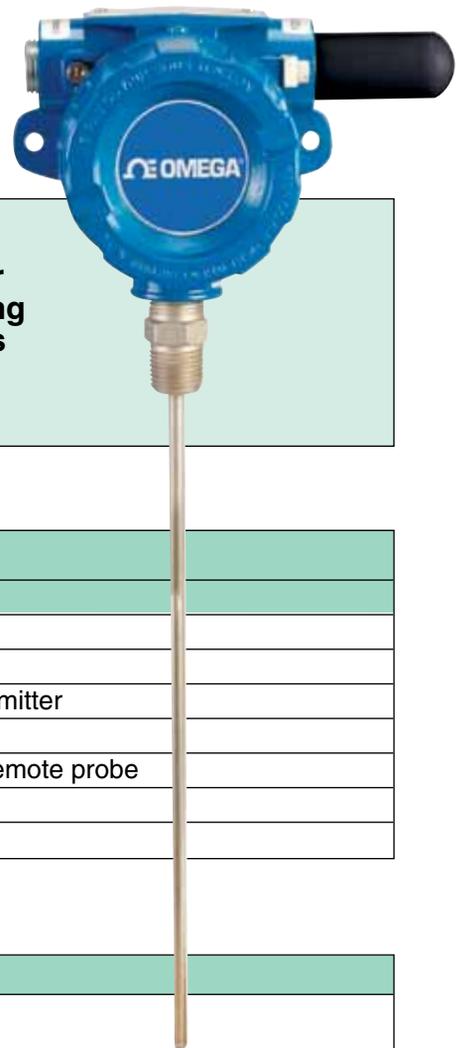


Chart up to 48 different wireless transmitters, simultaneously on your PC.

| Time | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 2 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 3 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 4 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 5 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 6 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 7 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 8 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 9 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 10 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 11 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 12 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 13 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 14 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 15 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Collect and log data for up to 48 different wireless transmitters at the same time. Record, save or download to a spreadsheet up to 32 thousand individual readings.



UWXL temperature models with integral thermocouple or RTD probes are also available. Contact OMEGA for pricing and availability. For the latest features and specifications visit us online.

To Order

| Model No. | Description |
|-----------------------|---|
| UWXL-24-TC | Wireless thermocouple transmitter |
| UWXL-24-RTD | Wireless RTD (Pt100) transmitter |
| UWXL-24-PC | Wireless process voltage and current input transmitter |
| UWXL-24-IR-1 | Wireless infrared temperature transmitter |
| UWXL-24-RH-RPI | Wireless humidity/temperature transmitter with remote probe |
| UWXL-24-PH | Wireless pH/temperature transmitter |
| UWXL-RAK | Remote antenna kit |

Receivers/Accessories

| Model No. | Description |
|------------------------------------|---|
| UWTC-REC1 | 48-channel wireless USB powered receiver (no analog output or alarms) |
| UWTC-REC2-(*) | 48-channel wireless receiver with 1-channel analog output and alarms |
| UWTC-REC2-D-(*) | 48-channel wireless receiver with 1-channel analog output, alarms and display |
| UWTC-REC3 | 32-channel wireless receiver/host with ethernet (Thermocouple, RTD, RH and IR models only) |
| UWTC-REC4-(*) | Wireless DIN-rail receiver with 4-channel analog output, and alarms |
| UWTC-CB12 | 12-channel USB control box with 12 form "C" relays |
| UWTC-BATT-C | Replacement battery, 3.6V, lithium "C" cell assembly |
| PHE-1311 | Gel-filled pH electrode, general purpose |
| PRTF-10-2-1000-1/8-6-E-TA3F | Pt1000 RTD probe, 1/8" diameter, 6" L, with wire, 12 m (40') PFA insulated cable with connector |
| OS100-MB | Sensor head mounting bracket for UWXL-24-IR-1 |
| OS100-AP | Sensor head air purge collar for UWXL-24-IR-1 |
| OS100-WC | Sensor head water cool jacket, up to 200°C (392°F) for UWXL-24-IR-1 |
| OS100-LS | Laser sighting accessory for UWXL-24-IR-1 |

* Specify analog output "V1" for 0 to 5 Vdc; "V2" for 0 to 10 Vdc, "MA" for 4 to 20 mA or "TC" for type K thermocouple signal.

Comes complete with measurement/charting/data logging software, 3.6V lithium battery and operator's manual. UWTC-REC2 units also include DC power adaptor.

Ordering Examples: **UWXL-24-TC**, wireless thermocouple transmitter, **UWTC-REC1**, 48-channel USB receiver, and **UWTC-BATT-C**, spare battery.

UWXL-24-IR-1, wireless infrared temperature transmitter, **OS100-MB**, sensor head mounting bracket, **UWTC-REC4-MA**, 48-channel receiver with 4 to 20 mA analog output, and **UWTC-BATT-C**, spare battery.

UWXL-24-RH-RPI, wireless humidity/temperature transmitter, **UWXL-24-PC**, wireless process input transmitter, **UWTC-REC2-D-MA** 48-channel receiver with 4 to 20 mA analog output.