

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair or calibration,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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Mounting Cont'd.

To install the DIN Rail Mounting Bracket accessory (UWM-DINRAIL) you must first remove the one screw located on the lid of the enclosure. This will allow you access to the mounting holes.

Place all four #4-40 screws with threaded standoffs into each mounting hole. Screw on the DIN Rail Mounting Bracket sub assembly including the DIN Rail Adaptors to the bottom of the enclosure using the #4-40 screws.

Close the unit by threading the one screw located on the lid of the enclosure to the bottom enclosure.

Input Connections

For input connections, refer to the Main Transmitter Board/ Input Connections diagram.

Battery Replacement

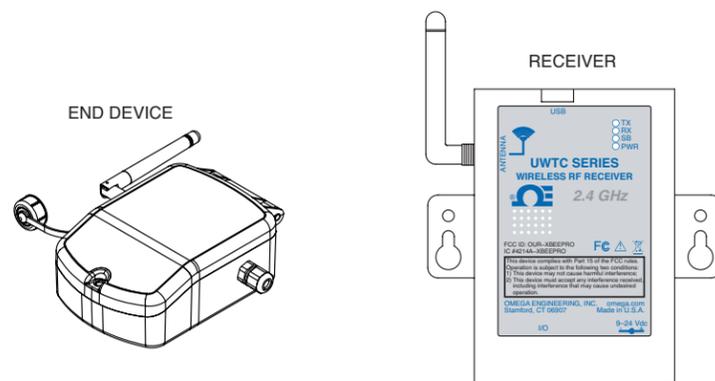
To install or replace the battery in your device you must first loosen the one screw located on the lid of the enclosure. This will allow you to access the battery compartment.

Your device is equipped with a "C" size lithium power cell assembly. To install a replacement battery assembly follow steps outlined here.

- A. Remove the old power cell from the battery holder.
- B. Install your new battery assembly into the housing in the same position as the old battery was located.
- C. Installation complete.

System Operation

A basic wireless TC system is comprised of only two main components; a signal conditioner with a built-in battery powered 2.4 GHz radio transmitter (End Device), and a USB powered 2.4 GHz radio receiver.



End Device/Receiver

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NOTE:

Up to 48 end devices can be used with one receiver.

Transmit Rate vs. Battery Life

Many factors such as ambient temperature conditions and transmitting rate can have a large effect on the life of the battery used in your end device. Transmitting data places a large demand on the battery in your unit. The transmit rate is the single most contributing factor in the life of your battery. The slower the transmit rate you set, the longer the battery in your device will last. The table below gives some estimates on how long the battery should last vs. the transmit rate you selected when you setup your end device and under normal operating conditions.

Transmission Interval	Battery Life (Months)
2 Seconds	4
10 Seconds	7.5
30 Seconds	16.5
60 Seconds	30

Specifications

Available Thermocouple Input Types:

J, K, T, E, R, S, B, C or N

Thermocouple 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)

QUICK START

For complete product manual:
www.omega.com/manuals/manualpdf/M5044-TC.pdf



UWTC-2A-NEMA

Weather Resistant Temperature-To-Wireless Transmitter for Thermocouples

OMEGA

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For Other Locations Visit omega.com/worldwide

It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

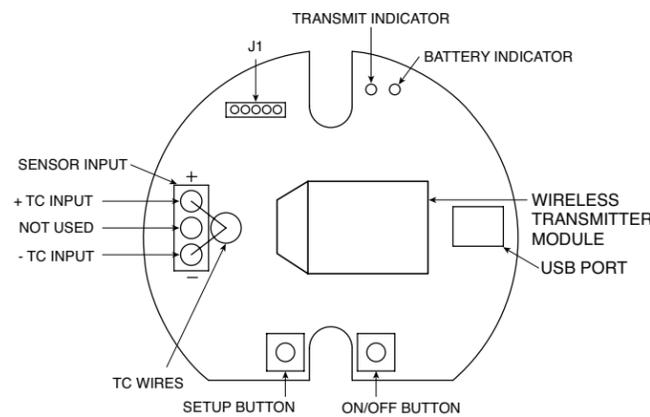
WARNING: These products are not designed for use in, and should not be used for, human applications.

Using This Quick Start Manual

Use this Quick Start Manual with your UWTC-2A-NEMA Temperature-to-Wireless Transmitter for easy installation and basic operation. For detailed information, refer to the User's Guide (Manual # M5044).

General Description

The UWTC-2A-NEMA Temperature-to-Wireless Transmitters features a stand-alone, compact, battery powered NEMA rated design that transmits measurements back to a host receiver up to 120m (400') away. When activated the wireless transmitter will transmit readings continuously at a pre-set time interval that was programmed by the user during the initial setup. Each unit measures and transmits: Measured Temperature, Ambient Temperature, RF Signal Strength and Battery Condition to the receiver and is displayed on your PC screen in real time.



Main Transmitter Board/Input Connections

Software Installation

System Minimum Requirements:

- Pentium Class processor
- Hard Drive Space: 210 MB
- RAM: 256 MB
- 1 Available USB Port
- 1 CD-ROM Drive
- Windows 2000, XP, Vista, 7

Insert the TC-Central User CD that was included with your receiver unit into the CD-ROM drive of your PC. Your system should begin the installation process automatically.

The "Welcome to the TC Central Setup Wizard" screen should be visible on your computer screen. The installer will guide you through the steps required to install TC Central on your computer.

Device Configuration

First, connect the provided USB cable to your connector/transmitter unit and also to an available USB port on your computer.

Now that you have connected your USB cable to your PC and transmitter you will complete the following steps to configure your device before placing the unit into operation. You will be using the configuration software utility (TC Central>>End Device Configuration Wizard) that you installed onto your PC in the previous section. If you have not installed the configuration software utility you should do so now. During this procedure you will be setting the following parameters in your transmitter.

Button Operation

1. "ON/OFF"

The "ON/OFF" button on the front of your connector/transmitter is used to turn your unit "ON" or "OFF".

2. "SETUP"

The "SETUP" button on the front of your connector/transmitter is only used during the setup and configuration of your unit.

Indicator Lights

1. Transmit (TX) Green Indicator Light

The green indicator light marked "TX" on the front of your connector/transmitter will blink every time the unit sends data to the receiving unit. Example: If you selected a 5 second sample rate the green TX LED will blink one time every 5 seconds.

2. Low Battery (Low Bat) Red Indicator Light

The red indicator light marked "Low Bat" on the front of the connector/transmitter will turn on when the battery reaches a level at or below the power level required for normal operation. When this indicator turns on it's time to install a fresh battery in your unit. For procedures on how to change your battery see the later section **Battery Replacement**

Channel Number

This sets a unique address number into your transmitter. Later, when you set up your measurement software you will again set channel numbers to receive readings from the corresponding unit(s). Each unit must be set for a different channel number for your system to operate correctly.

Sample Rate:

This will program your device to transmit 1 data reading to your receiver at a specified time interval. Available settings are 2, 3, 5, 15, 30, 45, 60, 75 or 90.

STEP 1. Enter the "SETUP" mode.

To place your transmitter into the "SETUP" mode for programming follow this procedure:

Press and hold the "ON/OFF" button. While the "ON/OFF" button is being held, press the "SETUP" button one time and then release the "ON/OFF" button.

The green (TX) indicator on the front of your device should be blinking at a steady rate. This indicates that your device is ready to run the configuration utility software.

(Refer to **Main Transmitter Board/Input Connections** diagram for button locations)

STEP 2. Launch Setup Utility Program.

To launch the **End Device Configuration Wizard**, begin by accessing the "Programs" list under your "Start Menu".

Scroll through the list to find the Omega "TC-Central" folder, and then select the **End Device Configuration Wizard**.

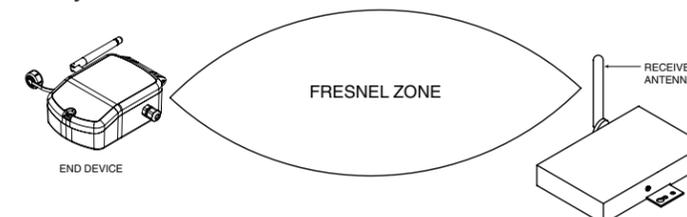
STEP 3. Programming the device settings.

After starting the setup utility program, the "Welcome to the Universal Wireless End Device Configuration Wizard" screen should be visible on your screen. The software will guide you through the steps required to program your device settings.

Device Installation

When installing your device it is important to position your device in such a way as to optimize the antenna location within what is known as the "Fresnel Zone".

The Fresnel Zone can be thought of as a football-shaped invisible tunnel between two locations that provides a path for RF signals between your device and your receiver.



Fresnel Zone

In order to achieve maximum range, the football-shaped path in which radio waves travel must be free of all obstructions. Obstacles in the path (especially metal) will decrease the communication range between your device and your receiver. Also, if the antennas are mounted just barely off the ground, over half of the Fresnel zone ends up being obstructed by the earth

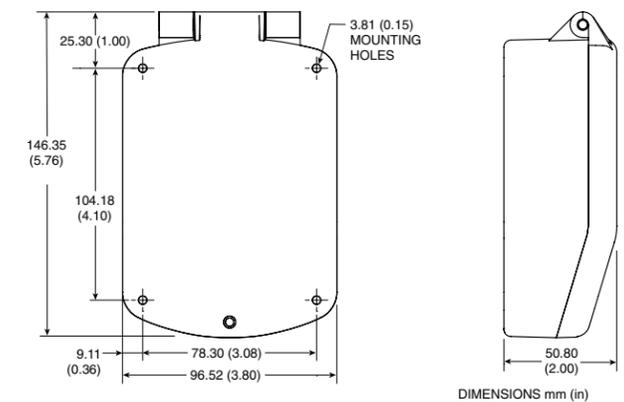
resulting in significant reduction in range. To avoid this problem, the antennas should be mounted high enough off of the ground so that the earth does not interfere with the central diameter of the Fresnel Zone.

NOTE:

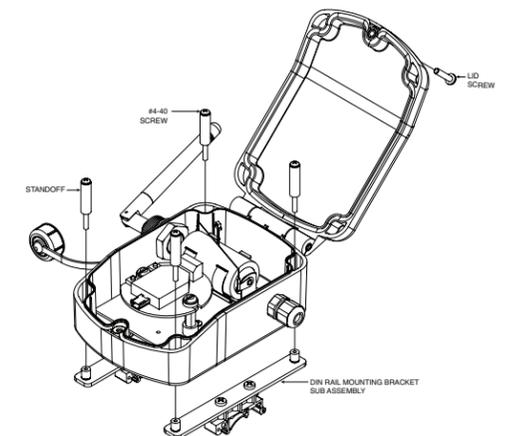
No co-location with other radio transmitters is allowed. By definition co-location is when another radio device or the device's antenna is located within 20 cm of your connector/transmitter and can transmit simultaneously with your unit.

Mounting

When mounting your end device, care should be taken to make sure it is as far away from any metal objects. If nearby metal gets too close to your unit, it has the potential to interfere with the way the unit radiates and may cause signal loss or possibly even the inability to communicate at all with your receiver.



Mounting Dimensions



DIN Rail Mounting Bracket Installation