



# DUCT TEMPERATURE SERIES

Installation & Operation Instructions  
DT2630

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## GENERAL INFORMATION

The DT2630 is a battery operated wireless duct sensor that gives the flexibility and ease of installation for monitoring duct temperatures wirelessly using 900MHz spread spectrum technology rather than costly hardwire installations. The single point probe is 0.25" O.D., made of 304 stainless steel, and is available in 4", 6", 8", 12", and 18" lengths to fit most applications. The DT2630 can be ordered with the standard enclosure or NEMA 4X enclosure depending on the specifications required. The DT2630 will send the temperature wirelessly to the RM2432D receiver that converts the wireless signal to voltage input for use with a DDC controller, or to a transceiver which will send the data to a BAS using BACnet, Modbus, or Lonworks protocol. Transmission distance in a typical building is 200-300 feet horizontal depending on the layout and construction of the building, and one floor above and one floor below the transceiver. Sensor distance and reliability can be increased with the addition of a RR2552B(s) repeater.

### For optimal temperature readings, follow these tips:

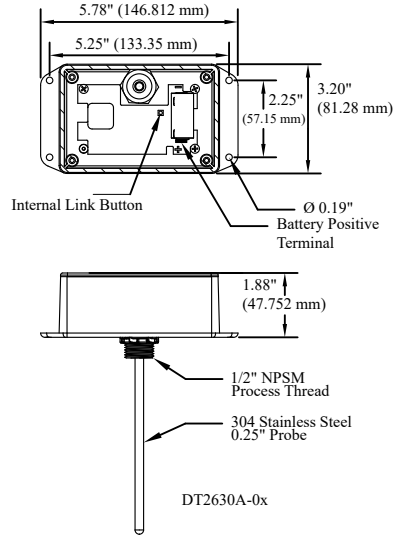
- Duct probe should be placed (3) to (4) duct segments down from any bend or obstructions and away from 90° bends.
- Mount the sensor on the top or sides of duct work; mounting on the bottom risks damage due to moisture.
- The sensor should be mounted in the middle of the duct where air circulation is well mixed (no stratification), and not blocked by obstructions. Stratification and obstructions can cause sensing errors. An example is downstream from a heating or cooling coil.

## MOUNTING INSTRUCTIONS

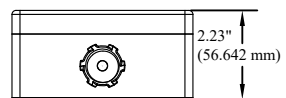
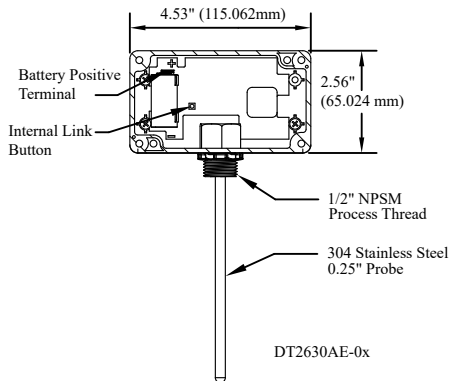
Drill a 7/8" hole in the duct and insert the probe through the hole until the foam pad is tight to the duct. Drill pilot holes for the mounting screws. Use the enclosure flange as a guide, or use the dimensions listed below to measure out.

## FIGURE 1: DIMENSIONS

### STANDARD



### NEMA 4X



Now fasten and insert (2) screws #8 x 3/4" TEK (provided and recommended) through the mounting holes in the flange and tighten until the unit is held firmly to the duct.

**Note:** Wireless sensors should be installed within 200 to 300 feet of the receiver. RR2552 signal repeaters can be installed as to increase transmission distance between sensors and receivers.

To select the proper sensor location, first install and power the receiver. To activate the sensor insert the battery observing the polarity. The mesh networked wireless system does not require any additional wireless equipment to determine the proper location of the sensors.

While the sensor is attempting to connect to the receiver the Data-Link LED will blink rapidly 8–10 times every 10 seconds. Once a connection has been established the Data-Link LED will blink once to indicate the data transmission has been received successfully. The Data-Link LED will continue to blink once for every data transmission. The data transmission rate is programmed into the sensor (normally 1 minute intervals).

If the sensor continues to blink rapidly 8-10 times every 10 seconds, a repeater will need to be added. See RR2552B instructions for repeater installation.

The sensor has a Low Battery LED that will start to blink continuously when the battery voltage is low. A low battery signal is also sent to the receiver for remote indication that the battery should be replaced. If the battery is not replaced in approximately 2 months the battery voltage will become so low that the Low Battery and Data-Link LEDs will not blink. Replace the battery and the Data-Link LED will start blinking while the sensor is re-establishing communications with the receiver.

Attach the cover of the duct sensor by installing the four screws to complete the installation.

## PRECAUTIONS

**SENSORS, REPEATERS AND RECEIVERS SHOULD NOT BE INSTALLED IN THE FOLLOWING AREAS:**

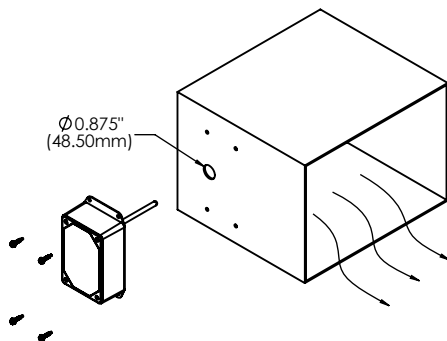
- **INSIDE METAL ENCLOSURE / PANEL**
  - **INSIDE OR IMMEDIATELY NEXT TO ELEVATOR SHAFT / ELEVATOR BANKS**
  - **IN FRONT OF OR IMMEDIATELY NEXT TO LARGE TREES OR LARGE BODY OF WATER**
- TRANSMISSION DISTANCE AND PERFORMANCE WILL BE DRASTICALLY REDUCED.**



### CAUTION:

**DO NOT USE THIS PRODUCT IN ANY SAFETY RELATED APPLICATIONS WHERE HUMAN LIFE MAY BE AFFECTED.**

**FIGURE 2: DUCT MOUNTING**



# PRODUCT SPECIFICATIONS

<b>Input Voltage:</b>	Battery; 1 (Duracell DL123A), Lithium 3V 1400mAh 45 mA maximum
<b>Battery Life:</b>	2-3 years typical
<b>Operating Temperature Range:</b>	14 to 140°F (-10 to 60°C)
<b>Operating Humidity Range:</b>	5 to 65%, Non-condensing
<b>Storage Temperature Range:</b>	<b>Temperature:</b> 0 to 176°F (-17 to 80°C)   <b>Humidity:</b> 5 to 65%, Non-condensing
<b>Sensor Temperature Range:</b>	-40 to 200°F (-40 to 93°C)
<b>Accuracy:</b>	+/- 1°F (+/- 0.555°C) 12 bit resolution
<b>Probe Material:</b>	304 Stainless Steel
<b>Probe Diameter:</b>	0.25" (6.35 mm)
<b>Probe Lengths:</b>	4", 6", 8", 12" & 18"
<b>Fitting / Flammability Rating:</b>	ST801A Polyamide 66 Plastic (PA66) toughened "Zytel", UL94-HB
<b>Data Protocol:</b>	IEEE 802.15.4-2003/2006
<b>RF Characteristics:</b>	900 MHz, Operating Frequency 10 channels between 902 – 928 MHz <b>Transmitter Power:</b> 11 dBm   <b>Receiver Sensitivity:</b> -11 dBm
<b>Sensor Data Transmission Time:</b>	75 seconds (default)   300 seconds (optional)
<b>Transmission Distance:</b>	200 – 300 ft horizontally depending on building type and construction, and typically one floor above and below the transceiver vertically
<b>Enclosure Material   Flammability Rating:</b>	<b>Standard:</b> ABS Plastic   UL94   <b>NEMA 4X:</b> Polycarbonate Plastic   UL94-HB

## WARRANTY

The Wireless Duct Sensor Series are covered by ACI's Five (5) Year Limited Warranty, which is located in the front of ACI'S SENSORS & TRANSMITTERS CATALOG or can be found on ACI's website: [www.workaci.com](http://www.workaci.com).

## W.E.E.E. DIRECTIVE

At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre. Do not dispose of with household waste. Do not burn.



