Flying Lead Battery Powered Radio Temperature Sensors

Features

- Up to 5 years battery life
- High quality external whip antenna
- Encrypted data transmission
- Configurable parameters
- Waterproof potting option

Specification

Radio Output:
- Frequency 2.4GHz
- 16 channels, automatically selected
- Direct-sequence spread spectrum
- Compliance IEEE 802.15.4-2006

Aerial Characteristics
- Gain 2.0dBi
- VSWR <2:1

Data Encryption: AES 128

Power Output: 0dBm

Accuracy:
- Temperature ±0.3°C

Battery Type: 3.6V 2/3 A Li-SOCl$_2$, non-rechargeable

Battery Life: >3 years (depending on configuration)

Probe:
- Material Acetal resin
- Dimensions 25mm x 6mm dia. (not including outer heat shrink)

Housing:
- Material ABS (flame retardant type VO)
- Dimensions 55mm x 90mm dia.
- Mounting holes 4mm spaced 85mm apart

Protection:
- Without potting IP40
- With potting IP67

Environmental:

Operating:
- Temperature -10°C to +50°C
- RH 0 to 90%, non-condensing

Storage:
- Temperature -10°C to +80°C
- RH 0 to 90%, non-condensing

Country of origin: UK

Product Codes

RF-RS-T-555 - Battery powered radio flying lead temperature sensor

-5m 5 Meter cable length
-R End cap potted for waterproofing

Technical Overview

The **RF-RS-T-555** flying lead temperature sensors are used for the detection of air temperature. Units contain a high quality thermistor sensing element which is housed in a acetal resin probe, with 2 metres of screened cable as standard. Longer cable lengths are available to order (at extra cost) along with a potted variant for low temperature applications and water submersion.

The radio RH&T sensors are used in conjunction with the Sontay® **RF-RX20** or **RF-RX40** receiver units, and if required (depending on installation topography), Sontay® **RF-RR** series of router radio sensors.

Routers are used to route signals from battery powered nodes and other routers to the receiver module, where the signal strength of a direct path is not sufficient for reliable communications. Data is transmitted back to the receiver at configurable time intervals, or on a configurable change in measured value. Each sensor retains these configurations if the battery becomes discharged or requires replacement.

The sensors, routers and receiver automatically select which of the 16 transmission channels available gives the best radio network performance, taking into account both signal strength and interference levels from adjacent channels and equipment (such as Wi-Fi etc.), and automatically find the best path back to the receiver, which may be directly to the receiver or via "parent" routers.

NB Each router can support a maximum of 16 "children", a maximum of 8 of which can be battery powered "end devices" and a maximum of which can be 8 routers. Consideration should be given on network planning for redundancy in case of router failure or damage.

Labels

Labels are available in plain, pre-printed or customer print types and a choice of either dark grey or white.

Aerial Orientation

For best results ensure that the main body of the aerial is vertical.
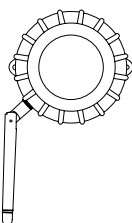
Installation

1. Remove all packaging from the sensor
2. Note the MAC address printed on the affixed label and note where this MAC address is installed.
3. Remove the lid by twisting and separating from the main body and install the Li-SOCl$_2$ 2/3 A battery, observing the correct polarity.
4. Mount the sensor in the required position (this will have been determined by the site survey tool, (see the quick start guide and manual),.
5. Drill two holes at 85mm centres, fix the IP65 housing to the duct with appropriate screws. The housing is designed to make it easy for an electric screwdriver to be used if desired.
6. To power on the unit, fit J400.
7. Secure the probe to the surface to be monitored
8. Ensure, at a minimum, that all routers and the receiver on the radio network are powered on, and allow about 5 minutes for the network to auto-commission before attempting to read values or make configuration changes.

Battery Fitting and Replacement

The current battery level of a sensor can be monitored using the CMS software connected to the receiver. When a battery is first installed, or when it is replaced, observe the correct polarity. **Fitting the battery incorrectly may result in permanent damage to the sensor**. Remove the power jumper J400 prior to removing a battery. After fitting a battery, replace the power jumper while pressing the reset button. This resets the hours run counter for the battery.

NB Lithium-Thionyl Chloride batteries are **not rechargeable**, and should be stored in a clean, cool (not exceeding +30°C), dry and ventilated area.

Disposal of Batteries - Warning! Fire, Explosion and Burn Hazard.

Do not recharge, short-circuit, crush, disassemble, heat above 100°C (212°F), incinerate, or expose the battery contents to water. Do not solder directly to the cell.

All batteries must be disposed of in accordance with EC Directive 2006/66/EC, amended by EU Directive 2008/12/EC.

For the latest information and product updates, register at www.sontay.com