Router (Space Housing)

Features

- High power output
- High quality external whip antenna
- Encrypted data transmission
- Configurable parameters

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: +10dBm
Power Supply: 24Vac/dc
Housing material: ABS (flame retardant type VO)
Dimensions: 85 x 85 x 23mm
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-RR-900- Radio router (space housing)

Technical Overview

The radio routers are used in conjunction with the Sontay **RF-RX20** or **RF-RX40** receiver units, and if required (depending on installation topography), Sontay **RF-RS-T** and **RF-RS-R** series of battery powered 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.) The sensors and routers 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.

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. Undo the tamperproof screw at the bottom of the housing and gently pull the front panel from the base.
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 for further details) taking care *not* to site the sensor;
   - In direct sunlight or near a source of heat
   - Behind any obstruction likely to impede the radio signal (for example, a filing cabinet)
5. Take care to mount the sensor in the correct orientation, with the tamperproof screw at the bottom, to allow free flow of air over the sensor element. Ensure that the louvers in the sensor housing are clear and free from obstruction.
6. The sensor should be mounted between 1.5m and 2m up from floor level.
7. Using the base as a template mark the hole centres and fix to the wall with suitable screws. Alternatively the base plate can be mounted on to a conduit box or a standard recessed back box.
8. Feed cable through the 22mm knockout in the base of the housing and terminate the cores at the terminal block as required. Leaving some slack inside the unit.
9. Observe correct polarity if using a 24Vdc power supply.
10. To power on the unit, fit J200.
11. Replace the housing to the base plate.
12. Fit the tamperproof screw (if required) through the lug at the bottom of the base plate.
13. 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.

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