Lorikeet HP1 User Manual

Revision History

Revision	Date	Details
1.0	27-Feb-2013	Initial Draft

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Overview

The Lorikeet HP1 is a battery powered wireless telemetry unit designed for domestic and commercial water meters to support low cost utility scale automatic meter reading (AMR) deployments based on Taggle Systems proprietary 900MHz ISM band digital spread spectrum radio technology.

Specifications

Electrical

Radio	**922MHz license free DSSS transmit only**
Centre Frequency	**922.00MHz , +/- 20ppm over temperature and lifetime**
Output Power	**27 dBm**
Sensor type	**External reed switch with tamper loop**
Antenna	**Internal 0dBi monopole**
Burst interval	**60 min**
Burst time	**330ms**
Battery	**Single LSH20 (D size 3.6V LiThCl) non replaceable**
Lifetime	**Minimum 10 years**

Environmental

Operating temperature	**-10C to 60C, battery lifetime guaranteed for operating environment where average temperature does not exceed 40C**
Water resistance	**IP68 (submersible to 1m)**
Shock	**Will survive drop from 1m height unattached and 100mm height when attached to water meter**
UV	**Capable of withstanding 15 year direct sun exposure**

Wiring Instructions

The LORIKEET HP1 is shipped preconfigured with a meter probe. Possible probes include:

Probe Name	Elster Part No.		Appropriate Meters
T-probe	MEB7454		V100
T140/PG100	45245-00		H4000, S2000, C4000, C4200
M160/V200	45250-00		V200, V210, V120, V140, Combination Meters
PR6	2925M1221		V200 (replacement for M160)
PR7	2925M1280		H4000 (replacement for PG100)

Refer to the Taggle Field Installation Manual for details on fitting the probe to the meter.

The LORIKEET HP1 can also be supplied with an un-terminated 4 core cable for connection to probes from alternative meter manufacturers or connection directly to the pulse output from electronic meters. The wiring instructions are shown in the following table:

Conductor	Function	Connection
Red	Pulse circuit In	Meter contact output
Blue	Pulse circuit Ground	Meter contact output Ground
Yellow	Tamper circuit In	Loop back to Tamper Ground (Black)
Black	Tamper circuit Ground	Loop back to Tamper In (Yellow)

Table 1. Lorikeet HP1 Wiring Diagram

The pulse circuit (red/blue pair) should be connected to the pulse output of an electronic meter or the reed switch of a 3rd party passive probe. The pulse counter input is designed to be connected to contact closure circuits only. Connection to meter pulse outputs which actively drive the output in the on and off state is possible, however the maximum recommended voltage on the pulse counter input (red wire) is 3.6V

Warning: Never connect the pulse counter input to an active pulse output > 5V as this will permanently damage the LOROKEET HP1 and may damage the meter as well.

The tamper loop should be enabled by connecting the yellow and black conductors together at far end of the cable. If the cable is cut for any reason a tamper alert will be transmitted.

Warning: Do not leave the tamper circuit un-terminated as this may result in unwanted tamper alarms being triggered.

Mounting Instructions

The Lorikeet HP1 is suitable for both below ground installation in meter and irrigation pits, as well as above ground mounted on posts or other non-metallic structures such as fences. As with all radio devices superior range and reliability will be achieved with above ground deployments.

When installing the device inside pits where possible the device should be mounted vertically with the cable at the bottom, as shown in the diagram below.

Figure 1. Pit Installation

Pits with plastic or concrete lids are preferable to metal lids to avoid excess radio signal attenuation.

For above ground installations the device can be mounted directly to the meter using a metal bracket as shown below. Alternatively the device can be fixed to nearby walls or fences; however for best

results the device should be at least 15cm away from nearby solid objects to avoid de-tuning the antenna. Fixing directly to metal structures is not recommended.

Figure 2. Meter Installation

For long range rural applications the device can be mounted on 25mm PVC conduit attached to a star picket as shown below. Best results will be obtained if the device can be located away from local obstructions such as trees and bushes.

Figure 3. Long Range Installation