



Above:
cr1 base station

Left:
*r1000 submersible
temperature transmitter*

The r1000 submersible temperature transmitter is a sensor for use in tough environments where there is a requirement for accurate and reliable temperature data without using wiring.

The transmitter itself is encased in a robust acetal cylinder to protect the electronics from damage. The high stability temperature sensor can be supplied either hardwired to the transmitter body, or on a 350 mm silicone cable. The r1000 can optionally be supplied with a Lemo-socketed remote probe for use in dirty but dry environments. The sensor can cover one of three ranges: -35...+60°C, -15...+100°C or +10...+150°C.

Each unit contains a micro-controller that switches itself on for short intervals. The measurement is carried out, converted to digital form and then transmitted by low power radio using a bespoke protocol, ensuring complete integrity of the data transfer to the Hanwell cr1 or sr2 receivers. The radio system is fully approved and exceeds all specifications enforced by the relevant national authority. In addition, the system complies with the European R&TTE Directive, which covers EMC and radio specifications and, therefore, a license is not required.

A 'battery low' indication is displayed via the PC software, warning of the requirement for battery change prior to power loss. Further, in the event of total

failure in transmission the software will also flag an alert.

The obvious, inherent advantage of this type of monitoring is zero installation costs with no wiring requirement, disruption or damage to the environment you wish to monitor. In addition, refrigerators, freezers, incubators, water baths or other laboratory equipment can be freely moved about the laboratory without losing data integrity. Simply place the sensor in the area to be covered and switch on. These telemetry units are particularly useful for temporary assignments due to their absolute portability.

Hanwell products are designed with calibration very much in mind. We offer in-house or on-site temperature calibration services, using equipment traceable to national standards. For those customers who have their own in-house calibration facilities, we can provide all the necessary supplementary calibration documentation and software. The r1000 series transmitters, when used together with Hanwell software, comply with the most stringent administrative controls such as those required in FDA regulated environments.

Submersible Temperature

Product Code *RL1000-Txx*
Series *Submersible*

Typical Applications

Monitoring in:

- ° Incubators
- ° Fridges
- ° Freezers
- ° Water baths
- ° Walk-in chambers
- ° Food preparation areas
- ° Dirty and/or wet environments

Instrument

Dimensions: *167x 40 mm diameter*
Weight:
Power Supply: *3.6 Volt AA Lithium battery*
Battery Life: *12 months (typical)*
Case Materials: *Acetal*
Operating Humidity Range: *0...100% non-condensing*
Operating Temp Range: *-35 to +150°C*

Sensors

Temperature

Sensor: *Precision thermistor*
Range: *-40° to +70° C
(depending upon probe chosen)*
Accuracy: *+/- 0.2°C at design T.*
Resolution: *+/- 0.1°C at design T.*

Radio

Radio Frequency: *434.075MHz or 433.920MHz*
Radio Power: *10 mW*
Radio Range: *3 km over open ground*
Transmission speed options: *4 seconds to 3 minutes (standard)*

Accessories

Code:

- 25mm long heavy duty probe*
- 170mm long heavy duty probe*
- Integral food grade thermistor probe*
- 120mm x 3mm fast response probe (350mm silicone cable)*
- 300mm x 3mm fast response probe (350mm silicone cable)*
- 50mm x 3mm fast response probe (350mm silicone Lemo socket for remote probe)*