# Temperature – PT100 - External Probe



## APPLICATIONS

Module and probe used for monitoring ultra-low temperature freezers at -86°C, nitrogen tanks at -196°C and ovens up to +350°C.

## WIRELESS

Range up to 700 meters (2,300 ft) in open space, from 25 meters (82 ft) to 100 meters (330 ft) indoors, and up to 400 meters (1,312 ft) indoors with 3 repeaters.

## DATA LOGGING

Memory for 3,000 temperature measurements in wireless module memory (equivalent to 3 weeks of readings with a measurement every 10 minutes).

## SERVICE DISCOVERY PROTOCOL (SDP)

Cobalt 2 setup is automatic. Simply press the button on the Cobalt 2 module for 3 seconds to connect it with your wireless receiver. If the wireless signal is not optimal, Cobalt 2 seeks a better path by using other Cobalt modules to relay its signal to the receiver.

(starting with Thermo-Server software Version 4.1)

- **Measured temperature range**: from -200°C to +350°C depending on probe

- **Battery operated:** up to 2 years autonomy depending on use (battery model: LS17500 Saft Mazda 3.6V Lithium, p/n COB03400000)

- **Wireless module mount**: includes double-sided Velcro® or magnetic adhesive on wall bracket back

- **ISM** (Industrial Scientific Medical) **band with 3 frequencies**: US/CAN 915 MHz, Europe 868 MHz, APAC 434 MHz.

### A cost-effective solution for monitoring ambient temperature in your storage areas

Cobalt 2 is the industry's leading battery powered remote temperature monitoring solution. Cobalt 2 is an end-to-end wireless solution for remote temperature and sensor monitoring.

The Cobalt 2 system is easy to install and easy to use. Since it is wireless, no cabling is required. It lets you measure storage temperatures for temperature-sensitive products accurately, remotely and in real-time. Cobalt 2 checks temperature automatically, stores temperature data for tracking and traceability purposes, and alerts you in case anomalies are detected.

This wireless module is designed to be installed on the outside of refrigerators, freezers down to -40° C (-40° F), and incubators, as well as in cold rooms. For monitoring temperature in refrigerators, freezers, incubators, the probe is placed inside the enclosure via a flat cable or in the equipment's built-in access port.

Cobalt collects and stores temperature data at regular intervals, transmitting it wirelessly to a PC running the system management software. This software also handles alarms and data storage, giving you a fast and easy way to see all your measurements and anomalies in just a few clicks.

- FCC 15 compliant: CE EN-300-220
- Channel width: 50 kHz
- Frequency deflection: 16 KHz
- Transmission speed: 9600 Baud in NRZ mode
- Modulation type: GFSK
- Driven receiver sensitivity for BER= 1%: from -107dbm to -110 dbm
- Driven transmission: from 8 dbm to 10 dbm
- Power output: 25 mW

Plastic enclosure: ABS and Polycarbonate

Temperature range for exposure of the module (functioning of the electronics of the radio module): 0°C to 50°C (32° to 122°F). 0 to 90% RH non-condensing.

Protection index: IP65.

Depending on usage, battery change may be required between 1 and 3 years of operation. Cobalt notifies you approximately two months before the end of battery life (when 10% battery life remains). You may change your own batteries or have it done by OCEASOFT or another qualified technician.

Size: 132.74 x 64.15 x 34 mm (5.2 x 2.5 x 1.3 in)

**ocea SØFT** More than monitoring
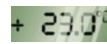
# Large LCD Display

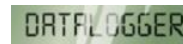⚠ Alarm icon

🔋 Battery level indicator

📶 Performance indicator: wireless range (RSSI)

+ 23.0°C Most recent temperature reading

DATALOGGER Display text: this customizable text shows the sensor name, as well as various alert messages, such as "Sensor Fail", "Low Bat", "High Value", etc.

### Spontaneous alarm emission

Cobalt 2 sends an alarm to the Thermo-Server software, which forwards alerts to the appropriate user(s) in case values exceed pre-determined upper or lower limits. Cobalt 2 can also send spontaneous alarms with additional information:

- Sensor failure: For example, if a probe is disconnected, Cobalt attempts to establish communication with its sensor. If connection is not possible, a technical alarm is sent. The user is therefore notified immediately if there is a problem obtaining readings.
- Low battery: When the battery-life counter reaches 10%, a technical alarm is automatically sent to let the user know that the battery needs to be changed soon.

# PT100 - EXTERNAL PROBES

## N2 tanks, -150°C ULT Freezer

**Measured temperature range**: From -200°C to +50°C.

**Type of probe**: 3-lead PT100 probe class B with TEFLON® cable. Probe dimensions: 150 mm x 3 mm stainless steel. Length of the cable: 2.00 m (6.5 ft). Connector with 3 gold-plated pins between probe and radio module.

**Measurement uncertainty**: ±0.7°C at -196°C and ±0.1°C at 0°C.

Resolution: 0.07°C

Response time: 1 min (90% of 20°C variation)

Calibration certificate: NF EN ISO/CEI 17025

Calibration of probe only in comparison with a 3-point reference standard: **-80°, -40°, and 0°C**.

Protection index: **IP67**

## -86°C ULT Freezer

**Measured temperature range**: From -100°C to +150°C.

**Probe type**: 3-lead PT100 probe class B with TEFLON® cable. Probe dimensions: 100 mm x 3 mm stainless steel. Cable length: 2.00 m (6.5 ft). Connector with 3 gold-plated pins between probe and radio module.

**Measurement uncertainty**: ±0.4°C at -80°C and ±0.1°C at 0°C.

Resolution: 0.07°C

Response time: 1 min (90% of 20°C variation)

Calibration certificate: NF EN ISO/CEI 17025

Calibration of probe only in comparison with a 3-point reference standard: **-80°, -40°, and 0°C**.

Protection index: **IP67**

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