**Description**

The outside temperature can be measured by means of this radio probe. The data is then sent through radio waves to the receiving interface, and to the temperature control system. 99-zone or 4-zone central units can simply display this data. The automations are reserved just to the 99-zone central unit and can activate controls on the basis of exceeding particular temperature thresholds set by means of the TiThermo software. These automations also allow the management of enhanced systems with combination boiler. Up to nine temperature probes can be installed in a system. The radio probe is practically maintenance-free and is supplied by a small solar cell installed on the device. Special care should be taken to install the solar cell in positions which can guarantee sufficient irradiation.

For applications in badly lit or dark places, where the solar cell cannot supply the device, power can be supplied by means of a Lithium battery (type LS14250/1/2AA), to be inserted in the battery compartment. To guarantee the operation of the battery-supplied probe the battery should be replaced at least every 5 years.

The effective battery lifetime depends on the “data updating time” setting (see configuration section).

On the probe printed circuit there is a small key to be used during programming and when the receiving interface is acquiring the radio probe details.

**Legend**

1. Temperature sensor: to measure the temperature
2. Transmission key: allows the association between radio probe and receiving interface
3. Compartment: for lithium battery
4. Solar cell: supplies the entire device
5. Jumpers: to set the temperature update interval
6. IP65 enclosure

**Technical data**

- Power supply: solar cell
  - 3.6 V / 1.1Ah type LS14250/1/2AA lithium battery
- Operating temperature: (-25) – (+40) °C
- Measurement field: (-20) – (+60) °C
- Radio frequency: 868 MHz
- Transmission power: < 10 mW
- Range: 70 m in free field (metal and reinforced concrete walls reduce the range);
- Protection index: IP65

**CE CONFORMITY**

- 89/336/EWG – Electromagnetic compatibility
- R&TTE 1999/5/EC – Directive on radio and telecommunication devices

**CONFORMITY TO REGULATIONS**

- ETSI EN 301 489-3
- ETSI EN 300 220-3
- EN 60669-2-1
- EN 60950
- EN 60065
- EN 60529

**NOTE:** the probe must be installed in a position away from direct sunlight, as this may cause a false temperature reading. Avoid both excessively shady and excessively bright areas.
Radio outdoor temperature probe

Temperature display

- **PROBE** for temperature detection and transmission
- **INTERFACE** for data reception
- **4-ZONE CENTRAL UNIT** for outdoor temperature display

Automation - threshold exceeded LED

- **Probe** for temperature detection and transmission
- **Interface** for data reception
- **99-zone central unit**
- **Control implementation actuator**
- **TITHERMO** for threshold setting and automation
Setting the temperature update interval

The radio probe sends the “temperature” reading to the receiving interface at regular intervals that can be manually set using the jumpers, which must be connected to the T1 and T2 sockets. The update time is calculated following the formula below: T = T1 x T2. The correspondence between the settable times and the jumpers is shown on the table. When the factory settings are used, the temperature will be updated every 1000 seconds. A change in the factory settings will also entail a variation on the solar cell recharging time, or the duration of the battery (if applicable).

### Jumper/time table

<table>
<thead>
<tr>
<th>Jumper sockets</th>
<th>T1/T2</th>
<th>Factory settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>T2</td>
<td>T = 10 x 100 = 1000 sec</td>
</tr>
<tr>
<td>100 sec.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 sec.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 sec.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


**HC/HS 4577 and L/N/NT4577 receiving interface configuration**

In order to use a receiving interface and radio probe, configuration must first be performed, followed by the programming procedure. Only the interface needs configuring. Up to 2 probes may be combined with each interface, therefore providing the system with two detection points for each interface. Up to a maximum of 9 temperature probes may be installed in one system.

The configuration sockets on the interface identify the radio probes addresses. They are: A1/-, PL1/N1, M1 for the first address, and A2/-, PL2/N2, M2 for the second address. The two addresses must always be different from each other, PL1/N1 ≠ PL2/N2. Only one radio probe may be associated to each address. Only used addresses must be configured.

The interface must be configured in temperature control mode by connecting configurator 1 to M1 and M2. With this mode the A1/- and A2/- sockets are not used, therefore no configurator needs to be connected.

**Programming of devices:**

After performing the configuration, it will be necessary to associate the radio probe to the interface following the programming procedure:

1) Press the pin pushbutton of the interface for 5 seconds. The red LED turns on. Release the pushbutton. The interface LED will flash every two seconds to confirm that programming mode is active on the first address (group of configurators PL1/N1, M1). If the second address of the interface is not configured (no configurator is connected to the PL2/N2, M2 positions), go to step 2 of the procedure. However, if also the second address must be configured (group of configurators PL2/N2, M2), simply press the pin pushbutton of the interface again. The LED will flash twice in succession every two seconds. Every time the pin pushbutton is pressed, the system will switch from the first to the second address and vice versa.

2) After choosing the address, The radio probe should be associated to, within 20 seconds press the transmission key of the probe itself. Pressing the transmission key will send the probe serial code. After receiving the code through the radio signal, the red LED of the interface will quickly flash for 2 seconds, confirming that programming is complete, and the procedure has been terminated.

If necessary repeat the operation to save the code of another probe. If on the other hand an address has already been associated and the procedure is repeated with another probe, the interface performs an overwriting action, only keeping the last probe in memory. During normal operation, the sending of information from the probe is confirmed by the flashing of the red LED of the interface. A single flashing indicates that the radio message has been received, and the “temperature” data has been sent through the BUS by a probe associated to the PL1/N1, M1 address. A double flashing indicates that the radio message has been received, and the “temperature” data has been sent through the BUS by a probe associated to the PL2/N2, M2 address. To delete all codes from the interface press the pin pushbutton for 12 seconds. After 5 seconds from pressing the key, the LED will turn on steadily, and after a further 7 seconds, it will start flashing quickly, confirming that all programs have been deleted.

**NOTES:**

- If the interface configuration is wrong, the red LED will flash. Correct the configuration.
- If the second interface address has not been configured (no configurator connected to the PL2/N2, M2 sockets), during the programming procedure it will not be possible to switch to this address, which therefore cannot be programmed.