

TEMPERATURE MONITORING WITH REMOTE PROBE



THESE SENLAB™ T ARE SMART WIRELESS DEVICES, FEATURING THE LoRaWAN™ CONNECTIVITY PROTOCOL.

TEM-LAB-14NS : 1 PROBE WITH 1 M CABLE.
TEM-LAB-24NS : 2 PROBES WITH 2 M CABLE EACH.

THESE SENSORS ARE IDEAL TO MONITOR TEMPERATURE IN CONFINED SPACES OR DIRECTLY IN CONTACT WITH OBJECT.

Ref : TEM-LAB-14NS
TEM-LAB-24NS



+ 20 years*

15 km * IP68 (Outdoor use)

Local or Public Network compliant

* Depending on the operating conditions

These Senlab™ T measure temperatures from -45°C to $+125^{\circ}\text{C}$, with high precision probe(s) ($\pm 0.5^{\circ}\text{C}$ from -10°C to $+85^{\circ}\text{C}$, $\pm 2^{\circ}\text{C}$ else). Designed for outdoor use, Senlab™ T offers a ruggedized IP68 casing which enables a reliable wireless connectivity for continuous temperature monitoring in harsh environments.

This Senlab offers best in class features such as :

- **Battery life time more than 20 years**
- **Rich Data Content thanks to datalogging : Up to 24 measures / radio transmission**
- **Radio Performances**
- **Advanced set of functionalities**

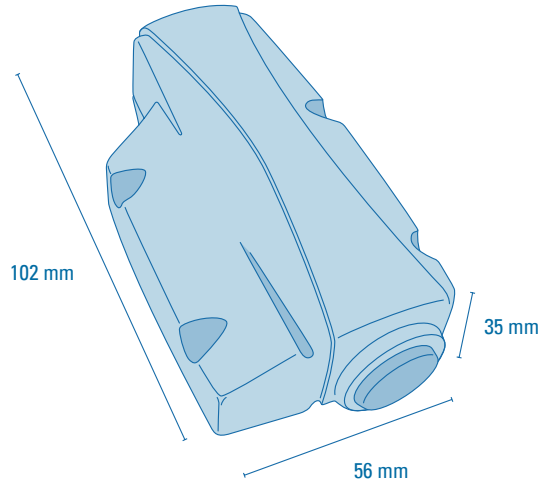
TYPICAL APPLICATIONS

- Control and maintain the cold chain
- Prevent legionella outbreak
- Control hot water pipes
- Set up predictive maintenance services

TECHNICAL SPECIFICATIONS

| | | |
|---|-------------------------|---|
| Physical specifications | Dimensions | 56 x 102 x 35 mm |
| | Weight | TEM-LAB-14NS : 160 gr / TEM-LAB-24NS : 240 gr |
| | Operating temperature | device : -20°C to $+70^{\circ}\text{C}$ / probe : -45°C to $+125^{\circ}\text{C}$ |
| RF specifications | RF sensitivity | -137 dBm |
| | RF power | +14dBm (25mW) |
| | Radio band | 868 MHz |
| EC Conformity : Compliant with Directive 2014/53/UE (RED) | EMC | Final draft EN 301 489-3 v2.1.1 Draft EN 301 489-1 v2.2.0 |
| | Radio | EN 300 220-2 v3.1.1 |
| | Magnetic field exposure | EN 62479 |
| | Safety | EN 60950-1, EN 60950-22 |

DIMENSIONAL DRAWING



TECHNICAL FEATURES FOCUS

Plug & Play installation

- Product fixing with 2 cable ties on wall or pipe
- External Dallas temperature probe (DS18B20 - 1m cable / 2m cables)
- Probe installation on metallic pipe with perforated hose clamp
- Activation with magnet (LED feedback)

High configurability

- Temperature precision of $\pm 0.5^{\circ}\text{C}$ max., range $[-10 ; +85^{\circ}\text{C}]$
- High and Low threshold overrun configuration
- Log and transmit mode for battery lifetime enhancement (up to 24 compressed measures per transmission)
- Reconfiguration possible over the air

Network Configuration

- LoRaWAN parameters (OTAA or ABP activation mode, initial datarate,...)
- Encryption keys customizable by client standard LoRaWAN retries support
- Radio collisions avoidance by pseudo-randomization of transmissions
- Advanced transmission reliability mechanisms (redundancy of data, recovery of lost messages, ...)

BATTERY LIFE DURATION ESTIMATION

This following matrix provides the estimated battery lifetime depending on the average spreading factor used by the Senlab and the transmission period.

| Battery life (years) | 10 min | 15 min | 30 min | 1 h | 2 h | 4 h | 6 h | 8 h | 12 h | 24 h |
|----------------------|--------|--------|--------|------|------|-----|-----|-----|------|------|
| SF7 | 15,8 | 18,8 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| SF8 | 13,0 | 16,1 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| SF9 | 9,6 | 12,4 | 17,7 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| SF10 | 6,4 | 8,7 | 13,5 | 18,8 | >20 | >20 | >20 | >20 | >20 | >20 |
| SF11 | 4,0 | 5,6 | 9,5 | 14,5 | 19,6 | >20 | >20 | >20 | >20 | >20 |
| SF12 | 2,3 | 3,4 | 6,1 | 10,1 | 15,2 | >20 | >20 | >20 | >20 | >20 |

6 measures per frame.

For guidance and information purposes only.