

# AMBIENT TEMPERATURE MONITORING



SMART BUILDING



TEMPERATURE

Ref : TEM-LAB-41NS



20 years \*  
(replaceable battery)



15 km \*



IP30  
(Indoor use)



Local or Public  
Network compliant

\* Depending on the  
operating conditions

SENLAB™ T IS A SMART WIRELESS DEVICE, FEATURING

THE LoRaWAN™ CONNECTIVITY PROTOCOL, EQUIPPED WITH

A HIGH-PRECISION TEMPERATURE SENSOR ( $\pm 0.2^{\circ}\text{C}$ ).

Designed for indoor use, Senlab™ T offers a small casing with a discreet aesthetic that makes it ideal for housing or office.

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**

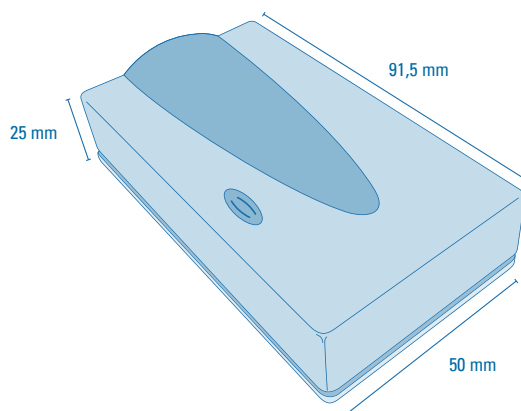
## TYPICAL APPLICATIONS

- Building Energy Consumption Reduction
- Regulate and optimize home and offices comfort
- Monitor HVAC systems
- Protect temperature sensitive equipments (servers rooms...)

## TECHNICAL SPECIFICATIONS

|                                                                 |                         |                                                              |
|-----------------------------------------------------------------|-------------------------|--------------------------------------------------------------|
| Physical specifications                                         | Dimensions              | 50 x 91,5 x 25 mm                                            |
|                                                                 | Weight                  | 60 gr                                                        |
|                                                                 | Operating temperature   | 0°C to +55°C                                                 |
| RF specifications                                               | RF sensitivity          | -137 dBm                                                     |
|                                                                 | RF power                | +14 dBm (25 mW)                                              |
|                                                                 | Radio band              | 868 MHz                                                      |
| EC Conformity :<br>Compliant with Directive<br>2014/53/UE (RED) | EMC                     | Final draft EN 301 489-3 v2.1.1<br>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                                                   |

## DIMENSIONAL DRAWING



## TECHNICAL FEATURES FOCUS

### Plug & Play installation

- Product fixing with double sided tape or screw mounting
- Long term measure stability ( $< 0,01^{\circ}\text{C}/\text{Yr}$  - no need for calibration)
- Activation with magnet (LED feedback)

### High configurability

- Temperature precision of  $\pm 0.2^{\circ}\text{C}$  typ., range  $[0 ; +55^{\circ}\text{C}]$
- 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                  | 14,6   | 16,3   | 18,3   | 19,6 | >20  | >20  | >20  | >20  | >20  | >20  |
| SF8                  | 12,1   | 14,1   | 16,8   | 18,7 | 19,8 | >20  | >20  | >20  | >20  | >20  |
| SF9                  | 8,9    | 11,0   | 14,4   | 17,1 | 18,9 | 19,9 | >20  | >20  | >20  | >20  |
| SF10                 | 5,9    | 7,8    | 11,4   | 14,8 | 17,3 | 19,0 | 19,6 | 19,9 | >20  | >20  |
| SF11                 | 3,7    | 5,1    | 8,2    | 11,8 | 15,1 | 17,6 | 18,6 | 19,1 | 19,7 | >20  |
| SF12                 | 2,2    | 3,1    | 5,4    | 8,6  | 12,2 | 15,4 | 16,9 | 17,8 | 18,7 | 19,8 |

6 measures per frame.

For guidance and information purposes only.