SENSING LABS

OUTDOOR
TEMPERATURE MONITORING
WITH REMOTE PROBE

SMART BUILDING
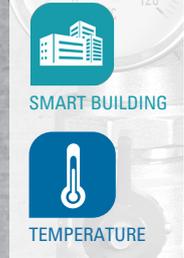
TEMPERATURE

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

MADE IN FRANCE

LoRaWAN CERTIFIED™

+ 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°C, with high precision probe(s) (±0.5°C from -10°C to +85°C, ±2ºC 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°C / probe : -45°C to +125°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

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102 mm

35 mm

56 mm

TECHNICAL FEATURES FOCUS
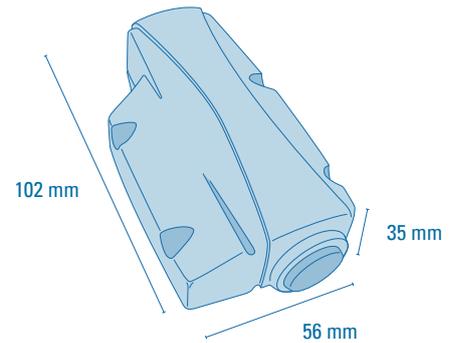
High configurability

- Temperature precision of ± 0.5°C max., range [-10 ; +85°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, ...)

BEST IN ADVANCED FEATURES

The temporal redundancy improves the reception's reliability of measures, at an optimized energetic cost. If the radio signal is weak, it allows the transmission of a reminder of the previous measures with the new physical measures in successive radio messages.

The flush mode allows to accumulate up to 10 days of temperature data recording, when the network is not available. The Senlab T will transmit them as quickly as possible when the network is available.

Advanced monitoring mode allows the data to be monitored up to every second. An alarm can be triggered if the temperature rises within a given time period. This mode can be activated in parallel with the classic operating mode.

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.