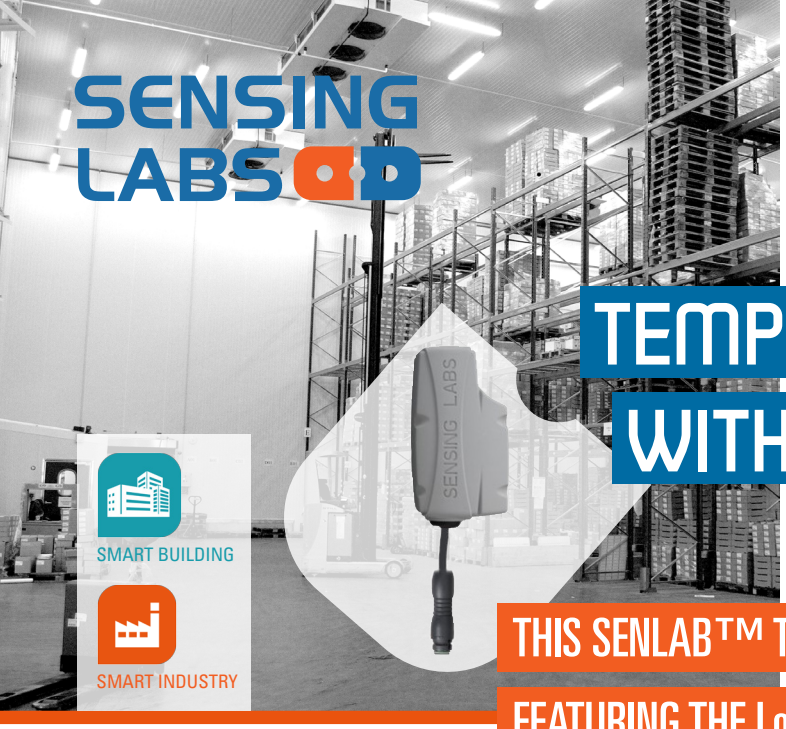
SENSING LABS



OUTDOOR TEMPERATURE MONITORING WITH A BINDER CONNECTOR

SMART BUILDING

SMART INDUSTRY

THIS SENLAB™ T IS A SMART WIRELESS DEVICE, FEATURING THE LoRaWAN™ CONNECTIVITY PROTOCOL.

TEM-LAB-34NS IS EQUIPPED WITH 1 BINDER CONNECTOR 5 PINS - FEMALE (50 CM CABLE)*.

Ref : TEM-LAB-34NS

MADE IN FRANCE

LoRaWAN CERTIFIED™

+ 20 years*

15 km *

IP68 (Outdoor use)

Local or Public Network compliant

* Depending on the operating conditions

* binder connector 5 pins male reference : 720 ref 99 9113 03 05

Designed for outdoor use, Senlab™ T offers a ruggedized IP68 casing which able a reliable wireless connectivity for continuous temperature monitoring in harsh environments. This Senlab™ T can be connected to a multitude of external probes and monitor a very large scale of temperatures :

- Dallas probe to measure temperatures from -45°C to +125°C, with high precision accuracy (±0.5°C from -10°C to +85°C, ±2ºC else).
- PT 1000 probes equipped with a one-wire converter to monitor temperature from -190°C to + 600°C.
- Thermo-couples probes can also be connected (please contact us).

This Senlab offers best in class features as :

- **Battery life time up to 20 years**
- **Rich Data Content thanks to datalogging (24 data/radio transmission)**
- **Radio Performances**
- **Advanced set of functionalities**

TYPICAL APPLICATIONS

- Monitor ambient temperature and maintain the cold chain in the food and pharmaceutical industries during storage and transport
- Maintain the cold chain of temperature-sensitive products (trucks, containers)
- Control hot water pipes

TECHNICAL SPECIFICATIONS

Physical specifications	Dimensions	56 x 102 x 35 mm
	Weight	150 gr
	Operating temperature	-20°C to +70°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

SENSING LABS

A VERSATILE TEMPERATURE MONITORING

1,5 mm diameter | with fitting | magnetic | with fixing lug | mineral insulated | thermo couple

other type of external temperature sensors avaible - contact our sales

TECHNICAL FEATURES FOCUS

High configurability

- High and Low threshold overrun configuration
- Log and transmit mode for battery lifetime enhancement (up to 24 compressed logs 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.

www.sensing-labs.com

T : +33 (0)4 67 47 55 67
contact@sensing-labs.com

Sensing Labs - 187 rue Hélène Boucher
34170 Castelnau-le-Lez