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LOM16 - LOM18 - LOP16 Product Specification

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Revisions

Revision	Issue Date	Author	Comments
1.0	October 12, 2012	AC	
1.1	October 15 th , 2012	AC	Adding of LOM18
1.2	January 18 th 2013	AC	Modifications in § 2.2 LOP16

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1 Introduction

Object:

Define the products specifications in term of technical characteristics, physical dimensions, aperture, accessories and casing.

Products: Mini logger temperature range, loggers with 1 temperature sensor

	Reference	Description
	PFPN-LOM16-001	Newsteo temperature Logger with internal antenna, using Monitoring and Record operating modes
	PFPN-LOM18-001	Newsteo temperature Logger with internal antenna, using Monitoring and Record operating modes Very high accuracy temperature sensor
	PFPN-LOP16-001	Newsteo temperature Logger with internal antenna, dedicated to transportation use

2 Operating modes

1 - The Data Loggers
They are spread in the area which has to be monitored. They send to the RF-to-USB key by radiofrequency the measures they take. They can be wireless configured and updated.

2 - The RF-to-USB Key
It is the bridge between the PC and the loggers

3 - The RF Monitor
This software is installed on the PC and allows the monitoring of the loggers




Figure 1: Functioning

2.1 LOM16 & LOM18

The LOM can be used in one of the two Newsteo standard modes:

- **Monitoring** (real time monitoring applications): the logger sends in real time its measurements to the PC. If a measurement is not received by the PC, it stores it inside its internal memory and sends it to the PC on the next communication channel
- **Record / Restitution** (a posteriori monitoring): the logger records in its embedded memory the measurements it takes. The user can download on the PC all the stored measurements when he wants.

2.2 LOP16

The LOP16 is used in the new Newsteo mode for transportation:

1. To start the product (the product is delivered in hibernate mode)
 - o Swipe 3 times the magnet on the ILS ; The LED blinks Red, then Orange, then Green
 - o It is not necessary to have RFMonitor running on a PC
 - o The product immediately starts recording. **It is in Record mode.**
2. LED functioning
 - a. If the thresholds are deactivated :
 - i. When the magnet is swiped : 1 x Orange
 - ii. periodic flashing (showing that the product is running): 1 x Orange
 - b. If the thresholds are activated, in Live mode :
 1. The product is not in alert : blinks Green x 5
 2. The product is in alert : blinks red x 5

*Remind: the Live mode is only useful to test the communication between the Logger and the receiver.
In Live mode, the Logger does not record the measurements.*

- c. If the thresholds are activated, in Record mode :
 - i. When the magnet is swiped :
 1. The product has not yet reached the nominal operating range (between thresholds) : blinks ORANGE x 1
 2. The product has never been in alert : blinks Green x 5
 3. The product is in alert : blinks red x 5
 4. The product is not in alert anymore (but has been) : blinks red x 2
 - ii. Every 1 minute :
 1. The product has not yet reached the nominal operating range (between thresholds) : blinks ORANGE x 1
 2. The product has never been in alert : blinks Green x 1
 3. The product is in alert : blinks red x 1
 4. The product is not in alert anymore (but has been) : blinks Red x 1

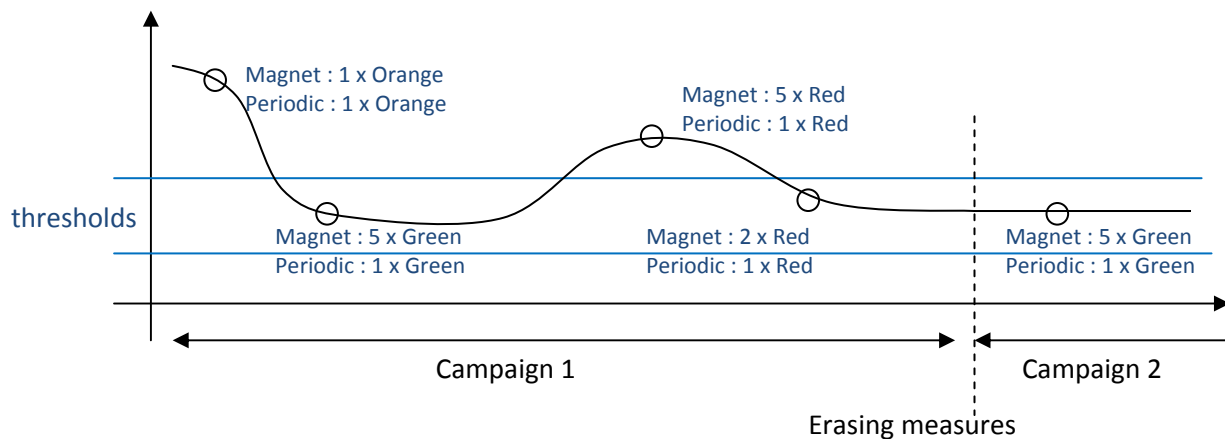


Figure 2: LED operation

- 3. How to acknowledge alerts,
 - a. in Record mode
 - i. The magnet must be kept on the ILS of the product (leave 5 seconds on the ILS), RFM unnecessary. After 5 seconds, the LED blinks Red. Swipe the magnet a second time, the LED blinks orange. Swipe the magnet a third time, the LED blinks green. Then, the alerts are acknowledged. The LED blinking is reset. The data are not erased.
 - ii. Or, when the data are erased with RF Monitor
 - b. In Live mode: there is no alert acknowledgement. In Live mode, the measurements are not recorded.
- 4. Diary
 - o A measure is added which logs certain events: beginning of the campaign, reset alarms, data erase
- 5. Memory functioning
 - o If the memory is full the oldest measurements are erased by the newest.

3 Newsteo logger

3.1 Technical characteristics

Preliminary specification – Subjected to change without prior notification.

3.1.1 Measurement accuracy

	LOM16 – LOP16	LOM18
Type	High accuracy Temperature	Very High accuracy Temperature
Appearance	Internal sensor	
Operating temperature	-40...+60 °C	-10...+60 °C
Resolution	0.1°C	0.034 °C
Accuracy	± 0,3°C [-30°C...+60°C] ± 1°C [-40°C...-30°C]	± 0,1°C [5°C...+45°C] ± 0,2°C [-10°C...+5°C] [45°C...+60°C]
Product latency (response time)	≤10 min	
Sensor drift	Smaller than the resolution product for a 4 years period of use	

3.1.2 Casing

	LOM16 – LOP16 - LOM18
IP Level of the Logger	IP67

3.1.3 Power supply / Autonomy

Characteristics	LOM16 – LOP16 - LOM18
Battery	½ AA Lithium Thionyl (included) with plug-in connector User-replaceable battery
Autonomy @ 25°C	2 years at 25 ° C with a measuring frequency of 15 minutes 4 years at 25 ° C with a measuring frequency of 1 hour Average value which can slightly vary depending on the use. It is given with the product working in non alert mode.

Using the product at high temperature highly reduces its autonomy. A LOM or a LOP16 used at 60°C has autonomy of about 1 month.

3.1.4 Antenna and RF range

	LOM16 – LOP16 - LOM18
RF connector	No connector (antenna inside the case)
Antenna	Internal antenna
Radio range	200 meters (in free area)

3.1.5 Other characteristics

	LOM16 – LOP16 - LOM18
LED	1 bi-color LED
Memory Capacity	32 256 measurements with date and time
Time resolution	1s
Time deviation	+/- 2 min/month @ 25°C
Flash life time	Up to 100 000 cycles (meaning 100 years is a measure is done every second)
ILS	ILS integrated for several functions: <ul style="list-style-type: none">- wakeup of the product in hibernate mode- take of a measure outside of the frequency measure set- Alerts visualisation / acknowledgment (LOP16)

3.2 Casing specification

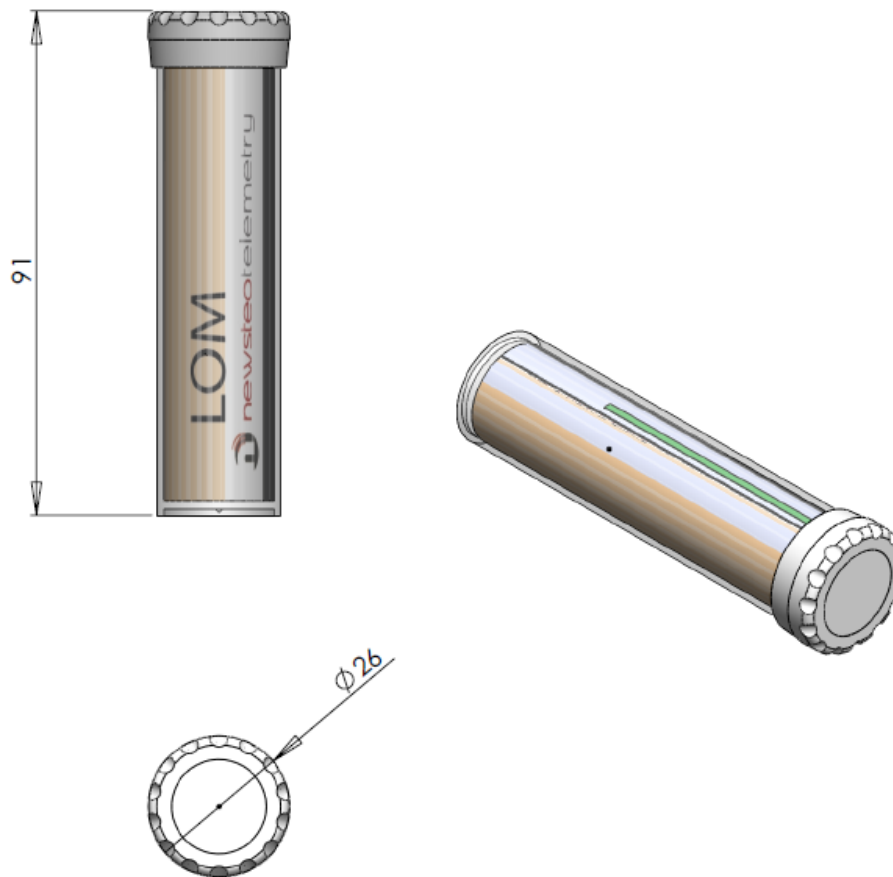


Figure 3: Dimensions

LOM16 – LOP16 - LOM18	
Dimensions	Height : 91 mm Diameter : 26 mm

3.3 Certification

Products certified for radio use in Europe, on the frequency of 868 MHz (ISM band). For use in another area, check with local authorities.

On order, Newsteo can provide COFRAC certification for its products.