



# User Guide - TEMP - Sigfox RC1

☑ Published	<input type="checkbox"/>
⌵ Category	SIGFOX SENSOR
☰ Document version	V3.1.1
⌵ Language	EN
⌵ Type	User Guide
⌵ Product/Service	TEMP / TEMP2S EU868 / RC1

[https://s3-us-west-2.amazonaws.com/secure.notion-static.com/00e5f77c-9139-455d-9f4a-e3aa1c618807/User\\_Guide\\_TEMP\\_IP68\\_Sigfox\\_RC1\\_V3.1.1\(1\).pdf](https://s3-us-west-2.amazonaws.com/secure.notion-static.com/00e5f77c-9139-455d-9f4a-e3aa1c618807/User_Guide_TEMP_IP68_Sigfox_RC1_V3.1.1(1).pdf)

# PRODUCTS AND REGULATORY INFORMATION



This document applies to the following products :

**TEMP V4 IP68 Sigfox 863-870 ambient probe and remote probe**  
**TEMP V4 IP68 Sigfox 863-870 TEMP two external probes**

**Part number:**

ARF8180BCA  
 ARF8180BCB

**Firmware version:**

RTU version: V02.00.01  
 APP version: V02.01.00

Document Information	
Title	TEMP IP68 Sigfox 863-870 - User Guide
Document type	User Guide
Version	3.1.1

DOCUMENTATION GUIDE

PREAMBLE

DISCLAIMER

TECHNICAL SUPPORT

RECOMMENDATIONS

INTRODUCTION

[https://s3-us-west-2.amazonaws.com/secure.notion-static.com/66a0b375-e644-452c-b81e-c83e406a789e/EU\\_declaration\\_of\\_conformity\(\\_TEMP\\_Sigfox\\_ARF8181xx\).pdf](https://s3-us-west-2.amazonaws.com/secure.notion-static.com/66a0b375-e644-452c-b81e-c83e406a789e/EU_declaration_of_conformity(_TEMP_Sigfox_ARF8181xx).pdf)

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### DOCUMENT HISTORY

# 1. PRODUCT PRESENTATION

**IMPORTANT NOTE:** The TEMP V4 IP68 Sigfox RC1 can be started with a magnet or switching the product in PRODUCTION mode with the IoT Configurator.

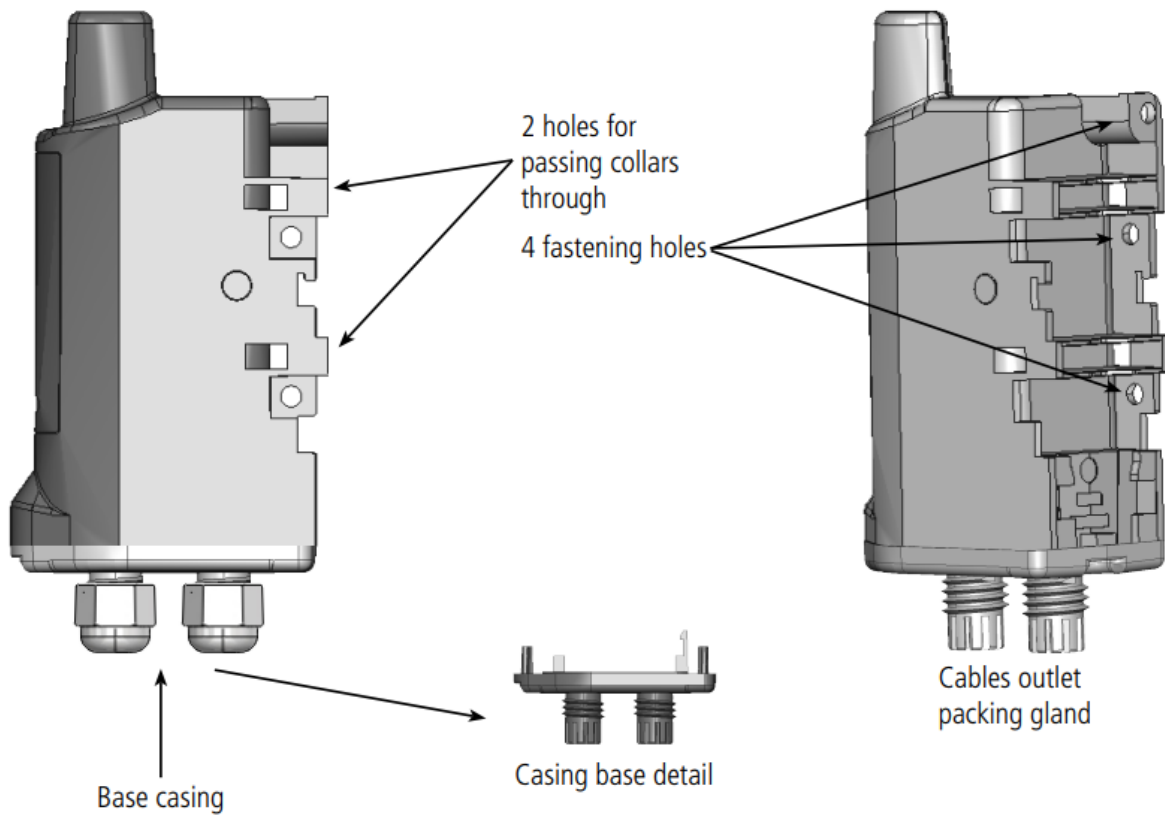
## **Description :**

- The TEMP IP68 Sigfox RC1 is a ready-to-use radio device enabling temperatures to be measured and transmitted by wireless communication network.
- This product exists in 2 versions: one including an ambient probe and a remote probe and a second one with two remote probes.
- These two products answer the users need to monitor the temperature (ambient or contact) of a storage room, cold room or all rooms needing a product able to withstand more or less harsh environment.
- The use of the Sigfox RC1 protocol allows the user to integrate the TEMP IP68 Sigfox RC1 into any network that is already deployed.
- The product emits the data from the sensors either periodically or in an event-based way based on top and/or bottom thresholds.
- The configuration of the transmitter is accessible by the user via a micro-USB port or via the network, allowing in particular a choice of modes of transmission, periodicity or triggering thresholds.
- The TEMP IP68 Sigfox RC1 is powered by a replaceable internal battery and/or an external supply.
- The TEMP IP68 Sigfox RC1 is compatible with the KARE+ service.

## **Composition of the package**

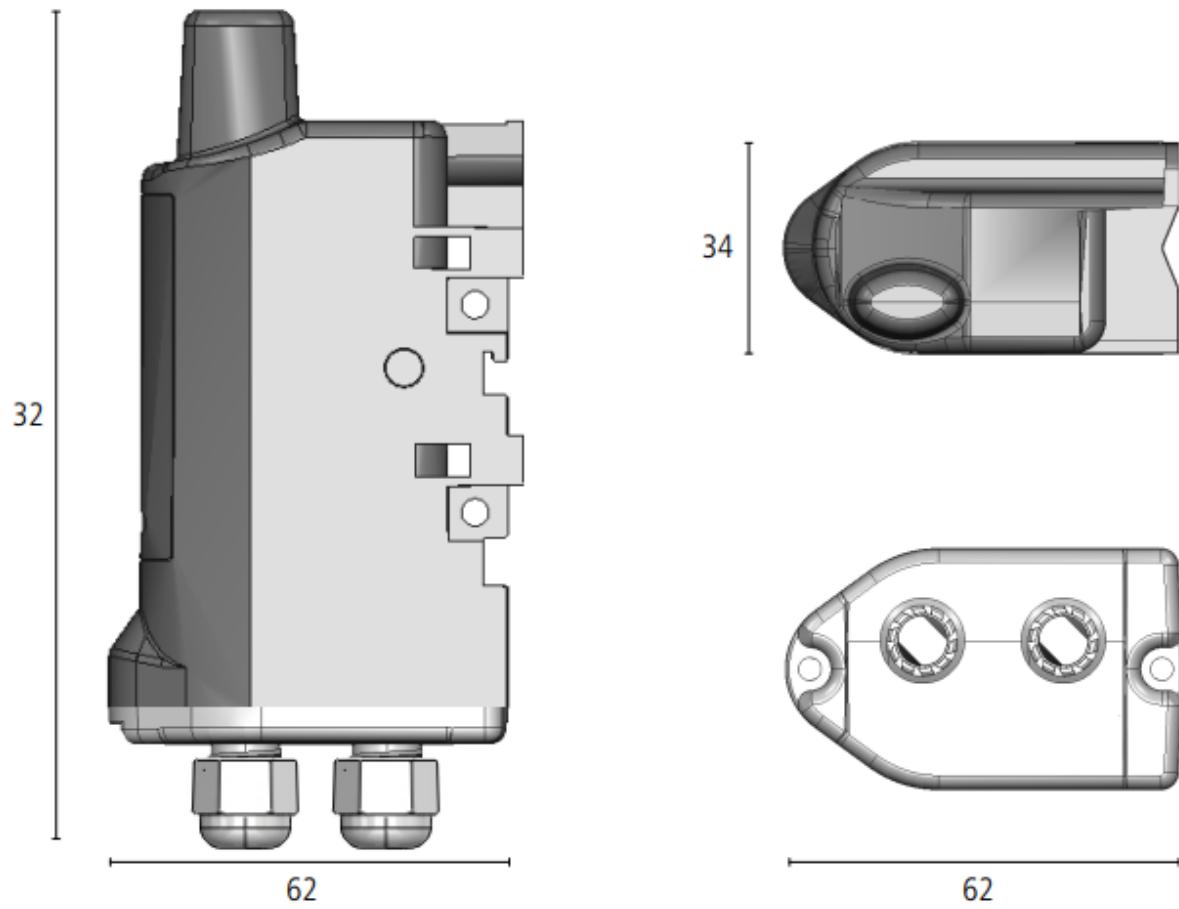
The product is supplied in a cardboard box containing the following items: top casing, electronic card, casing base plate, 2 screws for the plate, cable gland, 3 gland seals, 2 CBLZ 2.2 x 19mm screws, 2 Fischer SX4 plugs, Removable LiSOCl<sub>2</sub> FANSO (battery-pack ER18505H+W36+51021)

# 1.1. General description

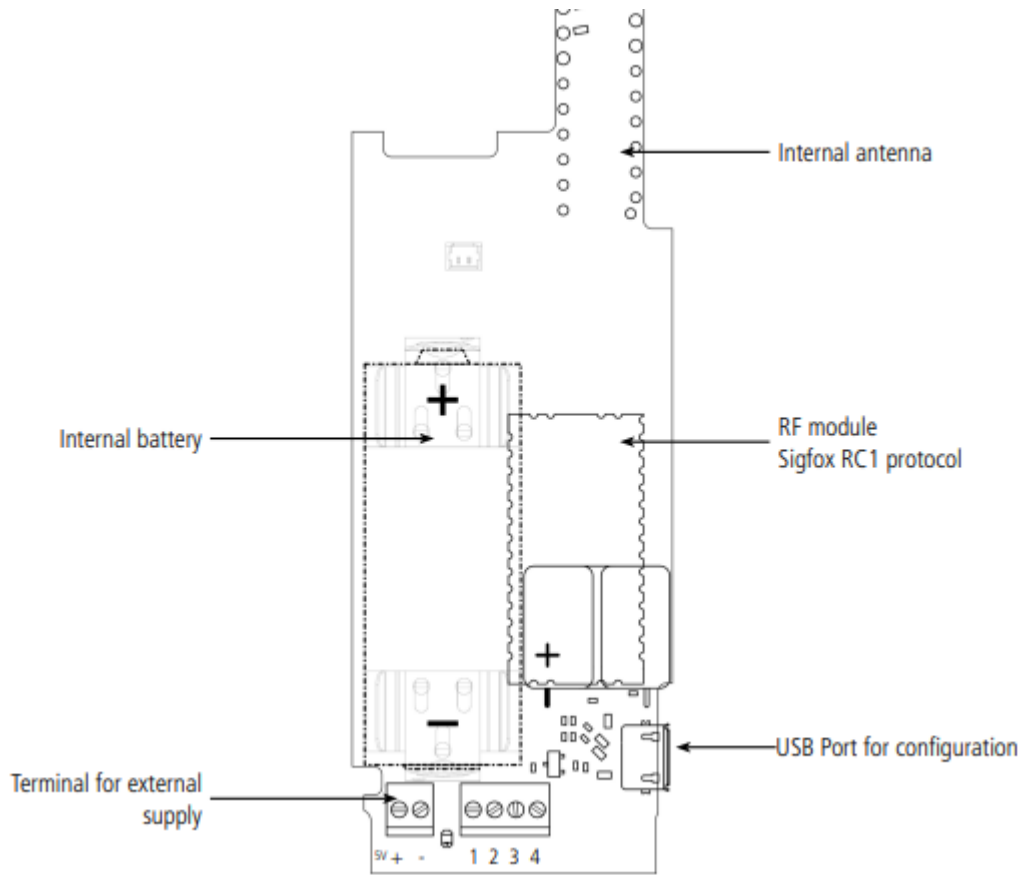


## 1.2. Dimensions

Values in millimeters



### 1.3. Electronic board

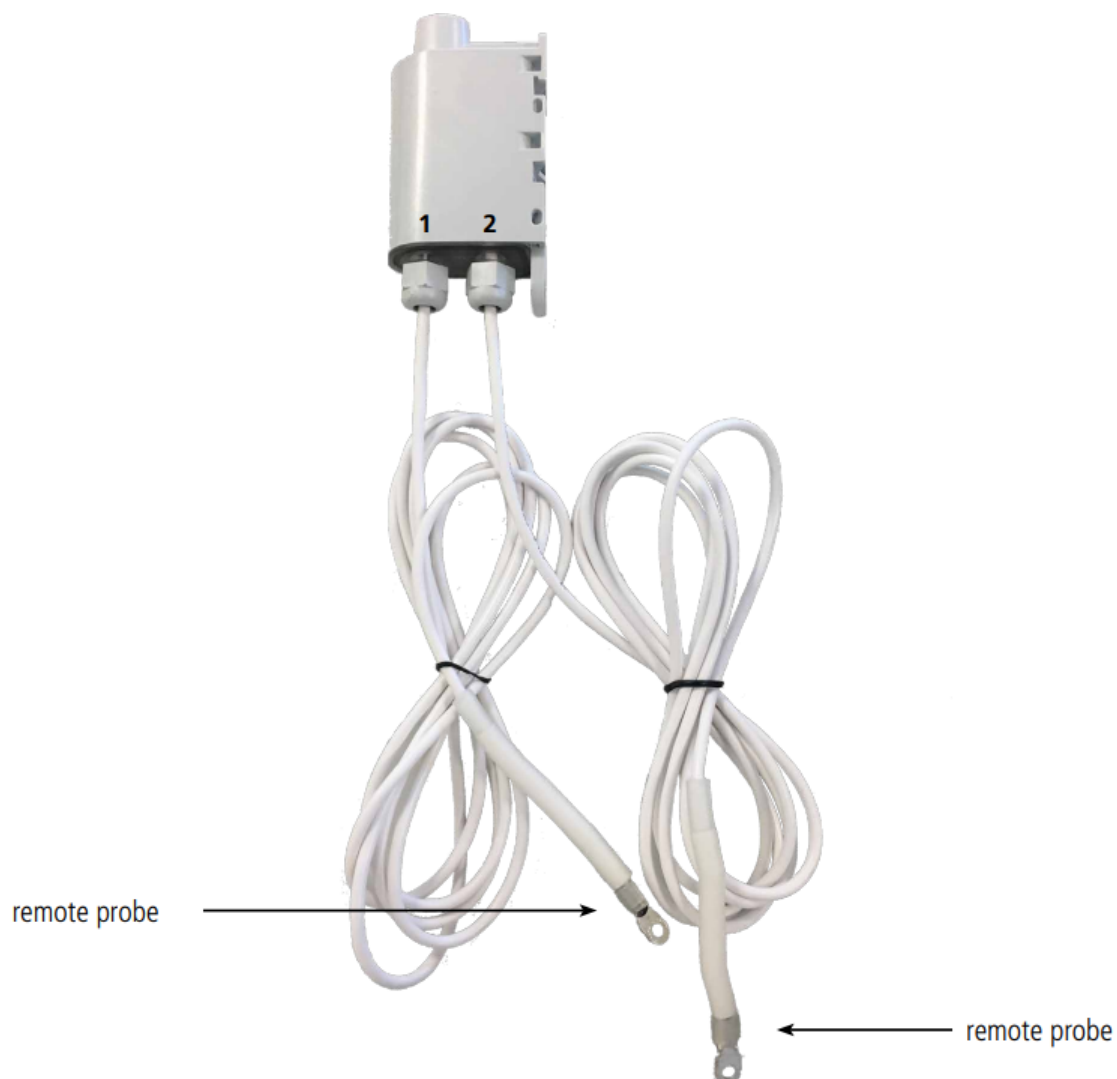


### 1.4. Two versions of the product

Product with ambient probe and remote probe:



Product with two external probes:



## 1.5. Technical specifications

### 1.5.1 General characteristics

Parameters	Value
Working temperature	-25°C / +70°C
Dimensions	132 x 62 x 34mm
Weight	148g 1 Remote probe, 185g 2 remote probes
Casing	IP 68
Radio standards	EN300220-1 et EN300220-2



Parameters	Value
Sigfox network	EU863-870
Max power transmission	14 dBm

## 1.5.2 Electric characteristics

Supply	Characteristics	Value	Unit
Battery FANSO ER18505H+W36mm+51021 connector :	Voltage	3.6	V
Battery FANSO ER18505H+W36mm+51021 connector :	Current max	150	mA
External :	Input range	4.5 to 6.5	V
External :	Current max	110	mA
USB	Tension	5	V
USB	Courrent max	110	mA

The external power supply chosen must comply with the above electrical characteristics and must conform to the standards EN/IEC 62368-1 and EN 61000-3-2, EN 61000-4-2, EN 61000-4-4, EN 61000-4-5.

Example of reference tested by adeunis and functional with the product by cutting the wires: GS05E-USB - Wall Mount AC Adapters 5W 5V 1A W/Euro Plug WallMount USB Output from Mean well.

## 1.5.3 Probes characteristics

Characteristics	
Ambient probe - temperature range	[-25°C /+70°C]
Remote probe - sensor temperature range	55°C..+155°C
Remote probe - wire temperature range	30°C+105°C
Remote probe - wire length	2m
Precision [0°C/+60°C]	+/- 0,2°C
Precision [-35°C/0°C]	+/- 0,5°C
Precision [-55°C/-35°C]	-0,6 /+0,8°C

Characteristics	
Precision [+60°C/105°C]	+/- 2°C

CAUTION: Allow a few minutes for the probe to come back to room temperature before any manual operations to avoid mechanical damages. In addition, please respect the minimum and maximum temperatures for the sensor and the wire (cf. Table here-above).

## 1.5.4 Autonomy

### Usage conditions :

Product storage before use: 1 year maximum.

Calculations made with a temperature at 20°C and 1downlink per day

Nb of frame per day	Sampling (minutes)	Event per day	Autonomy (years)
2	10	0	9.8
2	10	10	4.1
2	60	0	>10
2	60	10	4.2
24	10	0	2.4
24	10	10	1.8
24	60	0	2.4
24	60	10	1.8
48	10	0	1.3
48	10	10	1.1
48	60	0	1.3
48	60	10	1.1
144	10	0	<1
144	10	10	<1
144	60	0	<1
144	60	10	<1

Values above are estimations done under certain conditions of use and environment. They do not represent in any case a commitment on the part of Adeunis.

### 1.5.5 Environmental conditions and ingress protection

The casing of the TEMP V4 IP68 Sigfox RC1 has been tested to ensure a certain level of dust and water protection.

- For dust: level 6 guarantees complete sealing against
- For water: level 8 guarantees at least a complete waterproof casing for more than 1 hour in one meter deep.

The tests carried out by Adeunis for the immersion were under the following conditions: immersion for 10 hours at a depth of 1 meter in water at room temperature (around 20 ° C) followed by an immersion for one hour in water at 60 °C.

We can therefore guarantee the waterproofness of our IP68 case for immersions less than or equal to these times. Any use of our sensor outside the criteria mentioned above cannot be guaranteed by Adeunis.

**Important:** the degree of protection IP68 does not, in any way, guarantee protection against condensation linked to ambient humidity and temperature variations. Large variations in temperature and / or prolonged high relative humidity can lead to an early end of product life.

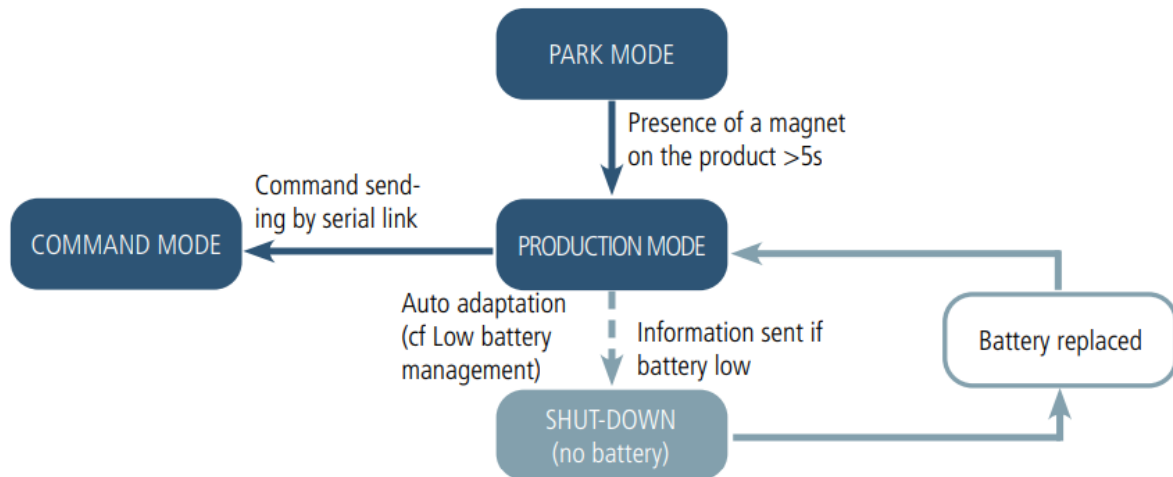
Depending on the mission profile of your product, we advise you to contact us.

## 2. PRODUCT OPERATION

### 2.1. Global operation

IMPORTANT NOTE : Adeunis use the most significant byte first format.

The product has several operating modes:



### 2.1.1 PARK mode

The product is delivered in PARK mode, it is in standby mode and its consumption is minimal. To switch the product out of the Park\* Mode pass a magnet across it for a duration higher than 5 seconds. The green LED illuminates to indicate the detection of the magnet and then flashes quickly during the product starting phase.

The device then sends its configuration and data frames.

### 2.1.2 COMMAND mode

This mode allows the user to configure the registers of the product.

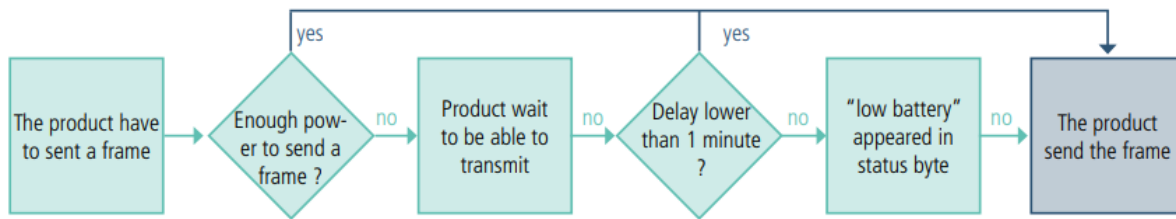
To enter in this mode, plug the micro-USB cable and use the IoT configurator or AT command. Exit from command mode is done when USB is disconnected or with an ATO command. The product will return in its previous state, PARK or PRODUCTION.

### 2.1.3 PRODUCTION mode

This mode allows the user to operate the product in its finale use.

### 2.1.4 Low battery management

When the product detect that the battery is not able to deliver the level of power required for a emission (extreme temperature or end-of-life of the battery), it waits to be able to transmit. If it detect that the generated delay is longer than 1 minute, it informs the user activating the “lowbattery” flag in the status byte of each frame sent.



The “battery low” flag is automatically disappearing when the battery is replaced or when temperature conditions are favorable to the proper functioning of the battery.

## 2.2. Transmission modes

The product allows to measure temperature on 2 probes or 1 probes only, to save the information and to send it according to 3 modes of emission.

	Periodical transmission	Over threshold transmission	Periodical and over threshold transmission
Definition :	The periodical transmission allows the temperature to be collected according to a specified period of time, to be saved and sent on a regular basis for <b>analysis over time</b> .	The over threshold transmission enables to read the temperature according to a specified period of time but to <b>send the alarm frame only if a threshold is over passed</b> .	<b>Mix of the 2 modes</b> to measure temperature regularly in order to be alerted if a threshold is over passed and to save the information to make analysis over time.
Concrete case of usage :	I want to measure my temperature on the 2 probes every 30 minutes. I want to minimize the number of frame per day and to optimize the autonomy so I prefer to send the maximum of data in each frame without losing data.	I want that the product send me an alarm if the temperature is lower than 10°C on probe 1.	I want to know the temperature on 1 probe along the day and be informed if the temperature go under 10°C. The product will send me a frame every 3 hours with the temperature measured each hour and an alarm if the temperature is under 10°C .

	Periodical transmission	Over threshold transmission	Periodical and over threshold transmission
Associated configuration :	<ul style="list-style-type: none"> <li>• <b>Sampling period</b> (S321) = 900 (900s x2 =1800 seconds so 30 minutes) •</li> <li>• <b>Number of samples before saving</b> (S320) = 1 (1 saving at each reading) •</li> <li>• <b>Number of saving before transmission</b> (S301) = 2 (2 savings per frame)</li> <li>• Probe 1 alarm (S330) = 0 (alarm disabled) • Probe 2 alarm (S340) = 0 (alarm disabled)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Sampling period</b> (S321) = 300 (300s x2 =10 minutes) •</li> <li>• <b>Number of saving before transmission</b> (S301) = 0 (no periodical transmission) • Alarm temperature on probe 1 (S330) = 1 (low threshold) • Low threshold on probe 1 (S333) = 100 (in tenth of °C) • Low threshold hysteresis on probe 1 (S334) = 50 (in tenth of °C) the alarm is raised only if my temperature exceeds 15 °C.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Sampling period</b> (S321) = 300 (300s x2 =10 min) •</li> <li>• <b>Number of samples before saving</b> (S320) = 6 (6 x 10 min = 1h) •</li> <li>• <b>Number of saving before transmission</b> (S301) = 3 (3 X 1h = 3h) •</li> <li>• Alarm temperature on probe 1 (S330) = 1 (low threshold) • Low threshold on probe 1 (S333) = 100 (in tenth of °C) • Low threshold hysteresis on probe 1 (S334) = 50 (in tenth of °C) the alarm is raised only if my temperature exceeds 15 °C.</li> </ul>
			See here under explanation

WARNING: the number of data per frame depends on the network used. Here the case is available on a Sigfox Network.



To program registers, here are the steps to follow depending on the chosen mode.



Example of possible configurations:

Case (no 100% alarm) with 2 probes activated	Associated configuration	Theoretical number of periodical frame sent per day
<ul style="list-style-type: none"> <li>Reading/sampling : 10 minutes •</li> <li>Historisation : every hour (so each 6 readings) •</li> <li>Transmission : twice a days (each 2 historisations)</li> </ul>	<ul style="list-style-type: none"> <li>321 = 300</li> <li>320 = 6</li> <li>301 = 2</li> </ul>	12 frames
<ul style="list-style-type: none"> <li>Reading/sampling : 10 minutes •</li> <li>Historisation : at each reading •</li> <li>Transmission : maximum allowed per frame (here in Sigfox RC1)</li> </ul>	<ul style="list-style-type: none"> <li>321 = 300</li> <li>320 = 1</li> <li>301 = 2</li> </ul>	72 frames
<ul style="list-style-type: none"> <li>Reading/sampling : 5 minutes •</li> <li>Historisation : every 15 minutes (so each 3 readings) •</li> <li>Transmission : every half-hour (so each 2 historisations)</li> </ul>	<ul style="list-style-type: none"> <li>321 = 150</li> <li>320 = 3</li> <li>301 = 2</li> </ul>	48 frames
<ul style="list-style-type: none"> <li>Reading/sampling : each hour •</li> <li>Historisation : at each reading •</li> <li>Transmission : at each historisation</li> </ul>	<ul style="list-style-type: none"> <li>321 = 1800</li> <li>320 = 1</li> <li>301 = 1</li> </ul>	24 frames
<ul style="list-style-type: none"> <li>Reading/sampling : each hour •</li> <li>Historisation : at each e reading •</li> <li>Transmission : every 2 hours (so each 2 historisations)</li> </ul>	<ul style="list-style-type: none"> <li>321 = 1800</li> <li>320 = 1</li> <li>301 = 2</li> </ul>	12 frames
<ul style="list-style-type: none"> <li>Reading/sampling : every minute •</li> <li>Historisation : every 5 minutes (so each 5 sample)</li> <li>Transmission : every 10 minutes (so each 2 historisations)</li> </ul>	<ul style="list-style-type: none"> <li>321 = 30</li> <li>320 = 5</li> <li>301 = 2</li> </ul>	144 frames
<ul style="list-style-type: none"> <li>Reading/sampling : every 10 minutes •</li> <li>Historisation : each sample •</li> <li>Transmission : each historisation</li> </ul>	<ul style="list-style-type: none"> <li>321 = 300</li> <li>320 = 1</li> <li>301 = 1</li> </ul>	144 frames

**Reminder:** In Sigfox RC1, the technology enables to have 5 samples in a frame (so 2 samples per probe if the probes are activated). If only one probe is activated, it is possible to configure 5 in register S301 without losing data. If the 2 probes are activated, it is mandatory to configure at maximum 2 in the register S301 to not lose data. If there is too much data for the capacity of the frame, the flag “configuration incoherency” will appear in the concerned frame and the oldest samples will be lost.



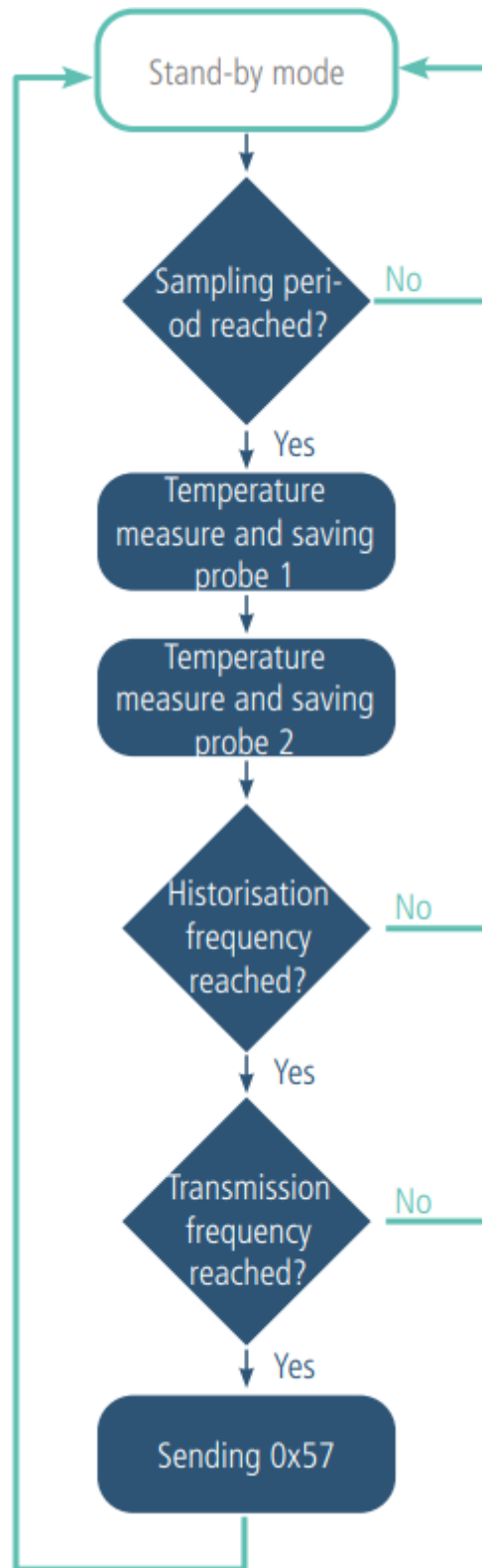
## 2.2.1 Periodical transmission with or without historisation

The product enables to measure and send the data from the probe following the diagram bellow. This periodical transmission can be done with or without historisation of the data.

The product enables to activate or deactivate a probe. The 0x57 frame will be different depending if 1 or 2 probes are activated.

Parameters associated to this mode are:

- Sampling period (register S321), historisation frequency (register S320) and transmission frequency (register S301)
- Activation of the probes (register S324).
-



Example without historisation :

Register	Encoding	Value	Result
S321	Decimal	1800	1 sample every hour (1800 x 2 seconds = 60 minutes)
S320	Decimal	1	1 historisation for each sample
S301	Decimal	1	1 transmission for each historisation
S324	Decimal	3	The 2 probes are activated

In this example:

- 1 sample (reading) every hour (1800 x 2 seconds = 60 minutes)
- 1 historisation at each sample and the frame is sent immediately (so every hour)
- The 2 probes are activated so the product will read the temperature on the 2 probes every hour

Example with historisation:

Register	Encoding	Value	Result
S321	Decimal	1800	1 sample every hour (1800 x 2 seconds = 60 minutes)
S320	Decimal	1	1 historisation for each sample
S301	Decimal	12	1 transmission every 12 historisations
S324	Decimal	3	The 2 probes are activated

In this example:

- A sample (reading) every hour (1800x2secondes = 60 minutes)
- An historisation done at each sampling (so every hours)
- A transmission is done every 12 historisations (so every 12 hours, so 2 times a day)
- The 2 probes are activated so the product will read the temperature on the 2 probes every

## 2.2.2 Periodical transmission with redundancy

The product enables to add redundancy in the frame sent (cf diagram bellow). Thanks to the redundancy the product will save samples locally in order to resend them in the next frame.

Parameters associated to this mode:

- Sampling period (register 321), historisation frequency (register 320) and transmission frequency (register 301)
- Activation of the probes (register 324).
- Number of samples to be repeated from a frame to another (register 323).

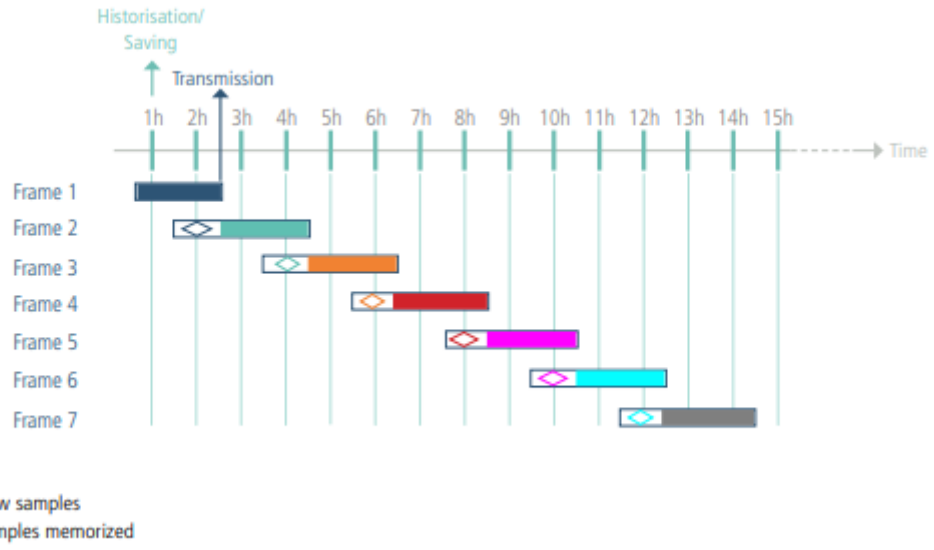
When redundancy is activated, the frame will contain the number of bytes corresponding to the total number of samples, so S301+S323. At the start-up of the product, bytes assigned to the redundant samples will be filled with zeros as long as there is no memorized samples.

### Example with redundancy:

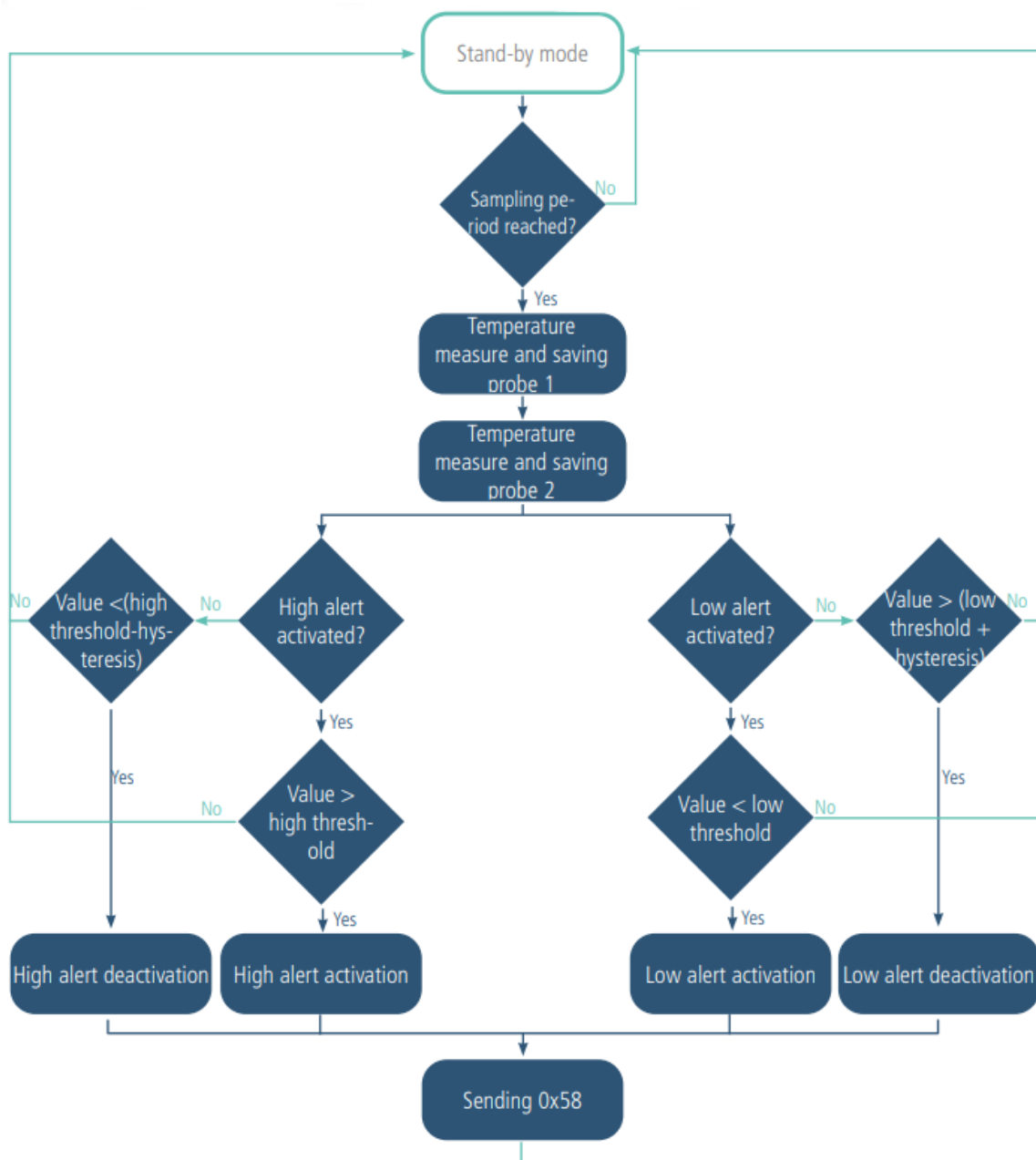
Register	Encoding	Value	Result
S321	Decimal	1800	A sample every hour (1800 x 2 seconds = 60 minutes)
S320	Decimal	1	1 historisation at each sampling
S301	Decimal	2	1 transmission every 2 historisations
S324	Decimal	3	The 2 probes are activated
S323	Decimal	1	1 samples are repeated in each frame

In this example:

- A sample (reading) every hours (1800 x 2 seconds = 60 minutes)
- A historisation at each sampling
- A transmission done every 2 historisations (so every 2 hours)
- 2 probes are activated
- The product will send 2 new samples measured every hour and 1 memorized sample



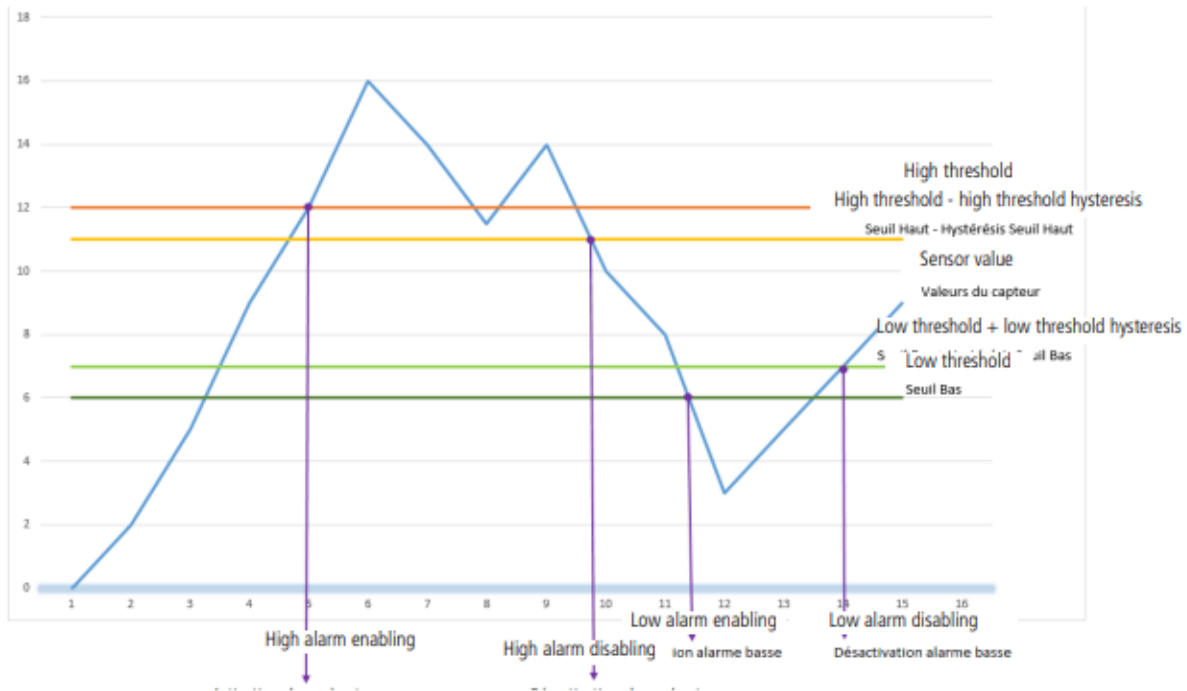
The product enables the detection of a threshold overpassed (high and low) for each probe, as described in the diagram below:



The sampling period (reading) enables to determine when the product will do the temperature measure and so the frequency at which the product will detect an overpassed threshold.

The product will send the frame when a threshold is overpassed but also when temperature comes back to normal (cf status alarm).

Explication of the thresholds and their hysteresis:



The settings associated with this mode of operation are:

- Sampling period (register 321).
- The activation of the probes (register 324).
- Alarm configuration of the probe 1 (register 330) and probe 2 (register 340).
- High threshold of the probe 1 (register 331) and probe 2 (register 341).
- Hysteresis for the high threshold of the probe 1 (register 332) and probe 2 (register 342).
- Low threshold of the probe 1 (register 333) and probe 2 (register 343).
- Hysteresis for the low threshold of the probe 1 (register 334) and probe 2 (register 344).

Example:

Register	Encoding	Value	Result
S301	Decimal	0	Alarm mode
S321	Decimal	1800	A sample of the temperature every hour
S324	Decimal	3	The 2 probes are activated
S330	Decimal	3	An alarm is activated on high and low threshold on the probe 1
S331	Decimal	700	High threshold is 70°C

Register	Encoding	Value	Result
S332	Decimal	50	Hysteresis of the high threshold is 5°C, so the come back to normal is at 65°C
S333	Decimal	100	Low threshold is 10°C
S334	Decimal	20	Hysteresis of the low threshold is 2°C, so the come back to normal is at 12°C
S340	Decimal	2	An alarm is activated on high threshold only on probe 2
S341	Decimal	235	High threshold is 23.5°C
S342	Decimal	35	Hysteresis of the high threshold is 3.5°C, so the come back to normal is at 20°C
S343	Decimal	0	No low threshold determined
S344	Decimal	0	No low threshold determined

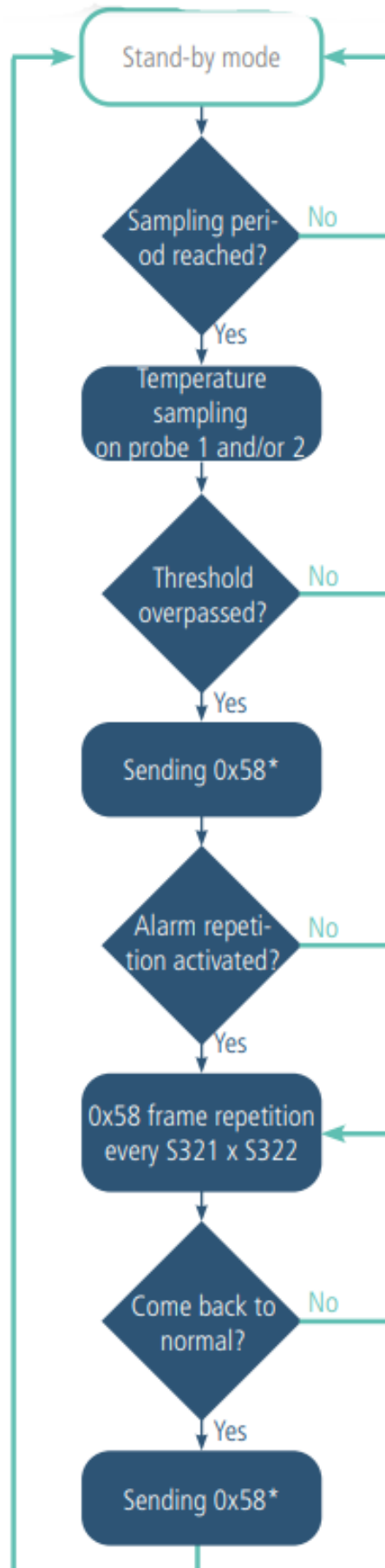
In this example:

- The product measure the temperature on the 2 probes every hour
- On probe 1, there is a high alert at 70°C with a come back to normal at 65°C and a low alert at 10°C with a come back to normal at 12°C
- On probe 2, there is only a high alert at 5°C with a come back to normal at 20°C.

## 2.2.4 Transmission on threshold overpassed with alarm repetition

The product enables the detection of a threshold overpassed (high and low) for each probe and to repeat this alert depending on a determined period (register S321 x S322).





Settings associated to this operating mode are:

- Sampling period (register 321),
- Alarm repetition (register 322),
- Activation of the probes (register 324).
- Alarm configuration on probe 1 (register 330) and probe 2 (register 340).
- High threshold on the probe 1 (register 331) and probe 2 (register 341).
- Hysteresis for high threshold on probe 1 (register 332) and probe 2 (register 342).
- Low threshold on the probe 1 (register 333) and probe 2 (register 343).
- Hysteresis for low threshold on probe 1 (register 334) and probe 2 (register 344).

Example:

Registers	Encoding	Value	Result
S301	Decimal	0	Alarm mode
S324	Decimal	1	Only probe 1 is activated
S330	Decimal	3	High and low threshold activated on probe 1
S331	Decimal	700	High threshold is 70°C
S332	Decimal	50	Hysteresis for high threshold is 5°C, the come back to normal is at 65°C
S333	Decimal	100	Low threshold is 10°C
S334	Decimal	20	Hysteresis for low threshold is 2°C, the come back to normal is at 12°C
S321	Decimal	300	A sampling is done every 10 minutes (300 x 2 seconds = 10 minutes)
S322	Decimal	2	Alarm will be sent every 2 sampling if always activated

In this example:

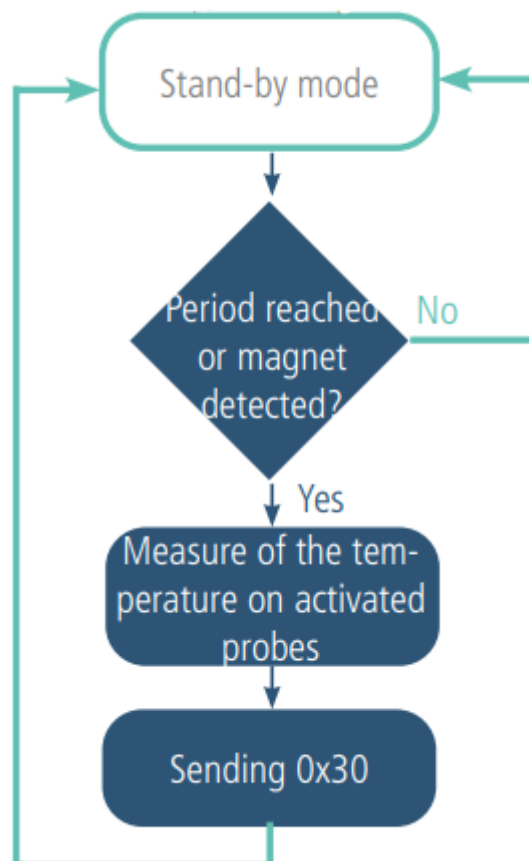
- The product measure temperature only on probe 1
- On probe 1, there is a high threshold at 70°C with a come back to normal at 65°C and a low threshold at 10°C with a come back to normal at 12°C

- A sampling (reading) every 10 minutes (300 x 2 seconds = 10 minutes)
- As long as the alarm is active (threshold always overpassed), this alarm will be repeated every 2 samples (so every 20 minutes).

\*The “alarm status” byte gives the information if the alert is activated or not and so allows to dissociate a 0x58 frame sent to alert that the threshold is overpassed from a 0x58 frame sent to inform about come back to normal.

## 2.2.5 Transmission of the Keep Alive frame

In the event mode, it is possible that the product would never send data frames. So to be sure that it is working properly a Keep Alive frame is transmitted regularly (following diagram). Furthermore, in order to enable to measure the temperature on demand it is possible to cause the sending of this frame using a magnet on the product during 3 seconds (at the same place of the start-up) or sending a 0x05 frame.



Parameters associated to this operating mode :

- Activation of the probes (register 324).

- Transmission period of the keep alive frame, from 20 seconds to 7 days (register 300).

Example:

Register	Encoding	Value	Result
S300	Decimal	8640	The keep alive frame is sent every: 8640x10 seconds =1440min so 24h (so once per day)

## 2.3. Operation of the LED

Mode	Red LED state	Green LED state
Product in Park mode	OFF	OFF
Magnet detection process in PARK mode	OFF	ON from detection of the magnet during 5 seconds
Product start (after detection of the magnet)	OFF	Rapid flashing 6 cycles, 100 ms ON / 100 ms OFF
Detection of the correct wiring of the probes at startup	10 seconds ON if a default is detected	10 seconds ON if no default is detected
Switching to the Command mode	Continuously lit	Continuously lit
Battery level low	Flashing (0.5s ON every 60s)	
Product faulty (return to factory)	Fixed ON	
Magnet detection in PRODUCTION mode	OFF	Flashing 50ms ON / 50ms OFF after 3 seconds of magnet detection

## 3. REGISTERS AND FRAME DESCRIPTION

To know the content of the registers and of each frames (uplink and downlink) of the product, refers to the TECHNICAL REFERENCE MANUAL of the TEMP.

## 4. CONFIGURATION AND INSTALLATION

### 4.1. Configuration and installation of the transmitter

To configure the product, it is recommended to use the IoT Configurator (android and Windows application).

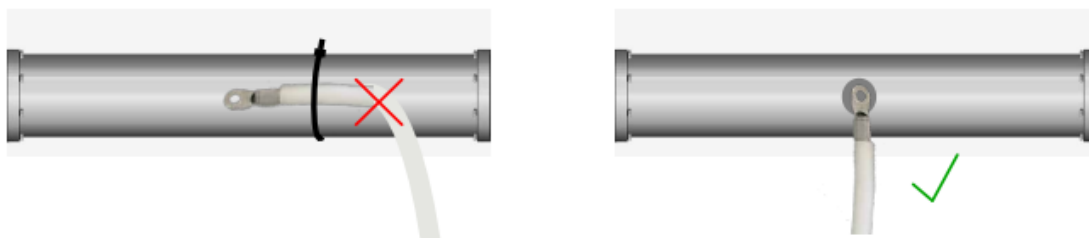
- Google Play : <https://play.google.com/store/apps/details?id=com.adeunis.IoTConfiguratorApp>
- Windows 10: <https://www.com/telechargements/>

To install the product, please refers to the INSTALLATION GUIDE Adeunis available on the website.

### 4.2. Installation of the remote probe

To ensure an optimal performance of the remote probe, please, follow the installation recommendations here-after:

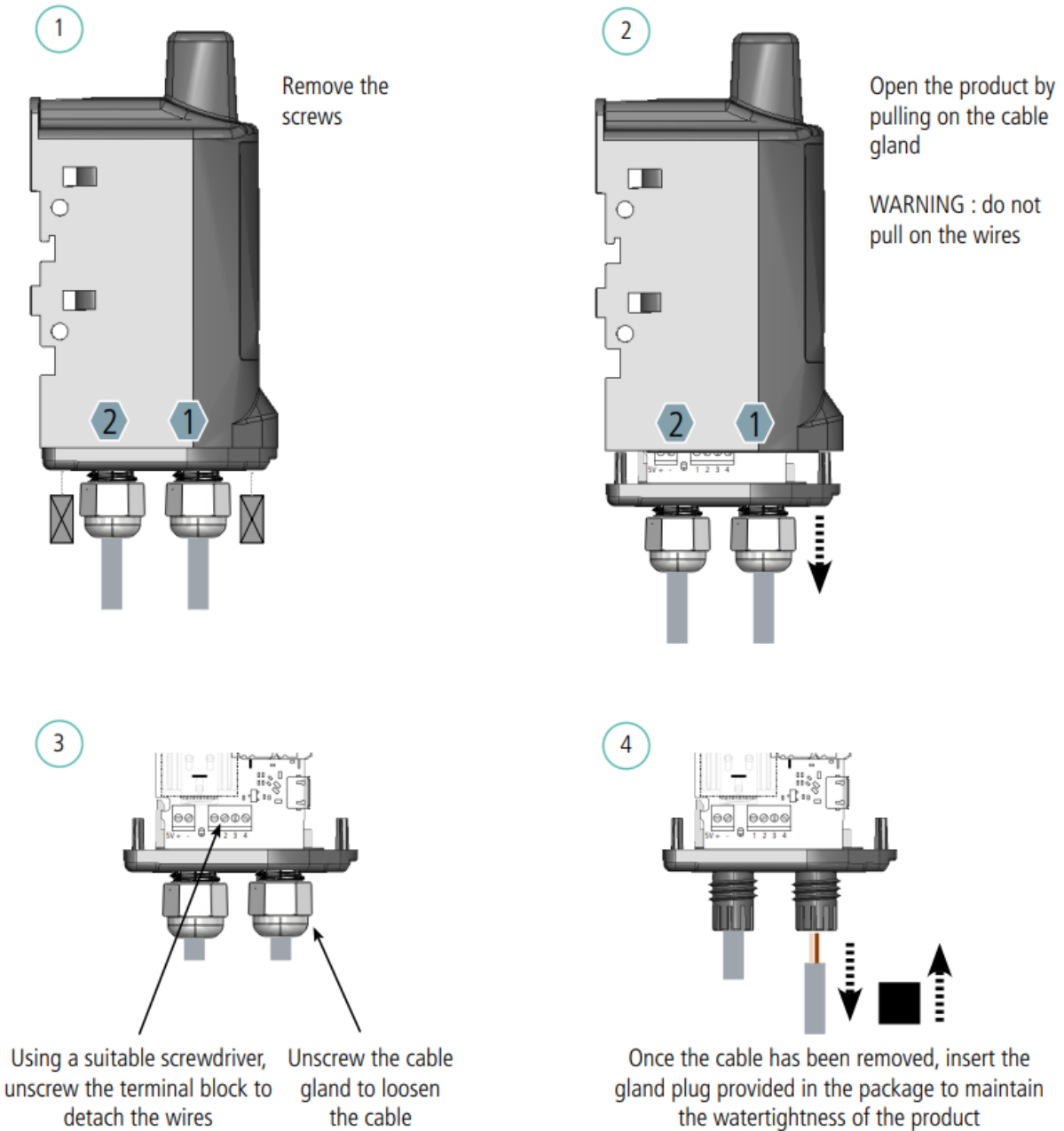
- Install the contact probe on the surface to monitor
- Place the probe to be sure that it is the reinforced section that is in contact with hot surfaces and not the wire (cf illustration hereunder)
- Use the appropriate fixation for the monitored surface (thermal paste, heat resistant collars )



**WARNING** : the probe must be manipulated at room temperature, risk of damage if handled in negative temperatures or above 90°C

## 5.1. Disconnect a probe

To disconnect a probe, please follow these instructions:

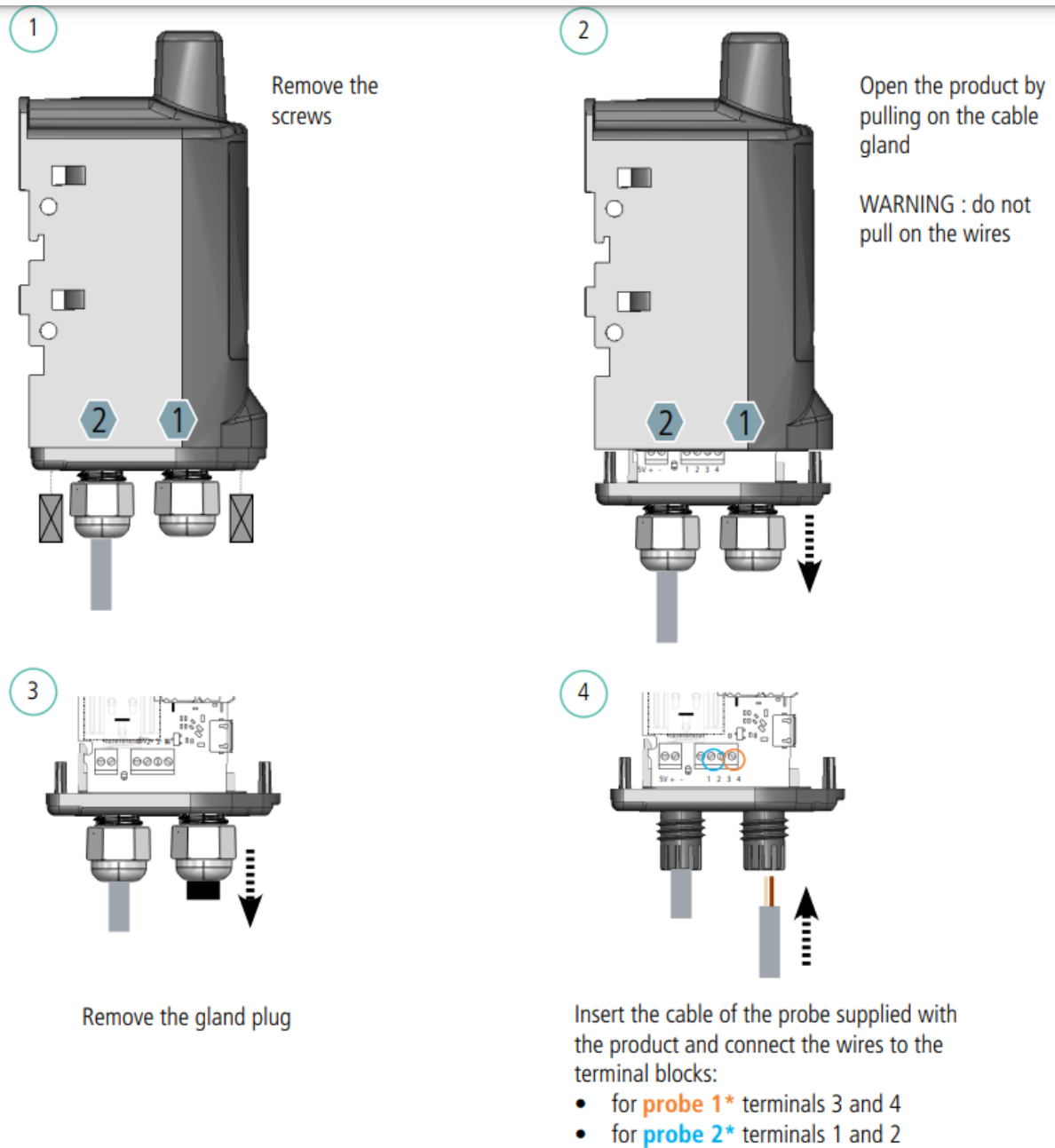


**CAUTION:** To maintain the IP 68 it is important to screw the cable glands fully and screw the screws with a PZ.1 head and a tightening torque of 0.9 N.m.

As a reminder the probe 1 is on the rounded side of the housing, the probe 2 is on the flat side of the housing.

## 5.2. wiring a probe

In order to wire a probe, please follow these instructions:



**CAUTION:** To maintain the IP 68 it is important to screw the cable glands fully and screw the screws with a PZ.1 head and a tightening torque of 0.9 N.m.

As a reminder the probe 1 is on the rounded side of the housing, the probe 2 is on the flat side of the housing.

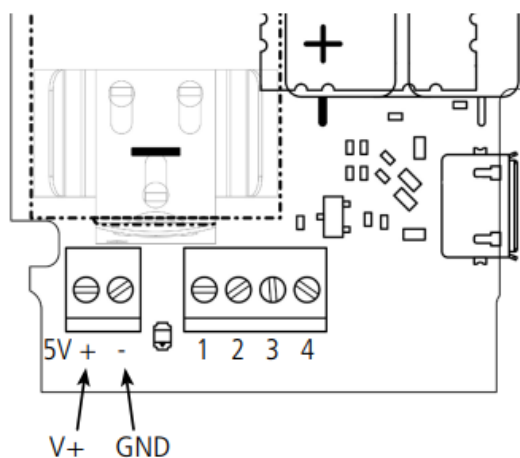
\*The wiring of the probes at the right place is important to match the associated registers and for the interpretation of the results (cf. Technical Reference Manual, Registers).

### 5.3. Wiring external supply

A terminal is present in the product to connect an external supply in order to:

- Improve the autonomy of the product
- Send more frames more

Connect the power cable to the “+” terminal block (V +) with a power supply between 4.5 V and 6.5 V and connect the earth to the “-” (GND).



N.B .: To power the product via an external power supply it is necessary to disconnect a probe in order to pass the cable of the power supply in the cable gland.

N.B: It is not necessary to disconnect the battery when the external power supply is connected.

## DOCUMENT HISTORY

Version	Contents
V1.0.0	Creation
V1.0.1	Update Declaration of Conformity
V1.2.0	Update Part 3
V2.0.0	Changes after update RTU & APP
V2.0.1	Two external probes product and changes after APP updates
V3.0.0	Add of applicative functionalities (historisation, redundancy, alarm repetition)
V3.0.1	Hardware changes: IP68 casing, external supply and new FANSO battery
V3.0.2	Change in electrical standard part
V3.1.0	New APP version



Version	Contents
V3.1.1	More information about the battery