

SenNet IoT Pulse Counter Sigfox

General description

SenNet IoT Pulse Counter Sigfox is a device that has 2 input standalone for impulse, type supported are reed or transistorized output, specific from watermeter / electricity meter / heat meter etc..

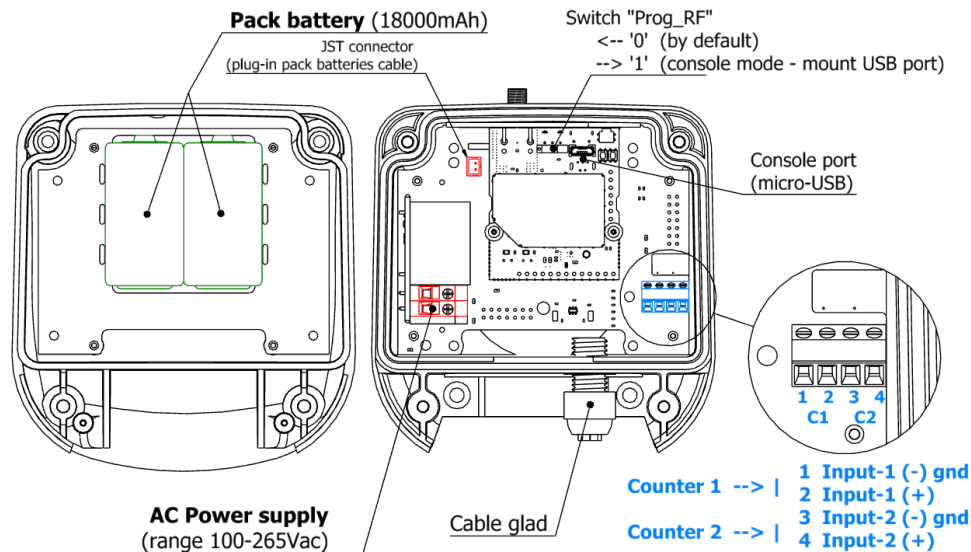
Use sigfox network to connect with your cloud, you only need define interval to send.

These are the reference at depend of power supply type battery or AC power:

| Reference | Power supply type |
|-----------------------------|---------------------------------------|
| Pulse Counter Sigfox bat ++ | Battery 3.6v@18000mAh (LS26500 x2) |
| Pulse Counter Sigfox AC | AC Power supply 100-265Vac |

Wired & Setup

For transistorized output type is necessary take care polarity, and follow terminal's polarity.



Basic steps to install:

1. Set interval to send (**by default 15 minutes**).
2. Set the type of uplink message , **by default type 1** (counter 1 value) ,or type 2 (counter 1 value + counter 2 value).
3. Take note ID / PAC to sign the device on Sigfox Cloud.
4. Plug-in pack batteries to connector or AC power supply.

Setup parameters methods:

- Through downlink message (see downlink message section) , recommend method.
- By cable micro-USB with PC console enter menu to set these parameters.

Input signals

This device is used to measure any type of meter with output pulse (reed or transistorized type) with low frequency.

| Type input pulse | |
|-------------------------------------|------------------------|
| Maximum frequency | 10Hz |
| Type | Reed / transistorizado |
| Leakage current (close reed) | 40uA * |

*For industrial environment it is possible to increase this leakage current to avoid detecting electrical noise like an impulse. Contact with our support team.

Battery life

This device is designed to have a very long life. Life of batteries will depend on three variables: type of message, interval to send, number of impulses read. Adjust interval to send and type of message by customer requirement.

| Battery life estimation | |
|------------------------------------------|----------|
| Type message 1 / 20 minutes sends | 6 years* |
| Type message 2 / 20 minutes sends | 5 years* |

*Main condition, low rate of pulse.

When synchronization is enabled, a download message per week is necessary to keep accuracy time on the device, this feature reduces around 5% battery life.

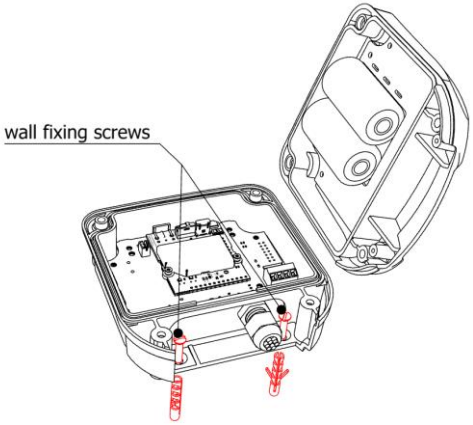
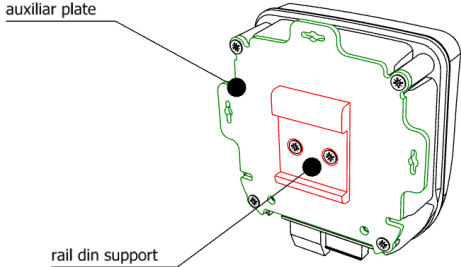
If your rate of pulse counter is very high, use power supply version.

Holding case

| | |
|----------------------------|---------------------------|
| IP Grade | IP-60* (internal antenna) |
| Temperature details | |
| Working temperature | -20°C...+70°C |
| Store temperature | -20°C...+75°C |
| Holding | |
| Dimensions | 119 x 111 x 53 mm |
| Type mount | Wall or DIN rail |
| Plastic Material | ABS – V0 |

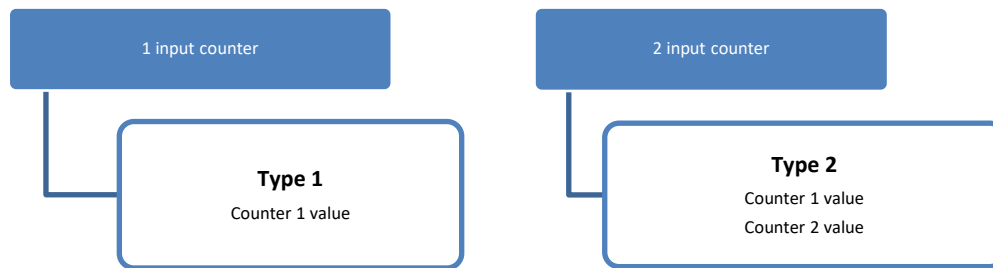
*If you need an upper grade contact with our support team.

* If the device has an external antenna, it must be isolated separately.

| wall mount (by default) | rail DIN mount (accessory) |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
|  |  <p>*specify on your order</p> |

Type Message

SenNet IoT Pulse Counter Sigfox is a very low power device capable to measure up to 2 impulse input. Client must select what kind of data will be uploaded to the platform, at depend of number input.



A common point in all types of messages is the head (defined with 2 bytes) that includes important information embedded in the message (type device/type message/errors.. etc). In the next table are defined the mean of these info-fields.

| Field Info | | | | | | | | | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---|---|-----------------------|----------------|-------------------------|---|--------------------|---|---------------------------------------------------------|--------------------|---|---------------------------------------------------------------------------------------------------------------------|--|--|
| Byte | | | Byte 1 | | | | | Byte 2 | | | | | | | | | | |
| <u>Type Device</u> 01 - Easy Meter 02 – Pulse Counter 03 – Not defined 04 – Enviroment Sensor 05 – Not defined 06 – GW Modbus 07 – Not defined | | | <u>Type Message</u> type 0 (info) type 1 → Counter 1 type 2 → Counter 1,2 type 3 (not defined) type 4 (not defined) .. type 15 (not defined) | | | | Low level Battery | | High temperature > 50°C | | Downlink error | | <u>Type Remote Nodes</u> 0x00 – No local Network | | | <u>ID Remote Nodes</u> No Remote = 000 Type Message 0 (Debug) = 111 _b = 07 _d | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | <u>Feedback Error</u> | | | | | | | | | | | |
| Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | |
| | Byte1 Bit 7-6-5 | | | Byte1 Bit 4-3-2-1 | | | | Byte1 Bit 0 | Byte2 Bit 7-6 | | Byte2 Bit 5-4-3 | | | Byte2 Bit 2-1-0 | | | | |

Table 1

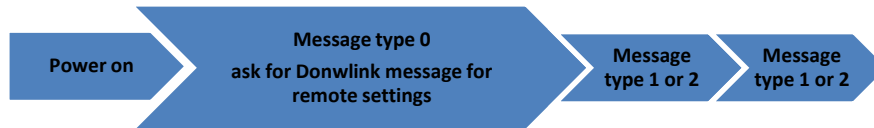
| Type 1 : Counter 1 value | | | | |
|--------------------------|-------------|---|-----------------|---|
| Field | Info | | Counter 1 value | |
| Type data | See Table 1 | | Maximum 65535 | |
| Byte | 1 | 2 | 3 | 4 |

| Type 2 : Counter 1 value | | | | | | |
|--------------------------|-------------|---|-----------------|---|-----------------|---|
| Field | Info | | Counter 1 value | | Counter 2 value | |
| Type data | See Table 1 | | Maximum 65535 | | Maximum 65535 | |
| Byte | 1 | 2 | 3 | 4 | 5 | 6 |

First message after power on the device is debug message with internal information about build firmware. This message must be not parser by client platform, and requeriment a donwlink message for remote settings.

| Type 0 : debug message | | | | | | |
|------------------------|-------------|---|-----------|------------|-------------|----------|
| Field | Info | | HW device | Version FW | Revision FW | Not used |
| Type data | See Table 1 | | | | | - |
| Byte | 1 | 2 | 3 | 4 | 5 | 6-9 |

Sequence of messages:



Downlink Message

It's possible set the device in the cloud without interacting with it locally, defining this type of downlink message and interval to send. That method is optional but it's not necessary.

| Byte | 1 | | 2 - 5 | 6 | 7 | 8 |
|-------|-----------------------|-------------------------------------------------------|----------------------|------------------------------------|----------------------------------|-----------------|
| Field | Setup byte (1byte) | | Set time (4bytes) | Type uplink Message (1 byte) | Interval to send (minutes) | Not Not used |
| Value | Bit 7 | 1 (by default) | {Time-Epox} | 01 02 | [10...59] | 0x00 |
| | Bit 6 | 1/0 enable/disable set Time (need sync every week) | | | | |
| | Bit 5 | 1/0 enable/disable set Type uplink Message | | | | |
| | Bit 4 | 1/0 enable/disable set Interval to send | | | | |
| | Bit 3 | 0 (by default) | | | | |
| | Bit 2 | 0 (by default) | | | | |
| | Bit 1 | 0 (by default) | | | | |
| | Bit 0 | 0 (by default) | | | | |

Example for downlink message:

B0 00 00 00 00 01 0F 00 → With this downlink message set the remote with type of message 01 and interval to send 15minutes.

Warranty

Satel Spain guarantees its products against all manufacturing defects for a period of 1 year.



No return of material will be accepted, nor will any equipment be repaired if it is not accompanied by a report (RMA) indicating the defect observed or the reasons for the return.

The warranty will be void if the equipment has suffered "misuse" or the storage, installation or maintenance instructions in this manual have not been followed. "Misuse" is defined as any use or storage situation contrary to the National Electrical Code or that exceeds the limits indicated in this manual.

Satel Spain declines all responsibility for possible damage to the equipment or to other parts of the installations and will not cover possible penalties derived from a possible breakdown, poor installation or "misuse" of the equipment. Consequently, the guarantee is not applicable to breakdowns produced in the following cases.

- Due to overvoltage and/or electrical disturbances in the supply.
- By water, if the product does not have the appropriate IP rating.
- For exposing the equipment to extreme temperatures, which exceed the operating or storage temperature limit.
- Due to a modification of the product by the client without prior notice to Satel Spain.

Faced with possible errors in this technical sheet, keep it updated in our website.