SenNet IoT Pulse Counter Sigfox

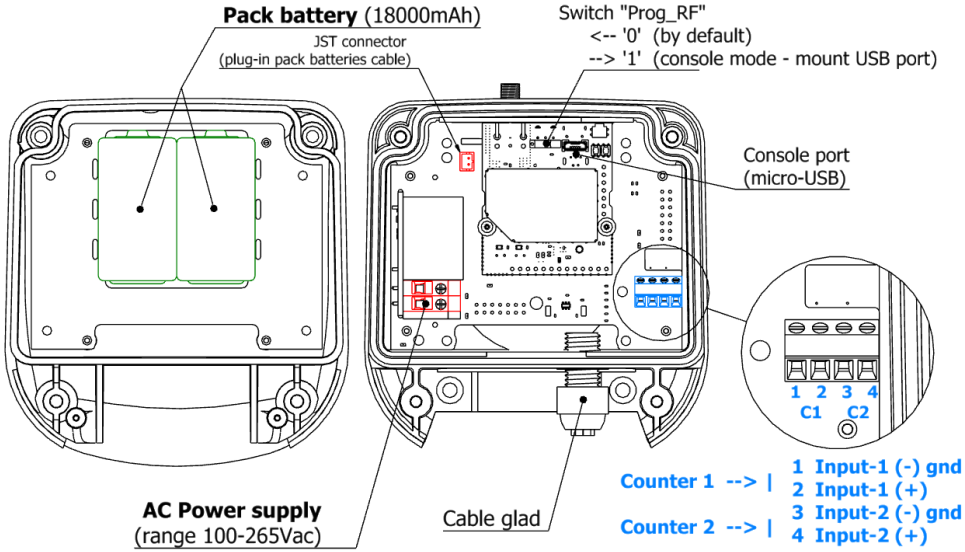
General description

SenNet IoT Pulse Counter Sigfox is a device that has 2 input standalone for impulse, type supported are reed or transitorized 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 intall:

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:

- Throught donwlink message (see donwlink message seccion) , 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 frecuency.

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

*For industrials enviroment is it possible increase this leakeage current to avoid detect electrical noise like an impulse. Contact with our support team.

Battery life

This device is desing to very long life. Life of batteries will depend of three variables:
type message , interval to send, number of impulses readed. Adjust interval to send and type of message by customer requeriment

Battery life estimation	
Type message 1 / 20 minutes sends	7 years*
Type message 2 / 20 minutes sends	6 years*

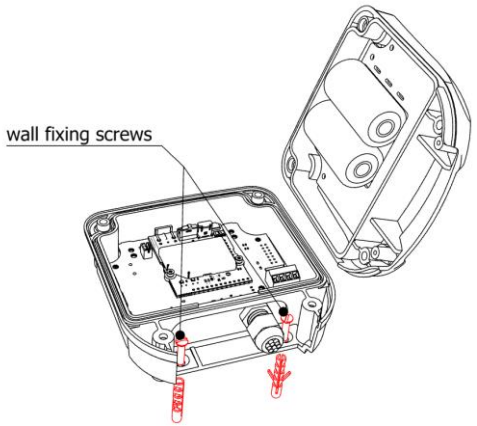
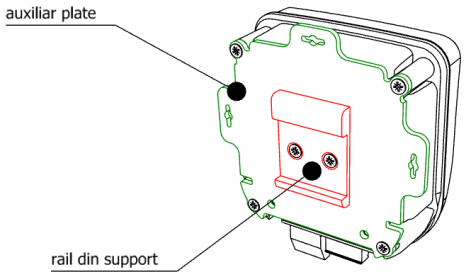
*Main condition, low rate of pulse.

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

Holding case

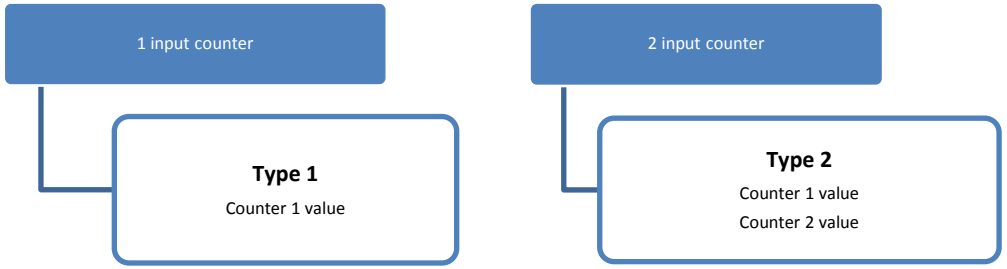
IP Grade	IP-60*
Temperature details	
Working temperature	-20ºC...+70ºC
Store temperature	-20ºC...+75ºC
Holding	
Dimensions	119 x 111 x 53 mm
Type mount	Wall or din rail
Plastic Material	ABS – V0

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

wall mount (by default)	rail din mount (accesory)
	 *specify on your order

Type Message

SenNet IoT Pulse Counter Sigfox is an 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**							
	Type Device 01 - Easy Meter **02 – Pulse Counter** 03 – Not defined 04 – Enviroment Sensor 05 – Not defined 06 – GW Modbus 07 – Not defined			**Type Message** 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 > 50ºC**	**Downlink error**		**Type Remote Nodes** 0x00 – No local Network			**ID Remote Nodes** No Remote = 000 Type Message 0 (Debug) = $111_b = 07_d$		
								Feedback Error											
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

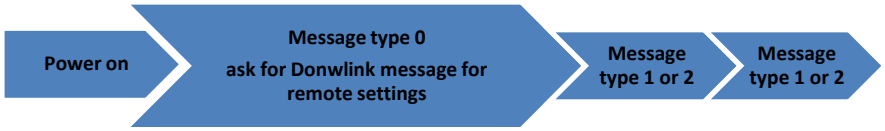
Type 1 : Counter 1 value				
Field	**Info**		**Counter 1 value**	
Type data	***See Table 1***		**Maximum 65535**	
Byte	**1**	**2**	**3**	**4**

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**

Secuence 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)		Not used (4 bytes)	Type uplink Message (1 byte)	Interval to send (minutes)	Not Not used
Value	Bit 7	1 (by default)	0x00 0x00 0x00 0x00	01 02	[10…59]	0x00
	Bit 6	0 (by default)				
	Bit 5	1/0 enable/disable set Type uplink Messsage				
	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.