

Senstick Temperature Only 1.0 LoRaWAN Protocol FW v1.x

1. LoraWAN CONFIG Payload (Uplink)

| | | | | | | | | | | |
|-------------------|------|--------|------|-------|----|-----|-----|----|----|------------|
| Parameter: | stat | period | movt | ackco | dr | fid | pid | hw | fw | SUM |
| Size: | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 9B |

| Parameter | Name | Size | Type | Default Value | Description |
|--------------------|--------|------|-------|----------------------|--|
| Status | stat | 1B | uint8 | 0x00 | Status Codes: 0x00 - OK Bit0 - Movement Detected Packet Bit1 - Movement Detected Confirmed Bit2 - Accelerometer Failure Bit3 - Temperature Sensor Failure Bit4 - NFC IC Failure Bit5 - EUI IC Failure Bit6 - Wrong Battery |
| Send Period | period | 1B | uint8 | 15 min | Data send period in minutes. |
| Movement Threshold | movt | 1B | uint8 | 0 | Movement threshold to send measurement. (31.25 x movt mg, 0 = OFF, range: 1 - 63) |
| Packet Confirm | ackco | 1B | uint8 | 24 | Request confirmed packed every N transmissions. 0 = OFF |
| Data Rate | dr | 1B | uint8 | 128 (ADR on, DR0) | Bit0-6 - DRx Bit7 - ADR status (0 = OFF, 1 = ON) |
| Family Id | fid | 1B | uint8 | 4 | Family Id |
| Product Id | pid | 1B | uint8 | 9 | Product Id |
| Hardware Version | hw | 1B | uint8 | 1.0 | Hardware version (hw / 10) |
| Firmware Version | fw | 1B | uint8 | 1.x | Firmware version (fw / 10) |

NOTE: For config packet LoRaWAN Port 3 is used.

2. LoraWAN DATA Payload (Uplink)

| | | | | |
|-------------------|------|----|-----|-------------|
| Parameter: | stat | t | bat | SUM |
| Size: | 1B | 2B | 1B | 3/4B |

| Parameter | Name | Range | Size | Type | Description |
|---------------|------|------------------|------|-------|--|
| Status | stat | 0 - 255 | 0/1B | uint8 | Status Codes: 0x00 - OK Bit0 - Movement Detected Packet Bit1 - Movement Detected Confirmed Bit2 - Accelerometer Failure Bit3 - Temperature Sensor Failure Bit4 - NFC IC Failure Bit5 - EUI IC Failure Bit6 - Wrong Battery |
| Temperature | t | -128.00 - 127.00 | 2B | int16 | Temperature (t / 100) |
| Battery Level | bat | 0 - 255 | 1B | uint8 | 0 = 800mV, 255 = 1800mV |

NOTES:

- For regular packet LoRaWAN Port 2 is used.
- Status byte is only visible if any of the status modes is triggered.

3. LoRaWAN CONFIG Payload (Downlink) - Send Period

| | | |
|-------------------|-------|------------|
| Parameter: | sendp | SUM |
| Size: | 1B | 1B |

| Parameter | Name | Size | Type | Default Value | Description |
|-------------|-------|------|-------|---------------|------------------------|
| Send Period | sendp | 1B | uint8 | 15 min | Send period in minutes |

DEFAULT DOWNLINK PACKET: 0F

NOTE: For config packet LoRaWAN Port 3 is used.

4. LoRaWAN CONFIG Payload (Downlink) – General setup

| | | | | | |
|-------------------|--------|------|-------|----|------------|
| Parameter: | period | movt | ackco | dr | SUM |
| Size: | 1B | 1B | 1B | 1B | 4B |

| Parameter | Name | Size | Type | Default Value | Description |
|--------------------|--------|------|-------|----------------------|---|
| Period | period | 1B | uint8 | 15 min | Data send period in minutes |
| Movement Threshold | movt | 1B | uint8 | 0 | Movement threshold to send measurement. (31.25 x movt mg, 0 = OFF, range: 1 - 63) |
| Packet Confirm | ackco | 1B | uint8 | 24 | Request confirmed packed every N transmissions, 0 = OFF |
| Data rate | dr | 1B | uint8 | 128 (ADR on, DR0) | Bit0-6 – DRx Bit7 – ADR status (0 = OFF, 1 = ON) |

DEFAULT DOWNLINK PACKET: 0F 00 18 80

NOTE: For config packet LoRaWAN Port 3 is used.

5. LoRaWAN CONFIG Payload (Downlink) - Factory Defaults

| | | |
|-------------------|------|------------|
| Parameter: | fdef | SUM |
| Size: | 2B | 2B |

| Parameter | Name | Size | Type | Default Value | Description |
|------------------|------|------|--------|---------------|---|
| Factory Defaults | fdef | 2B | uint16 | 0xEEEE | Erase NFC EEPROM and restore default settings |

DEFAULT DOWNLINK PACKET: EE EE

NOTE: For config packet LoRaWAN Port 3 is used.

6. LoRaWAN CONFIG Payload (Downlink) - Reboot

| | | |
|-------------------|--------|------------|
| Parameter: | reboot | SUM |
| Size: | 2B | 2B |

| Parameter | Name | Size | Type | Default Value | Description |
|-----------|--------|------|--------|---------------|------------------------|
| Reboot | reboot | 2B | uint16 | 0xFFFF | Start REBOOT procedure |

DEFAULT DOWNLINK PACKET: FF FF

NOTE: For config packet LoRaWAN Port 3 is used.

7. TTN Downlink Guide

Overview Live data **Messaging** Location Payload formatters Claiming General settings

Uplink **Downlink**

Schedule downlink

Insert Mode

Replace downlink queue
 Push to downlink queue (append)

FPort *

3

Payload type

Bytes JSON

Payload

00 00 00 00 00 |

The desired payload bytes of the downlink message

Confirmed downlink

Schedule downlink

Application > End Device > Messaging > Downlink