

TempGuard R3

User Manual

Unlocking the huge potential of mass market IoT

Content

- Warnings
- Installation
- Usage
- Uplink
- Downlink
- Support

Warnings

- MAINTENANCE
 - In case of malfunction, deliver the device to the supplier. Do not open the device.
- TRANSPORTATION
 - Do not remove packing material and do not repack the device unless necessary. Contact the shipping agent before transportation. The device contains a lithium metal battery which contains about 2.7 grams of lithium.
- DISPOSAL
 - Return the device to a disposal station which collects electronics waste and batteries.

Asennus

1. Save the identifier and the key of the device.
 - 1.1 The identifier and the key are on the label on the back cover of the device.
 - 1.2 You can also read the identifier and the key using the QR code.
2. Connect the probes to the radio transmitter.
3. Install the radio transmitter.
4. Install the probes.
5. Open the enclosure.
6. Remove the battery pull tab and close the enclosure.

Usage

- If the device has been connected to FoxerIoT platform, you do not need to do anything else.
- Otherwise you must register the device using the identifier and the key of the device at backend.sigfox.com. For further details, please see the documentation of Sigfox.

Uplink

BYTES	DESCRIPTION
1 – 2	Temperature, enclosure
3 – 4	Temperature, left
5 – 6	Temperature, right

Uplink

- Conversion formulas
 - Temperature

<value> / 10 – 40

(C)

Uplink

- Example

- Message

0x027102750279

- Temperature, enclosure

$0x271 / 10 - 40 = 625 / 10 - 40 = 22,5 \text{ C}$

- Temperature, left

$0x275 / 10 - 40 = 629 / 10 - 40 = 22,9 \text{ C}$

- Temperature, right

$0x279 / 10 - 40 = 633 / 10 - 40 = 23,3 \text{ C}$

Downlink

- The settings of the device can be updated with the downlink message
 - The device requests new settings every 50 messages
- You must be very careful when you update the settings
 - The settings affect both the subscription and the battery life of the device
- The downlink message is optional
 - If the downlink message is not sent, the device continues with the current settings

Downlink

- By default, the device measures and transmits every 30 minutes
- The measurement and transmission intervals can be adjusted with the settings
 - The device transmits if the temperature has changed more than the threshold after the previous transmission
- Check that the new settings are valid before applying them
 - The measurement interval cannot be longer than the transmission interval
 - The transmission interval must be multiple of the measurement interval
- If the new settings are not valid, the device continues with the current settings

Downlink

BYTES	DESCRIPTION
1	Transmission interval
2	Measurement interval
3	Temperature delta threshold, enclosure
4	Temperature delta threshold, left
5	Temperature delta threshold, right
6 – 8	Not applicable, set to zeroes

Downlink – Transmission Interval

VALUE	INTERVAL	VALUE	INTERVAL
0	NOT APPLICABLE	8	NOT APPLICABLE
1	10 MIN	9	NOT APPLICABLE
2	20 MIN	A	NOT APPLICABLE
3	30 MIN (DEFAULT)	B	NOT APPLICABLE
4	1 H	C	NOT APPLICABLE
5	2 H	D	NOT APPLICABLE
6	NOT APPLICABLE	E	NOT APPLICABLE
7	NOT APPLICABLE	F	NOT APPLICABLE

Downlink – Measurement Interval

VALUE	INTERVAL	VALUE	INTERVAL
0	NOT APPLICABLE	8	NOT APPLICABLE
1	10 MIN	9	NOT APPLICABLE
2	20 MIN	A	NOT APPLICABLE
3	30 MIN (DEFAULT)	B	NOT APPLICABLE
4	1 H	C	NOT APPLICABLE
5	2 H	D	NOT APPLICABLE
6	NOT APPLICABLE	E	NOT APPLICABLE
7	NOT APPLICABLE	F	NOT APPLICABLE

Downlink

- Conversion formulas
 - Temperature delta threshold

$\langle \text{arvo} \rangle / 10$

(C)

Downlink

- Default settings

- Message **0x 0303 0000 0000 0000**
- Transmission interval **0x03 = 30 MIN**
- Measurement interval **0x03 = 30 MIN**
- Temperature delta threshold, enclosure **Not applicable**
- Temperature delta threshold, left **Not applicable**
- Temperature delta threshold, right **Not applicable**

Downlink

- Example

- Message
- Transmission interval
- Measurement interval
- Temperature delta threshold, enclosure
- Temperature delta threshold, left
- Temperature delta threshold, right

0x 0301 0305 0A00 0000

0x03 = 30 MIN

0x03 = 10 MIN

0x03 / 10 = 3 / 10 = 0.3 C

0x05 / 10 = 5 / 10 = 0.5 C

0x0A / 10 = 10 / 10 = 1.0 C

Support

- If you need support, please contact the supplier.
- If you do not know the supplier, please contact the manufacturer:
 - Connected Finland
 - support@connectedfinland.fi
 - +358 10 311 5800