

1. General description

The @RFID's IOTag sensor series' THTag BLE+NFC are a family of products with ARM Cortex-M0+ microprocessor optimized for temperature and humidity monitoring and logging with Bluetooth Low Energy and NFC (for pairing and device ID only) interface.

The device is an effective system solution for wide field of applications.

The solution includes a mobile app, a cloud-based data warehousing service and a choice of data loggers for temperature-sensitive storage monitoring, logistics and distribution.



Mifare is a Trademark of NXP, ARM is a Trademark of ARM Holding, Bluetooth is ® Trademark of Bluetooth SIG Inc.

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2. Features and benefits

■ System

- ◆ ARM Cortex-M0+ processor running at frequencies of up to 8 MHz
 - 275 μ A/MHz running from flash memory
 - 150 μ A/MHz running from RAM
 - Serial Wire Debug (SWD) Memory
 - 256 kB or 128 kB embedded flash program memory
 - 16 kB or 32 kB RAM Communication interfaces
 - Store up to 15k data logs

- ◆ 2.4 GHz transceiver
 - 93 dBm sensitivity in Bluetooth® low energy mode
 - 250 kbps, 1 Mbps, 2 Mbps supported data rates
 - TX Power -20 to +4 dBm in 4 dB steps
 - TX Power -30 dBm Whisper mode
 - 13 mA peak RX, 10.5 mA peak TX (0 dBm)
 - 9.7 mA peak RX, 8 mA peak TX (0 dBm) with DC/DC
 - RSSI (1 dB resolution)

- ◆ NFC/RFID ISO 14443 type A interface
 - ISO/IEC14443A part 1 to part 3 compatible
 - MIFARE (Ultralight) EV1 compatible
 - NFC Forum Type 2 compatible
 - Easy interfacing with standard user memory space READ/WRITE commands

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- Ultra low power consumption
 - 6.3mA - TX at -4dBm (3V using on-chip DC-DC)
 - 8.0mA - TX at 0dBm (3V using on-chip DC-DC)
 - 11.8mA – TX at +4dBm (3V using on-chip DC-DC)
 - 9.7mA – RX (3V using on-chip DC-DC)
 - 13mA – RX at 1Mbps (No DC-DC)
 - 10.5mA – TX at 0dBm (No DC-DC)
 - 0.6µA – SYSTEM-OFF, no RAM retention
 - 1.2µA - SYSTEM-OFF, 8KB RAM retention
 - 2.6µA - SYSTEM-ON, All peripherals in idle mode

- Unique device serial number for identification

3. Static characteristics

$T_{amb} = 40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$, unless otherwise stated.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Supply pins						
V _{DD}	supply voltage			3.0		V
I _{DD}	supply current		-	-	-	µA
I _{L(off)}	off-state leakage current		-	-	50	nA
I _{DD(pd)}	power-down mode supply current	Deep power-down mode	-	3	-	µA

THTag BLE+NFC – Temperature and Humidity sensor, Bluetooth Low Energy and NFC combo communication

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4. Applications

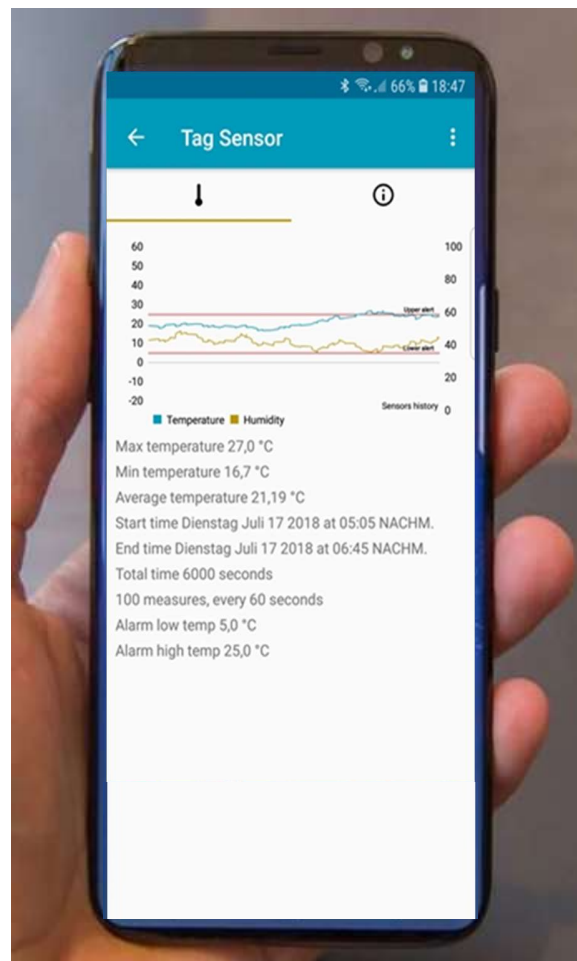
- Temperature and humidity measurement
- Temperature and humidity logging
- Temperature and humidity controlled transport
- Temperature and humidity controlled storage
- New Building drying process monitoring
- Labs;
- Workshop;
- Museums ;
- Pharmaceutical and medical applications;
- Fresh food transportation;
- Pharmaceutical supply chain
- Water damage restoration humidity and temperature control

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5. Temperature + Humidity Monitoring with your Smartphone

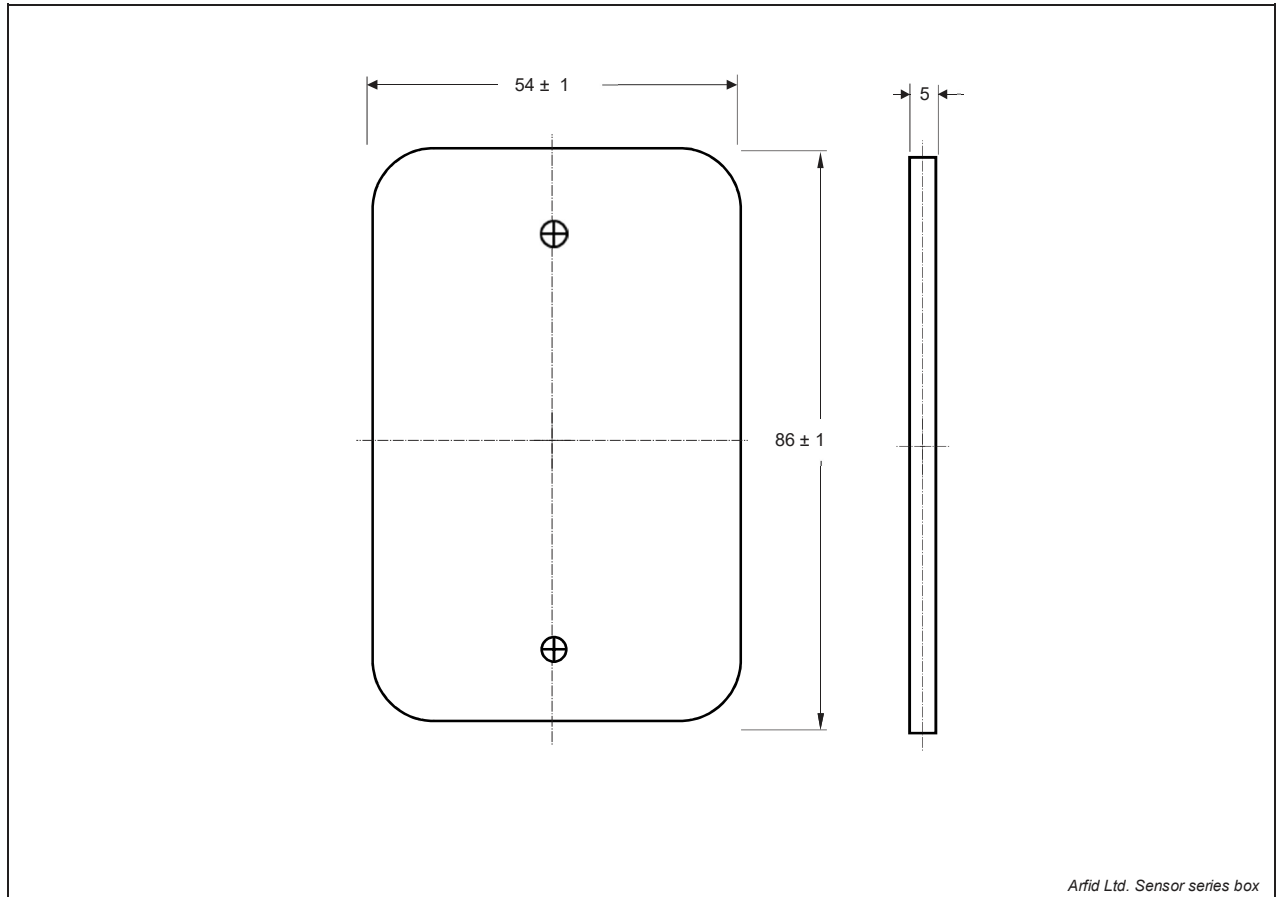


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6. Dimensions [mm]



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