

SI Series Sensor Datasheet



Revision: 20.04
Date: 2020-04-18



Contents

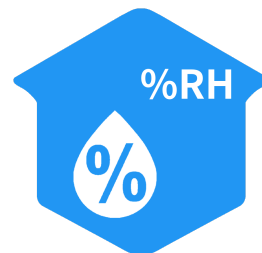
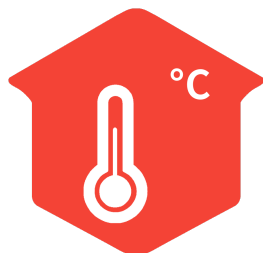
1 Product models	3
1.1 Key features	3
2 Specifications	4
2.1 Sensor Performance Graphs	6
3 Dimensions	7
4 Setup	8
4.1 Power on and off device	8
4.1.1 Power on	8
4.1.2 Power off	8
4.2 Add or remove device from the RF network	8
4.2.1 Add device to the RF network (Bonding)	8
4.2.2 Remove device from the RF network with user button (Unbonding)	9
4.2.3 Meaning of status LEDs	9
5 Battery replacement	10
5.1 Caution!	10
5.2 To replace the battery	10
6 For your safety	11
6.1 WARNINGS	11
6.2 Notices	12
7 Contact Us	12

1 Product models

Model ID	Product name	T [°C]	rH [%]
SI-T-02	Industrial Temperature Sensor	✓	
SI-T-02/B	Industrial Temperature Sensor for infrared heating systems	✓	
SI-T-02/SC	Industrial Temperature Sensor with 1.5 m long sensor cable	✓	
SI-TH-02	Industrial Temperature and Relative Humidity Sensor	✓	✓

1.1 Key features

- Ready to use industrial sensors
- Various configurations
 - Temperature
 - Relative Humidity
- Industrial and outdoor usage
- Li-ion Battery powered wireless solution
- Wall mountable compact design
- IP65 case for industrial usage
- -40°C to +125°C sensing temperature range
- Usage examples:
 - HACCP temperature monitoring
 - Building temperature monitoring
 - Infrared production hall heating control



2 Specifications

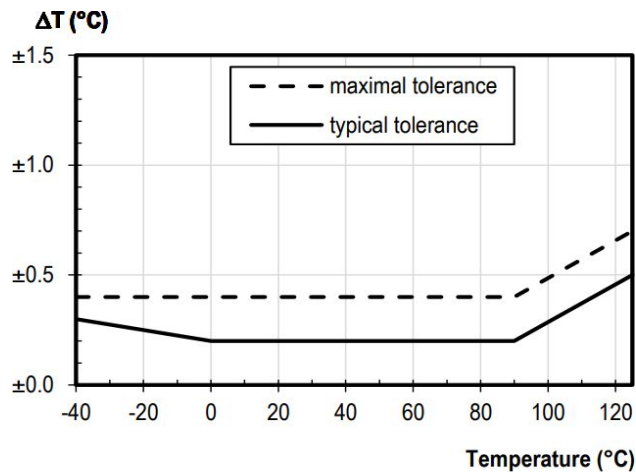
Temperature sensing	SI-T-02 , SI-T-02/B	SI-T-02/SC	SI-TH-02
Measurement range	-40 °C to +85 °C	-40 °C to +125 °C	-40 °C to +85 °C
Accuracy	±0.3 °C (typical)		
Resolution	0.0625 °C		
Relative humidity sensing	SI-T-02 , SI-T-02/B	SI-T-02/SC	SI-TH-02
Measurement range	x	x	0 % to 100 %
Accuracy	x	x	±2 RH (typical)
Resolution	x	x	0.0625 %
RF Specification			
Communication technology	IQRF - DPA		
Communication module	DCTR-76DA		
IQRF-OS version	4.02D		
IQRF-DPA version	3.02		
Default IQRF channel	52 (868.35 MHz)		
RF mode	Low Power		
RF band	868 MHz (916 MHz on special request)		
RF output power	10 mW		
Antenna	Internal, PCB		
Local state feedback			
State feedback	Internal LED (Red/Green)		
Environmental conditions			
Storage temperature	from -40°C to +85°C		
Operation temperature	from -40 °C to +85 °C		
Relative humidity	from 0 % to 100 %		
Electrical specification			
Input power supply / Input voltage	2400 mAh 3.6V Li-Ion Battery (AA size) [Battery included]		

Sleep consumption	<1 uA (typical)
Idle consumption (RF RX active)	345 uA (typical)
RF TX consumption	Maximum 22 mA (according to RF output power)
Sensor ready time	< 2s
Mechanical and enclosure specification	
Product dimension (outline)	Box 65mm(W) x 65mm(D) x 40mm(H)
Mount type	Wall mountable
Enclosure material	ABS
Body colour	Light gray
Product weight	120 g
Enclosure protection level	IP65
Be careful with the head size of the screw!	

2.1 Sensor Performance Graphs

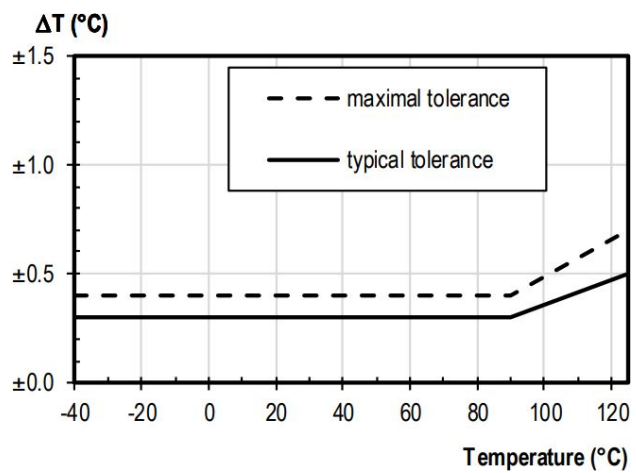
[SI-T-02](#), [SI-T-02/B](#), [SI-T-02/SC](#):

Temperature Sensor

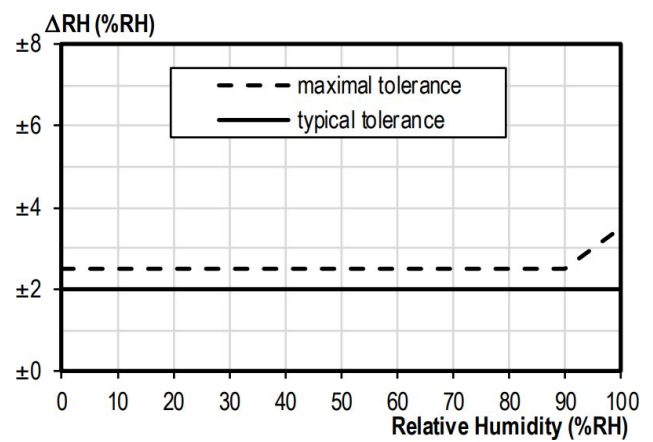


[SI-TH-02](#):

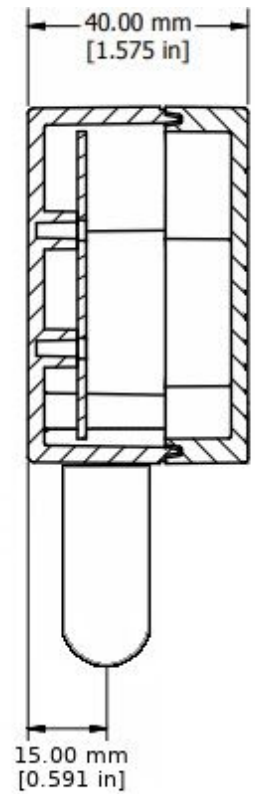
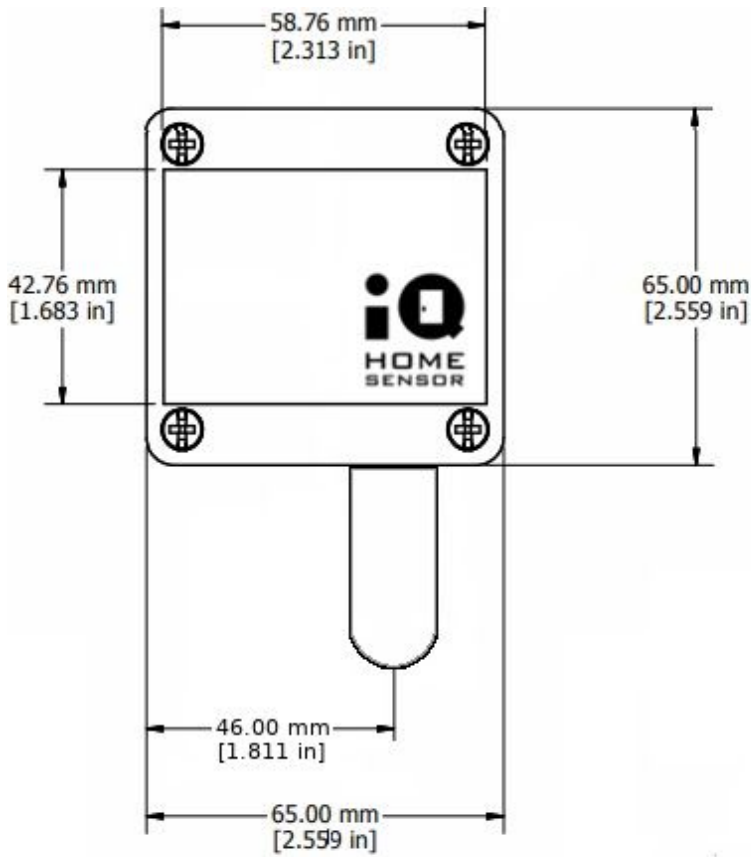
Temperature Sensor



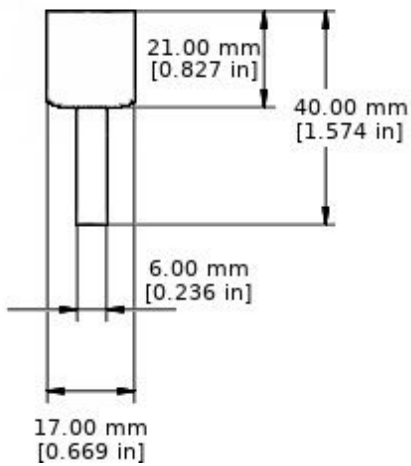
Humidity Sensor



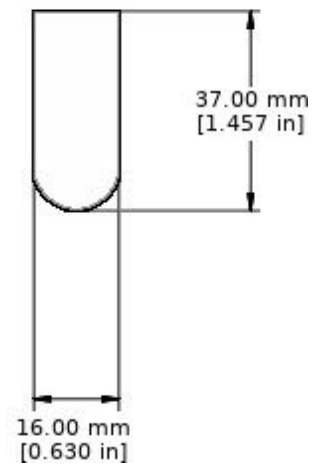
3 Dimensions



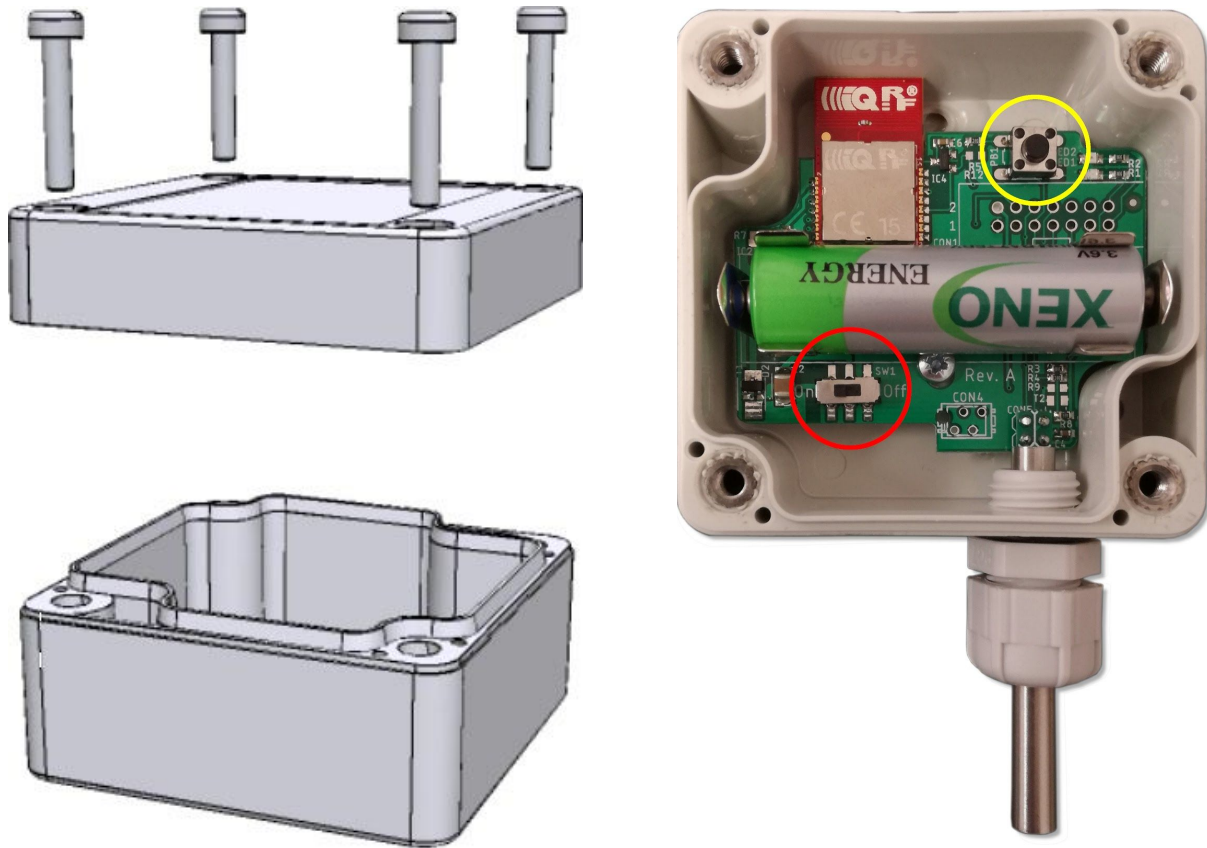
SI-T-02, SI-T-02/B



SI-TH-02



4 Setup



4.1 Power on and off device

The device can be powered on/off with switch marked on picture with red circle.

4.1.1 Power on

Switch the power button to on state. After this the red LED is flashing.

4.1.2 Power off

Switch the power button to off state.

4.2 Add or remove device from the RF network

The device can be add/remove from network with push button marked on picture with yellow circle.

4.2.1 Add device to the RF network (Bonding)

To use DPA, all Nodes in the network must be bonded to the Coordinator.

In case the Node is already bonded the red LED once shortly flashes after power on.

If the node is not bonded the red LED is flashing continuously.
To bond node during bond period press the user pushbutton and the node going to bond.

4.2.2 Remove device from the RF network with user button (Unbonding)

Press and hold user button and turn on device.

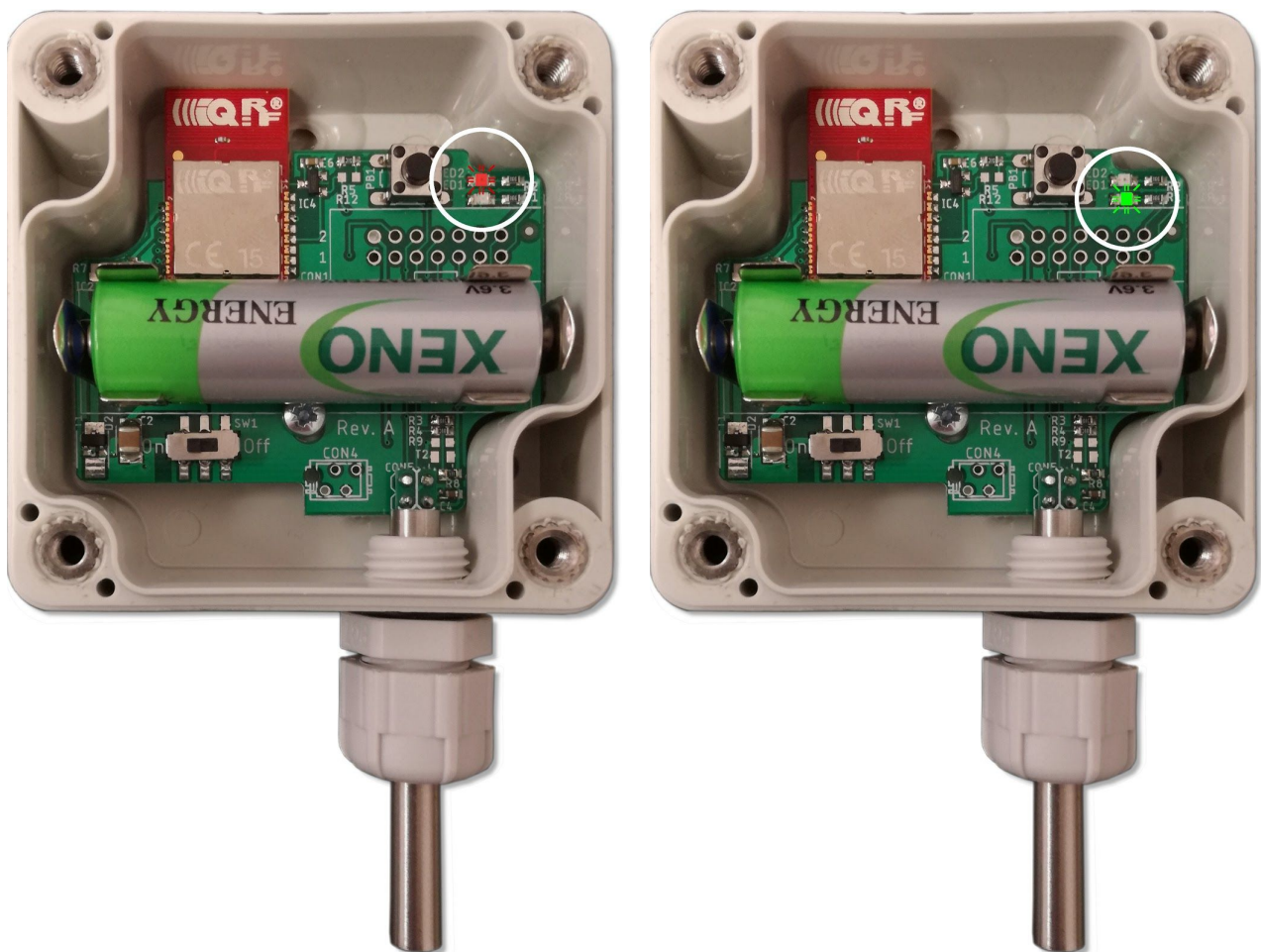
Green LED shines for about 2 s.

Release the user button immediately once the green LED stops shining.

If the node is successfully unbonded, red LED is flashing continuously.

4.2.3 Meaning of status LEDs

- After power on the red LED is flashing:
 - Device is not bonded.
- Green LED is periodically flashing. Elapsed time between two flashes is 5 sec:
 - Device is bonded and is on-line.
- Green and red LED is pulse one or more times:
 - Active RF communication is in progress.
- After successful bonding the Red LED is still flashing:
 - Sensor error - Please contact with the distributor.
- No LED activities and the module is powered on:
 - Module is in sleep mode or the battery is empty.



5 Battery replacement

If no light appears after switching on, you should replace the unit's battery.

5.1 Caution!

Do NOT use standard 1.5V AA size alkaline battery!

Always use the same type lithium battery what used previously!

Recommended battery type: ER14505 (AA size, 3.6V)

5.2 To replace the battery

1. Remove the box's cover.
2. Switch off the power button.
3. Remove the old battery.
4. Insert the new, same type battery.
5. Switch on the power button.
6. Add device to the RF network.
7. Reseat the box's cover same as you removed.



6 For your safety

To prevent damage to your product or injury to yourself or to others, read the following safety precautions before using this equipment. Keep these safety instructions where all those who use the product will read them.

6.1 WARNINGS

- **Turn off immediately in the event of malfunction**
Should you notice smoke or an unusual smell coming from the equipment, power off the equipment and remove the battery immediately, taking care to avoid burns. Continued operation could result in injury.
- **Do not use in the presence of flammable gas**
Do not use electronic equipment in the presence of flammable gas, as this could result in explosion or fire.
- **Keep out of reach of children**
Failure to observe this precaution could result in injury.
- **Observe proper precautions when handling batteries**
Batteries may leak or explode if improperly handled. Observe the following precautions when handling batteries for use in this product:
 - Use only batteries approved for use in this equipment.
 - Do not short or disassemble the battery.
 - Be sure the product is off before replacing the battery.
 - Do not attempt to insert the battery upside down or backwards.
 - Do not expose the battery to flame or to excessive heat.
 - Do not immerse in or expose to water.
 - Do not transport or store the battery with metal objects such as necklaces or hairpins.
 - Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the battery when no charge remains.
 - When the battery is not in use, store in a cool, dry place.
 - The battery may be hot immediately after use or when the product has been used on battery power for an extended period. Before removing the battery turn the device off and allow the battery to cool.
 - Discontinue use immediately should you notice any changes in the battery, such as discoloration or deformation. Failure to observe this precaution could result in injury.

6.2 Notices

- This manual included with the product may not be reproduced, translated to any language or used to any other purpose without IQ Home's written permission.
- IQ Home reserves the right to change specifications described in this manual at any time without prior notice.
- IQ Home will not be held liable for any damages resulted from the use of this product.
- We made as much effort as we could while prepared this manual to make it useful, accurate and complete. If we made mistakes, we appreciate if you contact us and let us know.

This symbol indicates that this product is to be collected separately.



- This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- For more information, contact the retailer or the local authorities in charge of waste management.

This symbol on the battery indicates that the battery is to be collected separately.



- All batteries whether marked with this symbol or not, are designated for separate collection at an appropriate collection point.
- Do not dispose of as household waste. For more information, contact the retailer or the local authorities in charge of waste management.

7 Contact Us

IQ HOME Kft.

Address: 1139 Budapest, Forgách utca 32. 5. ép. 3. em. 312., Hungary

Email: info@iqhome.org

Website: www.iqhome.org