



tiko Sense-3 Temperature and Humidity Sensor User Manual

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*tiko Sense-3 Temperature and Humidity
Sensor User Manual*

tiko Energy Solutions AG

Temperature Sensor («Sense-3»)

**User's Manual
CASTH-01.1004-01**

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Safety Warnings and Working Instructions

Hazard Risk



Read the user manual before installing and operating this product!



Not to be handled by children under 3 years!

Warnings

- Device is intended for indoor use only.
- Ultimate disposal of this product should be handled according to all national laws and regulations.

Safety Instructions

Read these safety instructions carefully.

- The device must not be installed close to a radiator or other heat source, and not exposed to direct sunlight.
- Do not leave this equipment in an unconditioned environment. Temperatures above 50 °C will damage the equipment.
- Keep this guide for later reference.

Feedback

You can submit comments via email to info@tiko.energy You can also submit your comments via regular mail by writing to the following address:

tiko Energy Solutions AG
Alte Tiefenastrasse 6
CH-4600 Bern

We appreciate your comments.

Overview

Intended Use

Sense-3 (IMAGE 1) is a radio secure temperature and humidity sensor, working on the 868 MHz ISM band.

Any installation or usage which does not conform to tiko Energy Solutions AG setup is strictly forbidden. tiko Energy Solutions AG is not responsible for any improper installation/usage of this device.

Features

Sense-3 features (IMAGE 2):

- measures environmental temperature and humidity (A)
- exchanges encrypted data with the M-Box on the 868 MHz ISM band every five minutes
- LCD display (C)
- two buttons (D)
- LED (B)

Package Content

Open the package and check that you have all the following items:

- Instruction manual
- Sense-3
- 2 x AAA batteries

Depending on the kit, the following optional items are included in addition:

- Kits K01-CASTH-01.1004-01/DE-WH or K02-CASTH-01.1004-01/TIK-WH
 - wall-holder with Velcro patch or Nano Tape (IMAGE 3)

If any of the parts are incorrect, missing, or damaged, please contact the retailer where you made your purchase. Keep the carton box, including the original packing materials, in case you need to return the unit for repair.

Device

IMAGE 1, IMAGE 2 and IMAGE 4 show the device from various sides. On the display side, the unique serial/MAC address is displayed as text and QR code. If the device is opened, on the inside labels is indicated:

- The manufacturer
- The device model number (REF) and the current rating
- The unique serial/MAC address as text and as Aztec 2D code (SN/MAC)

Installation

Installing the Sense-3

Step 1	Open the battery compartment by holding the bottom half (the one having the LCD display) and by unscrewing the top part, rotation counter-clockwise (IMAGE 6).
Step 2	Insert two AAA batteries the indicated way (IMAGE 7).
Step 3	Close the battery compartment by holding the bottom half and screwing the top part, rotation clockwise (IMAGE 6).
Step 4	The LCD display shall show current temperature and humidity.
Step 5	<p>The device is designed to be laid down on the user interface. This way, the device can be placed at a height of approx. 1 - 1.5 meters, e.g., on a bookshelf, without attracting attention.</p> <p>Depending on the kit, a wall mount is included. Install this if, for example, there is no shelf in a corridor to place the device on.</p> <p>In this case, remove the protective film of the Velcro tape or Nano Tape and press the wall holder onto the desired location.</p> <p>Note: The adhesive on the Velcro tape needs 24 hours to reach its full load-bearing capacity. The Nano Tape does not need curing time, but the adhesive strength depends on the contact pressure.</p>
Step 6	To finalize the installation, all tiko devices must be configured using the installation app.

Operation


Device Operation

IMAGE 5 shows the LCD display. On the top (A) is displayed the temperature, on the bottom (B) the relative air humidity. On the bottom at (C), the signal strength is indicated. When the remaining capacity of the battery reaches 10%, the battery icon (D) will appear.

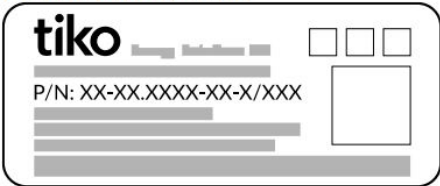
Sense-3 autonomously performs and transmits each 5 minutes a new measure. Before transmitting, the device performs a CCA (Clear Channel Assessment) and expects an answer from his counterpart (M-Box), in order to ensure that the information has been properly delivered. The LED above the display blinks green for each successful transmission and red for each failed one.

If the device is not able to communicate with the M-Box for 30 minutes, then the temperature and humidity information will be removed from the LCD. It is possible to show the information again and to trigger another transmission by pressing any of the two buttons.

Uninstalling

Step 1	If the device remains property of <i>tiko Energy Solutions AG</i> or its authorized reseller, it must be returned. Otherwise, the ultimate disposal of a device shall be handled according to national laws and regulations.	
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Specifications

Device Characteristics	
Product Number 	CASTH-01.1004-01
Weight	60 g without batteries
Dimensions	76 mm x 76 mm x 34 mm
Rating	3 Vdc – 2x AAA Alkaline / Lithium
Average Battery Lifetime	Lithium: 7.5 years / Alkaline: 5 years
IP protection	IP40, only for indoor usage
Radio	ISM 868.3 MHz
Security	Pre-shared secret, AES-128
LCD	3 digits for temperature 2 digits for humidity 3 values for radio signal strength 1 icon for battery low
LED	Green + Red
Energy Consumption	20 µA (normal use)

Measurement Characteristics	
Measure Update Rate	1 measure each 5 minutes
Radio Update Rate	up to 5 attempts each 5 minutes
Sensor Temperature Range	-40 to +120 °C
Sensor Temperature Accuracy	± 0.5 °C @ +15 to +40 °C ± 1.0 °C @ 0 to +60 °C
Device Temperature resolution	0.1 °C
Sensor Humidity Range	0 – 99%
Sensor Humidity Accuracy	± 3.5% RH @ 20 to 80% RH ± 5.0% RH @ 0 to 100% RH
Device Humidity Resolution	1% RH
Humidity Long-Term Drift	0.5% RH/yr. (when operated at 20 – 80% RH)

	Operating Conditions	Storage Conditions
Temperature (min.)	-20 °C	-20 °C
Temperature (max.)	+50 °C	+70 °C
Relative Humidity	max. 99%, no condensation	max. 99%, no condensation
Maximum Altitude	2000 meters	-

Obtaining the Declaration of Conformity

Intended Use

Sense-3 is a temperature/humidity sensor to be only used in tiko Energy Solutions AG authorized setups.

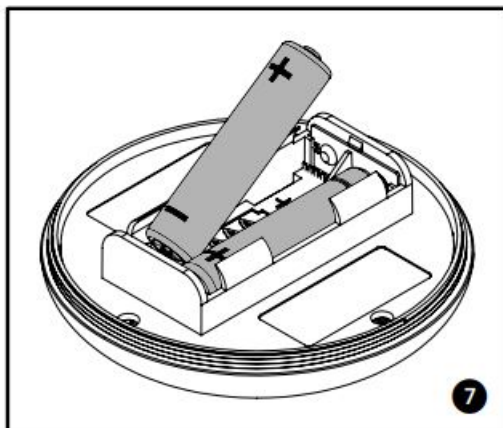
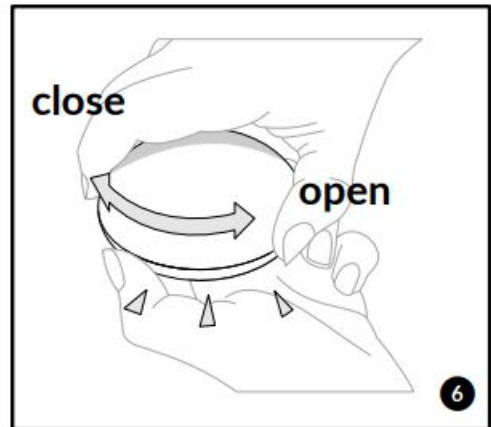
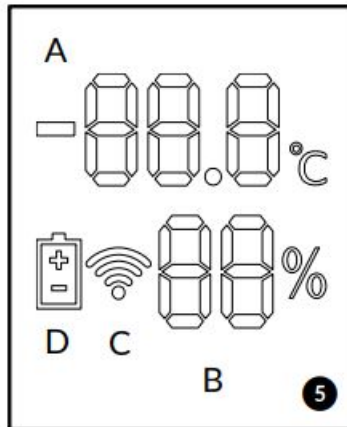
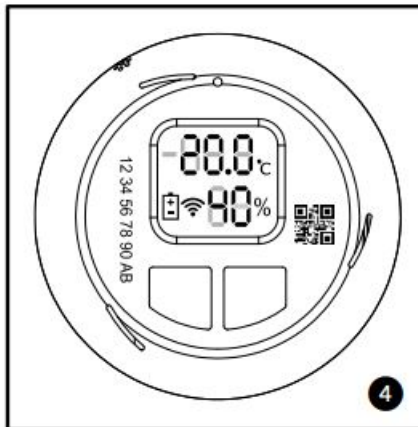
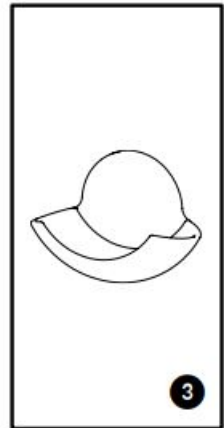
Safety Information

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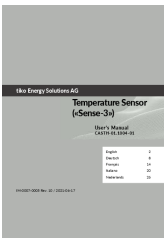
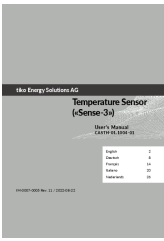


The product CASTH-01.1004-01 in the form as delivered conforms to the provisions of the following European directives: 2011/65/EU on hazardous substances, 2014/53/EU on radio equipment devices.

A copy of the declaration of conformity can be requested by writing to the postal address or is available on <http://um.tiko.energy/1004>



Documents / Resources

	<p>tiko Sense-3 Temperature and Humidity Sensor [pdf] User Manual CASTH-01.1004-01, Sense-3 Temperature and Humidity Sensor, Sense-3, Temperature and Humidity Sensor</p>
	<p>tiko Sense-3 Temperature and Humidity Sensor [pdf] User Manual CASTH-01.1004-01, Sense-3, Temperature and Humidity Sensor, Sense-3 Temperature and Humidity Sensor</p>

References

- [tikoum.tiko.energy/1004](https://um.tiko.energy/1004)