Li65+ BAT LRW

LoRaWAN® Outdoor sensor for air quality

Thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
Issue date: 01.02.2024 • A123

» APPLICATION

Outdoor sensor with LoRaWAN® interface for detecting brightness, temperature and humidity in outdoor areas, greenhouses, warehouses or industrial halls. The brightness sensor is adapted to the spectral sensitivity of the human eye.

» TYPES AVAILABLE

Outdoor sensor – LRW
- Li65+ Temp_rH BAT LRW

» SECURITY ADVICE – CAUTION

The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with
- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

» PRODUCT TESTING AND CERTIFICATION

Declaration of conformity
The declaration of conformity of the products can be found on our website
https://www.thermokon.de/direct/en-gb/categories/li65plus

» NOTES ON DISPOSAL

The crossed-out wheelie bin symbol indicates that the product or removable batteries must not be disposed of with household or commercial waste. Within the EU, you are legally obliged to dispose of the product separately and appropriately in accordance with the national laws of your country. Alternatively, please contact your supplier or Thermokon Sensortechnik GmbH. Further information can be found at: www.thermokon.com

»APPLICATION NOTICE FOR HUMIDITY SENSORS

At regular environmental condition, it is recommended to calibrate the sensor annually to check the compliance with the accuracy required in the application. The following conditions can damage the sensor element or lead in long therm to loss of the specified accuracy:

- Mechanical stress
- Contamination (e.g. dust / fingerprints)
- Aggressive chemicals
- Ambient conditions (e.g. condensation on measuring element)

Do not touch the sensor elements!

Re-calibration or exchange of the sensor element are not subject of the general warranty.

»USE ENCLOSURE WITH UV AND WEATHER RESISTANCE

After some time, outdoor mounted plastics can lose their color and quality. Therefore, all USE housings are made of special white polycarbonate (PC). The light-stable colorants and additives are used to achieve optimum protection of the polymer while maintaining color stability. The titanium dioxide used is specially developed for polycarbonate and offers excellent UV protection through the reflection of the entire light spectrum including the UV component by 340 nm. This effectively counteracts the otherwise occurring photochemical polymer degradation. The colors stay full for a long time without fading. The material is also resistant to cold and frost.
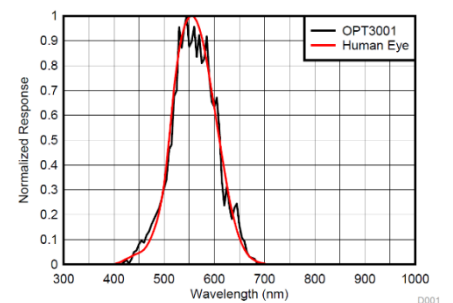
»TECHNICAL DATA

Measuring values	temperature, light, humidity		
Power supply	1-2x AA battery (1,5-3,6V)		
Measuring range temperature	-20..+70 °C		
Measuring range humidity	0..100% rH, non-condensing		
Measuring range light	0-65535 Lux		
Accuracy light* (data in lux)	±5% of measuring value	**Measuring range**		
		0 – 200	1.000 - 2.000	10.000 – 20.000
		200 - 1.000	2.000 - 10.000	20.000 – 50.000

Accuracy depends on the value range used. Sensor uses value range depending on detected brightness values

Accuracy temperature	±0,4 K (typ. at 21 °C)
Accuracy humidity	±2% between 30..70% rH (typ. at 21 °C)
Sensor	Ambient light sensor with precise optical filtering appropriate to the human eye
Enclosure	enclosure USE-M, PC, pure white, cover PC, translucent
Protection	IP65 according to EN 60529
Ambient condition	**Enclosure** 0..+50 °C, max. 85% rH short term condensation
Configuration	Thermokon LRWapp, uConfig Software, LoRaWAN® Downlink
Battery life	+/- 5 years (depending on device configuration, network setup, battery-type* and environmental conditions)

Spectral Response: The OPT3001 and Human Eye

* 3,6V Lithium battery (compared to 1,5V alkaline) recommended to increase battery life
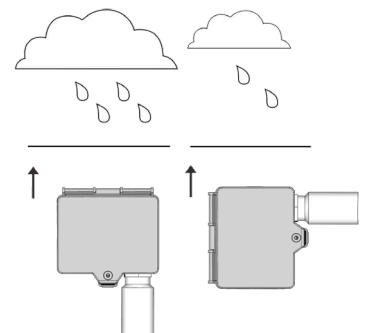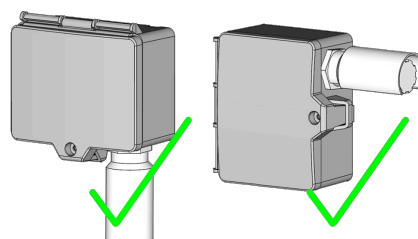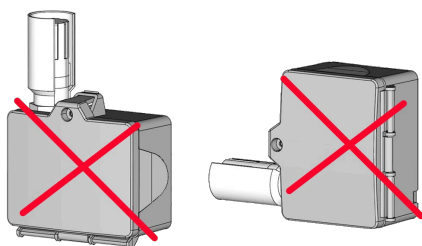
» LoRaWAN®

Radio technology	LoRaWAN®
LoRaWAN version	1.0.4
Device class	Class A
Frequency	EU868 (863-870 MHz)
Max. transmission power	+14 dBm (25 mW)
Receiver sensitivity	-137 dBm
Antenna	Internal send- / receiver antenna, external antenna available on request
LoRaWAN Features	Over the Air Activation (OTAA), Adaptive Data Rate (ADR)
Data transmission	Heartbeat interval (default: 1440 min), Measurement-interval (default: 1 min), hysteresis transmission behavior

»MOUNTING ADVICES

Avoid direct rain and contact during outdoor installation. Use sun or rain protection as required. The Cable entry is located at bottom or side of the enclosure. Set a loop if required so that precipitation can drain defined (i.e. cable routing). Observe permissible ambient condition.
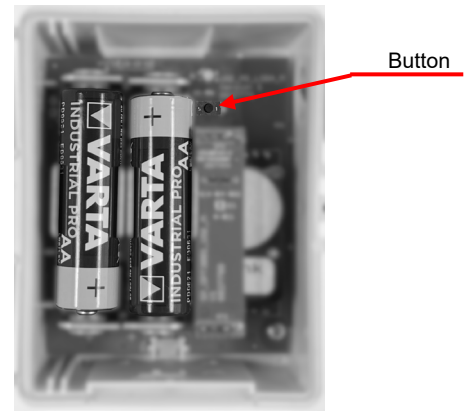
False mounting orientation　　　　　　　*Correct mounting orientation*

» BATTERY INSTALLATION

The Li65+ BAT LRW is powered by 1 or 2 inserted AA batteries. Using 2 batteries will increase the battery life.
Insert the batteries into the battery compartment as shown.
(included in the scope of delivery)

Button

» ADVICE FOR COMISSIONING:

The LoRaWAN credentials required for commissioning can be read out via the uConfig software or the LRWapp. On request, the LoRaWAN credentials can also be provided in digital form. For this purpose, please contact your respective contact person.

» INFORMATION ABOUT LORAWAN SPECIFICATION

The Thermokon LoRaWAN specification can be downloaded from our website.

» CONFIGURATION

The configuration is performed in powered state. The following options are available for configuring the device:

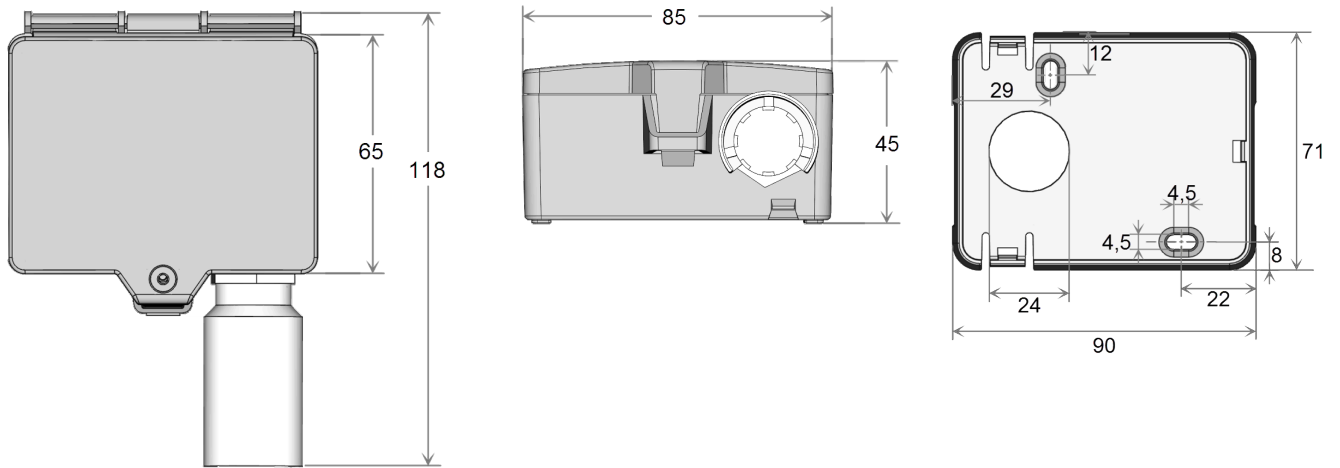| Device connection	Micro-USB cable	Bluetooth radio	LoRaWAN® downlink
			LoRaWAN® DOWNLINK
Configurations-software	PC/Notebook with uConfig software	Smartphone/Tablet with LRWApp	LoRaWAN Infrastructure

The configuration app with the corresponding instructions can be downloaded from the Google Play Store or the Apple App Store.

» ADVICE FOR BLUETOOTH CONFIGURATION

Press the button to start Bluetooth communication. After pressing the button, a connection can be established via the app within approx. 20 seconds. This is indicated by a flashing LED.

»DIMENSIONS (MM)

»ACCESSORIES (INCLUDED IN DELIVERY)

Battery 1,5V AA	Item No. 459099
Mounting base	Item No. 631228
Rain protection	Item No. 670715
Mounting kit universal	Item No. 698511

• Cover screw + screw cover• 2 Rawlplugs • 2 Screws (countersunk head) • 2 Screws (rounded head)

»ACCESSORIES (OPTIONAL)

Battery ER14505 (Lithium 3,6V AA)	Item No. 759182