User and safety guide

Shelly BLU Distance

Smart BLE ultrasonic sensor for distance and level measurement

Referred to in this document as “the Device”.

Safety information

For safe and proper use, read this guide, and any other documents accompanying this product. Keep them for future reference. Failure to follow the installation procedures can lead to malfunction, danger to health and life, violation of law, and/or refusal of legal and commercial guarantees (if any). Shelly Europe Ltd. is not responsible for any loss or damage in case of incorrect installation or improper operation of this device due to failure to follow the user and safety instructions in this guide.

This sign indicates safety information.

This sign indicates an important note.

CAUTION! Do not use the Device if it shows any sign of damage or defect.

CAUTION! Do not attempt to repair the Device yourself.

CAUTION! Use the Device only with batteries that comply with all applicable regulations. Using inappropriate batteries can cause damage to the Device and fire.

CAUTION! Make sure batteries are installed correctly according to polarity + and –.

WARNING! Keep your battery-powered device away from children. Swallowing batteries can cause serious injury or death.

CAUTION! Batteries can emit hazardous compounds or cause fire if not disposed of properly. Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.

CAUTION! Do not immerse or submerge the Device into any liquids.

Product description

Shelly BLU Distance is a smart Bluetooth Low Energy ultrasonic sensor for monitoring occupancy data for parking spots, garage door automation based on vehicle detection, liquid level measurement in water tanks, etc.

The long-lasting battery, included in the package, ensures reliability and convenience.

The Device comes with factory-installed firmware. To keep it updated and secure, Shelly Europe Ltd. provides the latest firmware updates free of charge. Access the updates through the Shelly Smart Control mobile application. Installation of firmware updates is the user's responsibility. Shelly Europe Ltd. shall not be liable for any lack of conformity of the Device caused by the failure of the user to install the available updates in a timely manner.

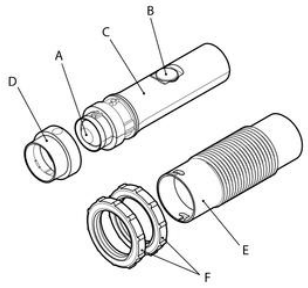

Fig. 1

Legend

A: Sensor

B: Button

C: Main part

D: Attachment

E: Sleeve

F: Mounting nuts

First steps

Shelly BLU Distance comes with a battery installed.

However, you will need to remove the plastic insulating tab inside the battery compartment to power the Device. To do that, follow these steps:

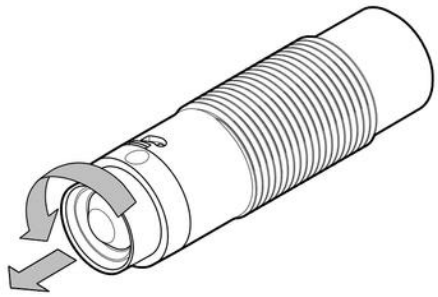

Fig. 2

1. Hold the Device by the sleeve. Turn the main part in the direction indicated by the arrow to unlock it. Next, extract the main part from the sleeve (Fig. 2).

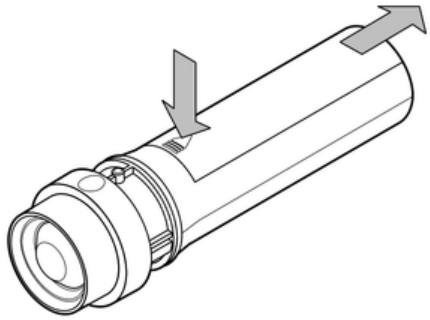

Fig. 3

2. Gently press and slide open the battery cover (Fig. 3).

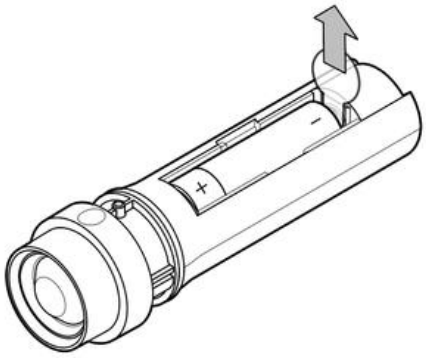

Fig. 4

3. Remove the insulating tab (Fig. 4).
   The LED beneath the button should flash red three times to indicate the Device is

working. If it does not, you might need to insert a new battery. See the Replacing the battery section.

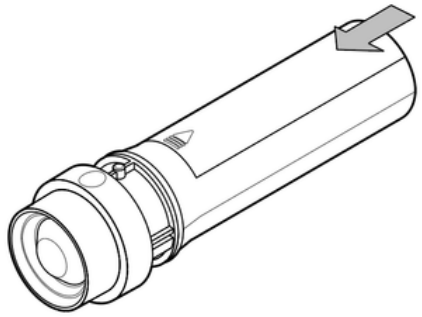

Fig. 5

4. Close the battery cover (Fig. 5).

User interfaces

Inputs:

Push button

- **Single press** the button to reset the timer between measurements
- **Press and hold for 10 seconds** to enter pairing mode
- **Press and hold for 30 seconds** to factory reset (only possible shortly after inserting the battery)

Resetting will revert the Device to its factory settings and delete it from the account.

Outputs:

LED indication

- **LED flashes once** on button press to show that the Device has accepted the user command and will immediately measure and broadcast the data
- **LED flashes three times** after removing the battery insulating tab to show the Device is powered
- **LED flashes for 60 seconds** when in pairing mode

Operation

The Device broadcasts information at regular intervals of time. By default it is set to be 30 seconds, but can be additionally adjusted. A button press or a vibration initiates an immediate broadcast.

Mounting

1. Drill a hole with a diameter of 36-40 mm in the surface where you plan to mount the sensor.

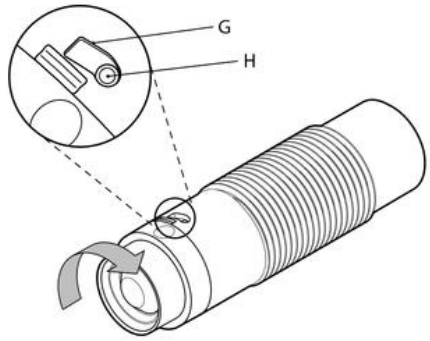

Fig. 6

2. Insert the main part back into the sleeve. Make sure that the locking slot (G) aligns with the pin (H). Turn the main part in the indicated direction to lock it (Fig. 6).

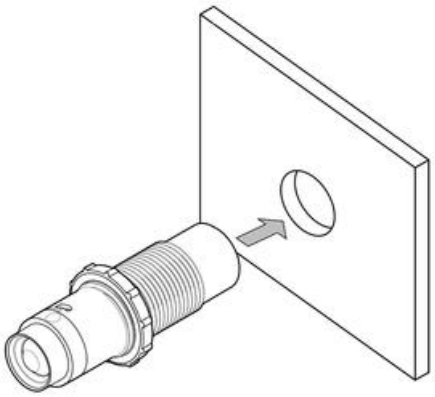

Fig. 7

3. Thread one of the mounting nuts onto the Device sleeve. Insert the sleeve into the designated hole (Fig. 7).

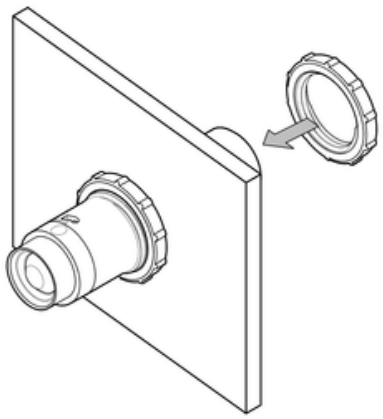

Fig. 8

4. Finally, thread the other mounting nut to fix the Device (Fig. 8).

Replacing the battery

1. Extract the main part from the sleeve (Fig. 2).

2. Open the battery cover (Fig. 3).

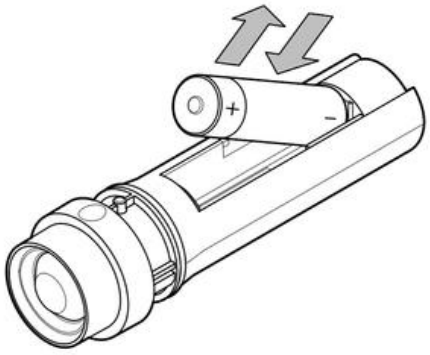

Fig. 9

2. Remove the exhausted battery and insert a new one. Make sure that the positive and negative battery terminals are properly aligned (Fig. 9).

3. Close the battery cover back into place (Fig. 5).

Specifications

Physical

- Main part size:
  115 mm / 4.53 in (length) x 33 mm / 1.31 in (diameter)
- Total size (without the mounting nuts):
  118 mm / 4.64 in (length) x 35 mm / 1.39 in (diameter)

Weight: 105 g (with battery)

Shell material: Plastic

Shell color: White

Environmental

Ambient working temperature:

-20°C to 50°C / -5°F to 105°F

Humidity:

30% to 75% RH

Electrical

Power supply: 1x 3.6 V LISOC 14505 2700 mAh battery

Estimated battery life: up to 4 years

Sensors, meters

Ultrasonic sensor: 200 mm - 5000 mm

Bluetooth

Protocol: 5

Bluetooth RF band: 2402 - 2480 MHz

Bluetooth Max. RF power: <20 dBm

Range:

Up to 30 m / 98 ft outdoors, up to 10 m / 33 ft indoors (depending on local conditions)

Microcontroller unit

CPU: Silicon Labs - EFR32MG27C140F768IM32

Clock frequency: 38.4 Mhz

RAM: 64 kB

Flash: 768 kB

Firmware capabilities

Encryption: AES encryption (CCM mode)

Additional Features

Accelerometer: Yes

Measure interval: 5-300 seconds (default: 30 seconds)

Measurement ranges (7 types):

- Range 1 - Close (200 mm-450 mm)
- Range 2 - Mid (300 mm - 3500 mm)
- Range 3 - Close and Mid (200 mm - 3500 mm)
- Range 4 - Far (2500 mm - 5000 mm)
- Range 5 - Close (200 mm-450 mm) and Far (2500 mm - 5000mm)
- Range 6 - Mid and Far (300 mm - 5000 mm)
- Range 7 - Full range (200 mm - 5000 mm)

Shelly Cloud inclusion

The Device can be monitored, controlled, and set up through our Shelly Cloud home automation service. You can use the service through either our Android, iOS, or Harmony OS mobile application or through any internet browser at https://control.shelly.cloud/

If you decide to use the Device with the application and Shelly Cloud service, ensure you have at least one permanently powered Bluetooth gateway.

You can find instructions on how to connect the Device to the Cloud and control it from the Shelly app in the application guide: https://shelly.link/app-guide

The Shelly mobile application and Shelly Cloud service are not prerequisites for the Device to function properly. This Device can be used standalone or with various other home automation platforms.

Troubleshooting

In case you encounter problems with the installation or operation of the Device, check its knowledge base page:

https://shelly.link/blu_distance

Declaration of Conformity

Hereby, Shelly Europe Ltd. declares that the radio equipment type Shelly BLU Distance is in compliance with Directive 2014/53/EU, 2011/65/EU. The full text of the EU declaration of conformity is available at the following internet address:

https://shelly.link/blu_distance_DoC

Disposal and recycling

Do not dispose of the product in household waste. Recycle the product to prevent environmental and health damage and to promote resource conservation. Dispose of the product at an appropriate waste collection point at your own responsibility.

Resellers, from which the Device was purchased are required to accept Waste Electrical and Electronic Equipment (WEEE) free of charge for proper disposal.

Some electronic products may store personal data. The user is responsible for deleting this data before disposing of the Device. For deletion reset the Device to its factory settings.

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Tel.: +359 2 988 7435
E-mail: support@shelly.cloud
Official website: https://www.shelly.com

Changes in contact information are published by the Manufacturer on the official website.

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FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.