Livi RC
resource consumption sensor

DESCRIPTION

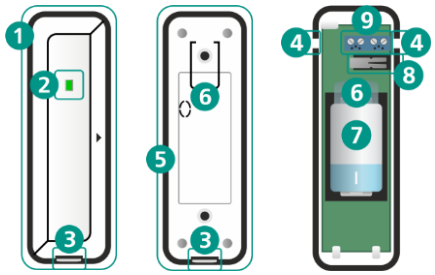
The Livi RC resource consumption sensor (hereafter referred to as the sensor) is designed to control the consumption of resources: electricity or hot and cold water.

The sensor can be connected to pulse outputs of household meters. The sensor collects data from two water meters or from one electricity meter. The sensor counts pulses generated at the output of the meter and transmits the readings to the Livi Smart Hub. The Livicom system converts the measured pulses into liters based on the pulse coding ("pulses/liter" value from the meter passport). The sensor automatically transmits meter readings every two minutes.

You can connect the sensor to:

- One single-phase, single tariff household electricity meter with pulse output of the "dry contact" type (reed switch).
- Two household water meters with NAMUR pulse output*.
- Two household water meters with pulse output of the "dry contact" type (reed switch). For example, ITELMA WFK 24.D080/24.D110, ITELMA WFW 24.D080/24.D110.

SENSOR APPEARANCE



1. *Enclosure lid*
2. *LED indicator*
3. *Enclosure latch*
4. *Plug*
5. *Enclosure base*
6. *Protective film*
7. *Battery*
8. *Tamper*
9. *Terminals for connecting meters*

CHOOSING LOCATION FOR THE SENSOR

Position the sensor so that the length of wires between the sensor and the connected meter does not exceed two meters.

The sensor only can be connected to the pulse output of the "dry contact" type (reed switch) or to the NAMUR pulse output* of a household electricity or water meters. If household meters do not have pulse outputs, then the meters should be replaced before the sensor installation.

DO NOT install the sensor outdoors, in places with high humidity, or at temperatures exceeding the operating temperature range (see "Specifications" table below).

SENSOR INSTALLATION

The sensor must be unpacked and allowed to reach room temperature for at least two hours before handling if it was transported or stored at low temperatures.

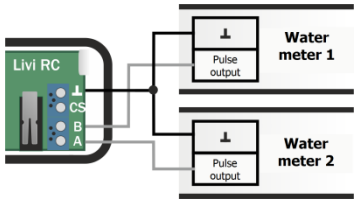
1. Open the sensor enclosure: press one of the latches (3) on the short side of the sensor enclosure using a flat-blade screwdriver and then pull the lid up (1) while pressing the latch.
2. Fasten the base of the enclosure (5) at the selected location (near electricity meter or water meters) using a supplied mounting kit.
3. Make sure that the sensor does not carry any voltage (a protective film is present in the battery compartment or the battery is removed).
4. Connect the wires of the meter pulse outputs to the sensor terminals (9) according to one of the connection diagrams below (recommended connecting wires cross-section is 0,12 mm^2).
5. Break one of the plugs (4) in the sensor enclosure to make an opening for connecting wires.

For connection, also refer to the documentation for the meters.

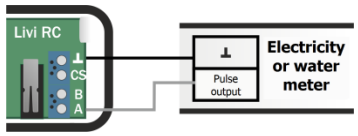
CONNECTION DIAGRAMS

The sensor only can be connected to the pulse output of the "dry contact" type (reed switch) or to the NAMUR pulse output* of a household electricity or water meter.

Connecting two water meters to the sensor:



Connecting one water meter or one electricity meter to the sensor:



BINDING TO LIVI SMART HUB

1. Open the sensor enclosure if it has been closed.
2. Switch the sensor to the binding mode: pull out a protective film that comes out of the battery compartment (or install one CR123A battery, observing polarity, if the battery was removed). The sensor indicator blinks in blue (for 60 seconds) when the sensor is switched to the binding mode.
3. In the Livicom app, open the "Devices" screen, in the upper right corner of the screen tap + and select "Add device". The sensor indicator blinks in green five times after successful binding.
4. Close the sensor enclosure.

The sensor switches to the binding mode only for 60 seconds. If you have not bound it to the Livi smart hub within this period, then remove the battery from the sensor and after 30 seconds install it back, observing the polarity. The sensor will be switched to the binding mode again.

EVALUATING SIGNAL STRENGTH

Check a quality of the connection between the sensor and the hub at the sensor location. There are two ways to evaluate the signal strength:

1. In the Livicom app, on the Sensor settings screen.
2. With the help of LED indication on the sensor: double-click on the tamper (3) and look at the sensor indicator (1). Interpret the indication using the table below.

Good signal	The indicator blinks green 3 times
Average signal	The indicator blinks green 2 times
Poor signal	The indicator blinks green once
No connection	The indicator blinks red 4 times

WARNING

DO NOT perform any manipulations with the connecting wires (disconnecting and reconnecting wires) until the sensor no longer carries any voltage (the battery is removed).

SENSOR DELETING

There are two ways to unbind the sensor from the Livi Smart Hub:

1. In the Livicom app, on the Sensor settings screen.
2. Using the sensor tamper (8): remove the battery from the sensor and after 30 seconds install it back, observing the polarity. Quickly click on the tamper (8) until the indicator (2) starts blinking blue.

MAINTENANCE

Keep the sensor free of moist, dust and dirt. Replace the battery as soon as possible after you receive a low battery notification in the Livicom app.

Do not wipe the sensor with substances containing alcohol, acetone, gasoline and other active solvents.

SPECIFICATIONS

Operating frequency	868 MHz
Radio communication range*	1000 m
Radio channel power	25 mW
Period of sending test events to the hub	2 minutes
Number of connecting meters	2 water meters or 1 electricity meter
Connecting wire length	up to 2 m
Connecting wire cross-section	0,12 mm2
Meter connection interface	pulse output of the "dry contact" type (reed switch) or NAMUR*
Power source (3 V)	1 battery CR123A
Current consumption in sleep mode	3 μA
Current consumption in active mode	up to 30 mA
Battery life**	up to 10 years
Operating temperature range	from -20 to +55 °C
Relative humidity	no more than 80 % at 25 °C
Sensor dimensions	90 x 28 x 28 mm

* Radio communication range is the maximum distance between the hub and the sensor in line of sight and without interference.

** Battery life depends on the intensity of radio communication between the sensor and the hub. The maximum battery life can be achieved if the sensor is operated at the temperature of 25 °C, relative humidity no more than 80% and without vibration load.

SUPPLY SET

Livi RC resource consumption sensor	1
Mounting kit	1
Lithium battery CR123A (3 V)	1
Protective film	1
Packaging	1

LED INDICATION OF THE INTERNAL INDICATOR

Binding mode	The indicator blinks blue for 1 minute
Confirmation of successful binding	The indicator blinks green 5 times

WARRANTY

The manufacturer LLC "NPP Stels" guarantees that the sensor meets AGNS.421453.001 TU technical requirements, provided that the consumer complies with the conditions of transportation, storage, installation and operation. The warranty period is 5 years from the manufacturing date. The warranty does not apply to batteries. The warranty does not cover the following cases:

1. Non-compliance with the intended operating conditions;
2. Mechanical damage to the panel;
3. Repairs to the panel by a third party (a person or a company other than the Manufacturer).

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* Only the sensors with serial number 15000251 or higher can be connected to water meters with NAMUR pulse output.