# LIVI

Livi FS-2 smoke sensor manual

DESCRIPTION

The Livi FS-2 smoke sensor (hereafter referred to as the sensor) is designed for early fire detection. The sensor operates according to the scattered light method.

The sensor has a smoker warning mode (warning on increase in the smoke concentration).

The sensor switches to the alarm mode if it detects smoke:

1. the sensor triggers an acoustic alarm, the sensor indicator starts blinking red;
2. the sensor sends an alarm alert to the Livi Smart Hub 4G, Livi Smart Hub or Livi Smart Hub 2G (hereafter referred to as the hub).

SENSOR APPEARANCE
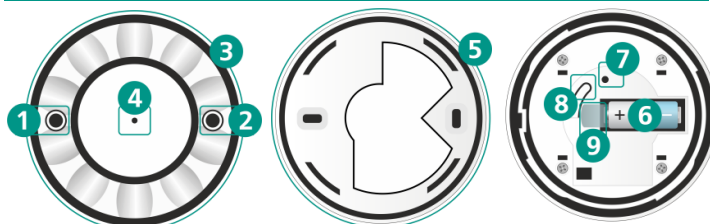
1. Operation mode indicator
2. Connection indicator
3. Enclosure lid
4. Smoke chamber access hole
5. Ceiling mounting bracket
6. Battery CR123A
7. Operation check button
8. Tamper button
9. Protective film

BINDING THE SENSOR TO THE HUB

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: hold the ceiling mounting bracket and turn the enclosure lid anticlockwise.
2. Pull the protective film out of the battery compartment. The connection indicator will start blinking green once 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 connection indicator will blink green 5 times after successful binding.

The sensor switches to the binding mode only for 60 seconds. If you have not bound it to the hub within this period, remove the battery from the sensor for 30 seconds, and reinstall it (observing polarity). The sensor will switch to binding mode again.

CHOOSING A LOCATION FOR THE SENSOR

We recommend installing the sensor on the ceiling at the highest point of the room (optimally in the center of the room).

DO NOT install the sensor:

- outdoors,
- at a distance of less than 0.5 m to the nearest corner of the room (for example, in niches, near the top of an A-shaped roof),
- in places with a high content of dust or suspensions of building materials in the air, as well as in places of smoke (for example, in smoking areas),
- in places with intense airflow (e.g. near fans, radiators, and air ventilation ducts),
- in places with high humidity, or at temperatures exceeding the operating temperature range (see "Specifications" table below).

EVALUATING SIGNAL STRENGTH

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

1. In the Livicom app, on the sensor settings screen.
2. With the help of the LED indication on the sensor. Double-click on the tamper button and look at the sensor indicators. Interpret the indication using the table below.

Good signal	The connection indicator blinks green 3 times
Average signal	The connection indicator blinks green twice
Poor signal	The connection indicator blinks green once
No connection	The operation mode indicator blinks red 3 times

SENSOR INSTALLATION

Open the sensor enclosure (if it is closed): hold the ceiling mounting bracket (5) and turn the enclosure lid anticlockwise.

Fasten the ceiling mounting bracket at the selected location with two screws from the supplied mounting kit.

Close the sensor enclosure: align marks on the enclosure lid and the ceiling mounting bracket, and then turn the lid clockwise to fasten the sensor.

Dowel
Bracket
Screw
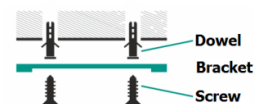
CHECKING THE SENSOR OPERATION

Check the operation of the sensor after its installation. There are three ways to simulate an alarm for the sensor:

1. Spray a special test aerosol.
2. Immerse a thin metal wire in the smoke chamber through the hole in the sensor enclosure (4). Hold the wire in the smoke chamber until the sensor triggers an acoustic alarm and the operation mode indicator starts blinking red.
3. Press the operation check button (7). Use a paper clip to press the button and hold it until a sound and LED notification appear (at least 5 seconds).

The sensor operates properly if an acoustic alarm sounds continuously and the operation mode indicator blinks red. Contact technical support (mail to: support@livicom.ru) if you see an incorrect indication or do not receive the "Fire" alert in the Livicom app.

SENSOR MAINTENANCE

Keep the sensor free of dust and dirt. Replace the battery as soon as possible after you receive a "low battery" notification in the Livicom app. Dust removal must be performed at least once a year and as soon as possible after you receive a "smoke chamber cleaning required" notification in the Livicom app. Blow out the smoke chamber with compressed air (for example, with the help of a compressor) to remove dust, and wipe the sensor enclosure with a wet tissue.

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

DELETING THE SENSOR (UNBINDING FROM THE HUB)

There are two ways to unbind the sensor from the hub:

1. In the Livicom app, on the sensor settings screen.
2. Using the tamper button (8). Remove the battery from the sensor for 30 seconds, then press the tamper button and while holding it, reinstall the battery, observing polarity. Release the tamper button and quickly click on it until the connection indicator starts blinking green.

SPECIFICATIONS

Operating frequency	868 MHz
Sensor sensitivity	0,05-0,2 dB/m
Radio communication range*	1000 m
Radio channel power	25 mW
Period of sending test events to the hub	2 minutes

Permissible ambient lighting	at least 12 000 lx
Fire alarm volume level	85 dB at 1 m distance
Fire alarm duration	at least 4 minutes
Recovery period after an alarm (if no more smoke is detected)	1 minute
Main power source (3 V)	lithium battery CR123A
Battery life**	7 years
Operating temperature range	from -20 to +55 °C
Relative humidity	no more than 93% at 40 °C
Dimensions	110 x 110 x 58 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 FS-2 smoke sensor	1
Mounting kit	1
Lithium battery CR123A (3 V)	1
Protective film for the battery	1
Packaging	1

SOUND AND LED INDICATION

Switching on the sensor (indication test)	Short beep (40 ms / 40 ms) repeats 10 times.
	Both indicators blink 3 times (200 ms / 200 ms)
Standby mode (indicated if the sensor is not bound to the hub)	Red indicator blinks continuously (5 ms / 10 s)
Smoker warning mode (warning on increase in the smoke concentration)	Short beep (50 ms / 150 s) repeats 10 times. Acoustic alarm is repeated as long as the smoke concentration remains between 50 and 100%, max 5 min
Alarm mode (sending "Fire" alert to the Livicom app)	Long beep (800 ms / 200 ms) repeats for at least 4 min
	Red indicator blinks during acoustic alarm (50 ms / 1 s)
Return to normal state	Green indicator blinks once (50 ms)
Low battery (indicated if the sensor is not bound to the hub)	Long beep repeats continuously (500 ms / 1 min)
Enclosure of the sensor is open	Short double beep repeats 5 times
Binding mode	Green indicator blinks for 1 minute (50 ms / 1 s)
Confirmation of successful binding	Green indicator blinks 5 times (200 ms / 200 ms)

WARRANTY

The manufacturer LLC "NPP Stels" guarantees that the sensor meets AGNS.425449.001 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 sensor;
3. Repairs to the sensor by a third party (a person or a company other than the Manufacturer).