

# MSD-350

## WIRELESS SMOKE DETECTOR

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The MSD-350 detector can detect the early stages of fire development when there is some visible smoke. It can operate as a stand-alone device or as part of the wireless system. The detector is supported by:

- PERFECTA 16-WRL, PERFECTA 32-WRL and PERFECTA-T 32-WRL control panels,
- MICRA alarm module (firmware version 2.02 or newer),
- VERSA-MCU controller,
- MTX-300 controller.

This manual applies to the detector with firmware version 1.0. The rating plate of the device is located inside the enclosure.

### 1. Features

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- EN 14604 compliant visible smoke sensor.
- Detection of optical chamber fouling.
- Red LED for optical signaling.
- Built-in sounder.
- Test feature.
- Tamper protection against enclosure opening (when working in a wireless system).
- Battery status control.

### 2. Description

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#### Smoke detection

An optical method is used for the detection of visible smoke. The detector automatically compensates for gradual changes in the optical chamber caused by deposition of dust. When the concentration of smoke in the optical chamber exceeds a given threshold, an alarm is triggered.

#### Fire alarm signaling

The alarm is indicated visually (LED steady light) and acoustically (intermittent sound) for 5 minutes. Pressing the test/reset button (designated with the letter A in Figure 2) during the alarm will clear the alarm condition and will block the smoke detection function in the detector for 5 minutes.

#### Operating modes

You can set the operating mode using the jumper (Fig. 4):

- jumper removed – stand-alone mode.
- jumper installed – working in 433 MHz wireless system. The detector is operating similarly as in the stand-alone mode, but it additionally:
  - sends radio transmissions,
  - supervises the tamper switch state.

#### Working in wireless system

##### Radio transmissions

Every 15 minutes, the detector sends a radio transmission with information about its state (periodic transmission). This allows the system to supervise the presence and performance of the detector. Additional communication takes place in the case of alarm (smoke is sensed by the detector) or tamper (tamper switch has been opened) and after restore of alarm (smoke is sensed no more by the detector) or tamper (tamper switch has been closed).

##### Test mode

The test mode is turned on for 20 minutes after inserting the battery or opening the tamper contact. When the detector is running in the test mode, the LED indicates:

- tamper – ON for 2 seconds,

- periodic transmission – short flash.

### 3. Installation

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The detector is designed for indoor operation. For typical home and/or office applications, the detectors should be installed on the ceiling, at a distance of minimum 0.5 meter from the wall or other objects.



**Do not install the detector in places with high concentration of dust and/or formation and condensation of water steam. The detector should not be mounted in the vicinity of heaters and cookers.**

**The detector enclosure can not be closed without the battery inserted.**

**Do not install the battery if the sounder is disconnected.**

**There is a danger of battery explosion when using a different battery than recommended by the manufacturer, or handling the battery improperly.**

**Be particularly careful during installation and replacement of the battery. The manufacturer is not liable for the consequences of incorrect installation of the battery.**

1. Remove the plastic dust cap.
2. Turn the cover counter-clockwise (Fig. 2) and remove it (Fig. 3).
3. If the detector is to work as a stand-alone device, remove the jumper (designated by letter B on Fig. 4) from the pins situated on the electronics board and skip the steps 5-8.

**Note:** After the battery is installed, removing / placing the jumper will have no effect on the detector operation.

4. Install the battery.
5. Enroll the detector in the wireless system (see the PERFECTA / PERFECTA-T / VERSA / VERSA IP / VERSA Plus control panel installer manual, MICRA module manual or MTX-300 controller manual).
6. Put the detector at the place of its future installation.
7. Close and open the tamper contact. If the alarm transmission is received, proceed with the installation. If the alarm transmission is not received, select a different mounting location and repeat the test.
8. Using wall plugs (screw anchors) and screws, secure the enclosure base to the wall. The wall plugs delivered with the detector are intended for brick, concrete and similar mounting surfaces. For other surfaces (e.g. drywall, wood, styrofoam), use other wall plugs, as required.
9. Replace the detector cover and lock it with the screw.
10. Press and hold down the test/reset button (designated with the letter A in Figure 2). Alarm should be triggered.
11. If in the premises where the detector is installed, any work is being carried out that may lead to soiling of the optical chamber, put a plastic dust cover on the detector and leave it there until the work is finished.

### 4. Maintenance

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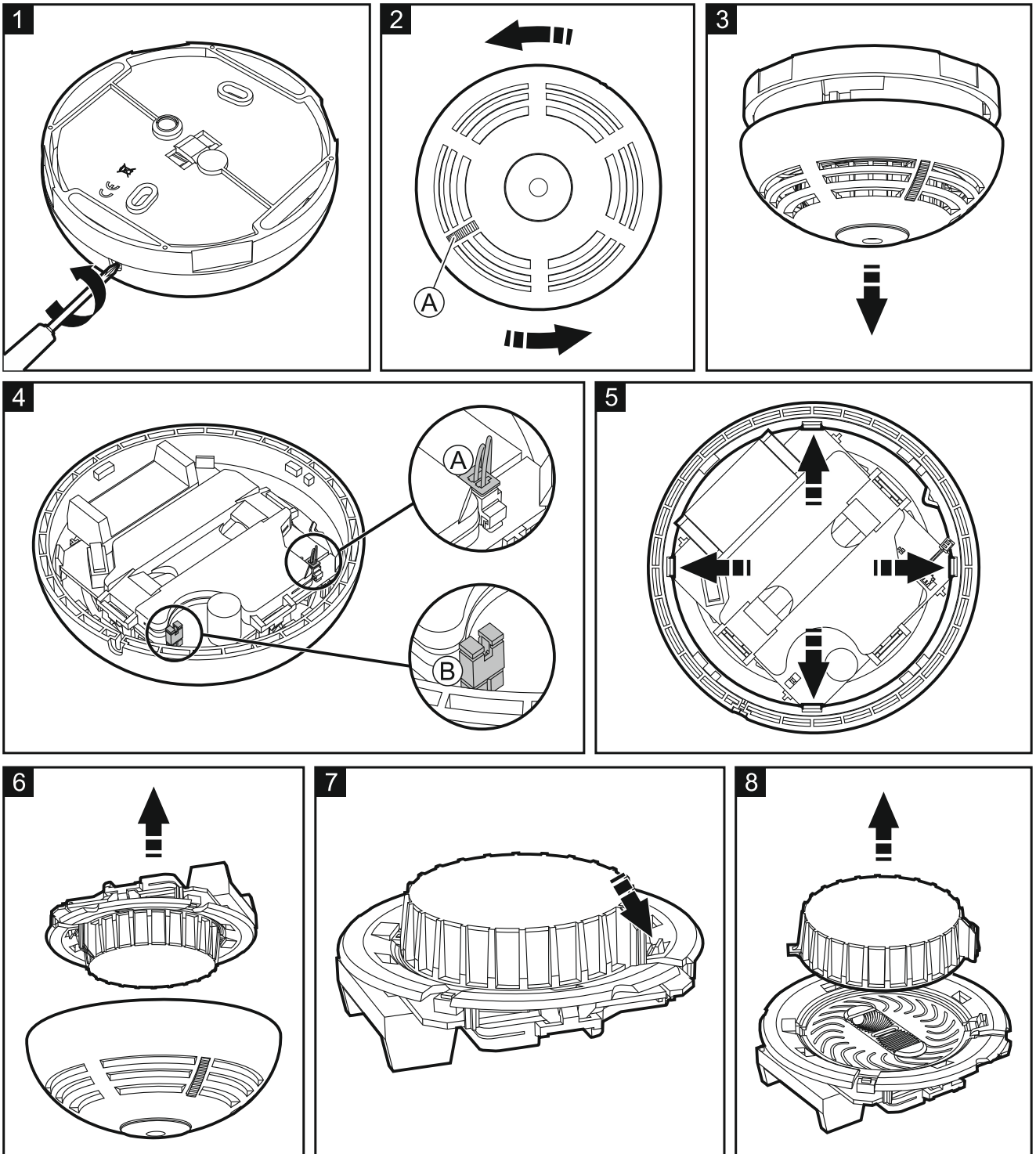
The detector should be subjected to regular checks for correct functioning. The periodic checks should be carried out at least every 6 months. To check whether the detector is operating properly, press the test/reset button (designated with the letter A in Figure 2). This should trigger an alarm.

#### Cleaning the optical chamber

Deposition of dust in the optical chamber may lead to malfunctioning of the device. It is recommended that you have the optical chamber cleaned at least once a year. Cleaning the chamber is necessary when the LED indicates fouling of the chamber (2 short flashes every 30 seconds).

1. Remove the screw fastening the cover (Fig. 1).
2. Turn the cover counter-clockwise (Fig. 2) and remove it (Fig. 3).
3. Remove the battery.
4. Disconnect the plug (designated by letter A in Fig. 4) connecting the sounder wires with the electronics board.
5. Push outward the catches (Fig. 5) and take out the electronics board with the optical chamber (Fig. 6).
6. Push outward the catch securing the optical chamber cover (Fig. 7) and remove it (Fig. 8).
7. Using a soft brush or compressed air, clean the labyrinth in the cover, as well as the base of the optical chamber, paying attention to the recesses where LEDs are installed.
8. Replace the cover of the optical chamber.
9. Lay the sounder wires in their corresponding grooves.
10. Secure the electronics board with the optical chamber in the cover mounting catches. The board must be mounted so that the LED coincides with the light guide.

11. Reconnect the plug connecting the sounder wires with the electronics board.
12. Re-install the battery.
13. Close the detector enclosure.



14. Press and hold down the test/reset button (designated with the letter A in Figure 2). Alarm should be triggered.

### 5. Battery replacement

**⚠ The used batteries must not be discarded, but should be disposed of in accordance with the existing rules for environment protection.**

When the battery needs to be replaced (the battery voltage drops below 2.75 V), the detector informs you about it by means of LED and sounds (3 short flashes of the LED and 3 short beeps every 30 seconds).

1. Remove the screw fastening the cover (Fig. 1).
2. Turn the cover counter-clockwise (Fig. 2) and remove it (Fig. 3).

3. Remove the discharged battery.
4. Install a new CR123A 3 V lithium battery.
5. Close the detector enclosure.
6. Press and hold down the test/reset button (designated with the letter A in Figure 2). Alarm should be triggered.

## 6. Specifications

Operating frequency band .....	433.05 ÷ 434.79 MHz
Radio communication range (in open area) .....	up to 200 m
Battery.....	CR123A 3 V
Battery life expectancy.....	up to 3 years
Standby current consumption .....	85 µA
Maximum current consumption.....	120 mA
Operating temperature range .....	0°C...55°C
Dimensions .....	ø108 x 54 mm
Weight.....	170 g

The MSD-350 wireless smoke detector conforms to the essential requirements of the EU Regulations and Directives:

**CPR** 305/2011 Regulation of the European Parliament and of the Council of 9 March 2011 laying down harmonized conditions for the marketing of construction products and repealing the Council Directive 89/106/EEC on construction products;

**EMC** 2014/30/EU Electromagnetic Compatibility Directive;

**RED** Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/WE.

The CNBOP-PIB Certification Body in Józefów issued the Certificate of Constancy of Performance 1438-CPR-0623 for the construction product MSD-350 Wireless Smoke Detector, confirming its compliance with the requirements of EN 14604:2006.

The CNBOP-PIB Certification Body in Józefów has tested the MSD-350 Wireless Smoke Detector confirming its compliance with the EN 14604 Standard, within the scope of Appendix L (approved for the use in caravans and camper vans).

The Certificate and the Declaration of Performance can be downloaded from the [www.satel.eu](http://www.satel.eu) website



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MSD-350

EN 14604

**Fire safety. MSD-350 Wireless Smoke Detector, stand-alone, capable of interacting over the air with the intruder alarm system, based on scattered light principle, designed for indoor use.**

Declaration of Performance 1438-CPR-0623

Application – fire safety.

Technical specifications – please refer to this manual.