The JA-110ST Bus combined smoke and heat detector

The JA-110ST is a component of the **JABLOTRON JA-100** system. It is used to detect fire hazards in a building interior. The product is not designed to be installed outdoors or in industrial premises. The JA-110ST consists of an optical smoke detector and a heat detector. The optical smoke detector is very sensitive to large dust particles which are present in dense smoke. It is less sensitive to smaller particles generated by the combustion of liquids such as alcohol. That is why the fire detector also contains a built-in heat detector which has a slower reaction but is much better at detecting fire which generates only a small amount of smoke. The detector has a status reaction (reports its activation and deactivation). The detector should be installed by a trained technician with a valid certificate issued by an authorized distributor.

Detector location

The smoke detector must be installed so that any smoke easily drifts into the detector owing to natural thermal circulation (usually on the ceiling). The detector can only be used in enclosed interiors. It is not suitable for interiors where smoke can disperse over a large area and cool down (e.g. interiors with extremely high ceilings – above 5 m) – the smoke would not reach the detector position.

The detector must always be placed in the section leading to the exit of the building (escape route), see Figure 1. If the building has a floor area greater than 150 m^2, installation of an additional detector in some other suitable place is required, see Fig.2.

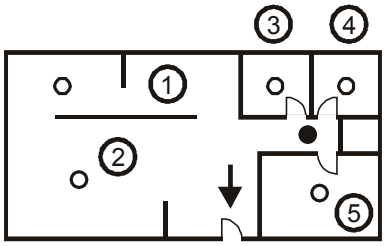
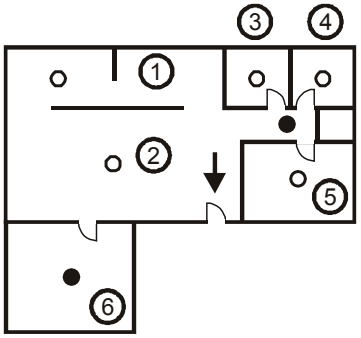


Fig 1



1. kitchen,
2. living room,
3. – 6. bedrooms

● / ▬ basic coverage

○ recommended coverage

Fig 2

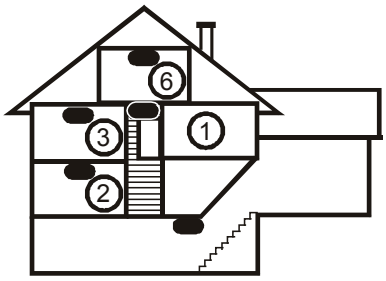


Fig 3

In buildings and family houses with multiple floors, detectors should be installed above stairwells. It is recommended to place additional detectors in rooms where people sleep. See fig 3.

Installation on level ceilings

Place the detector in the center of the room if possible. **The detector must not be recessed into the ceiling** due to the possible existence of a warm air layer on the ceiling. **Never place the detector in the corner of the room** (always keep at least a 0.5 m distance from the corner) see Fig 4. There is an insufficient circulation of air in corners.

Installation on sloping ceilings

If the ceiling is not suitable for mounting on a level surface (e.g. a room under a roof ridge), the detector can be installed as in Fig. 5.

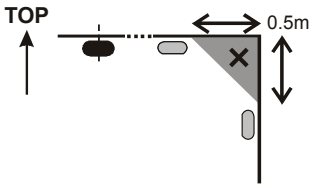


Fig 4

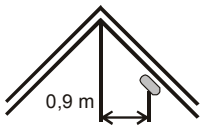


Fig 5

▬ centre of the room, best location
▬ acceptable location

Walls, partitions, barriers and lattice ceilings

The JA-110ST detector must not be installed closer than 0.5 m from any wall or partition. A narrow space with a width of less than 1.2 m requires the detectors to be placed at a distance of at least one third of its width away. In a case when a room is separated into sections with furniture, racks or semi partition walls, which do not reach the ceiling, the space is considered to be fully separated if the gap between the top of these and the ceiling does not exceed 0.3 m. A free space of at least 0.5 m is required under and around the detector. Any irregularities of the ceiling (e.g. girders) exceeding 5 % of the ceiling height should be considered a wall and the above-mentioned limitations should apply.

Ventilation and air circulation

The detectors must not be installed directly by ventilation or air conditioning vents, etc. If the air is supplied through a perforated ceiling, there must be no perforation within a radius of 0.6 m of the detector.

Avoid installing the detector in the following locations:

- Places with poor air circulation (niches, corners, apexes of A-shaped roofs, etc.)
- Places exposed to dust, cigarette smoke or steam
- Places with over-intense air circulation (close to ventilators, heat sources, air conditioning outlets, etc.)
- In kitchens and other cooking places (because steam, smoke or oily fumes can cause false alarms or reduce detection faults).
- In areas with lots of small insects

Warning: The most false alarms are caused by an improper location of the detector.
See CEN/TS 54-14 standards for detailed installation guidelines.

Installation

Abide by the procedures recommended in the previous paragraphs.

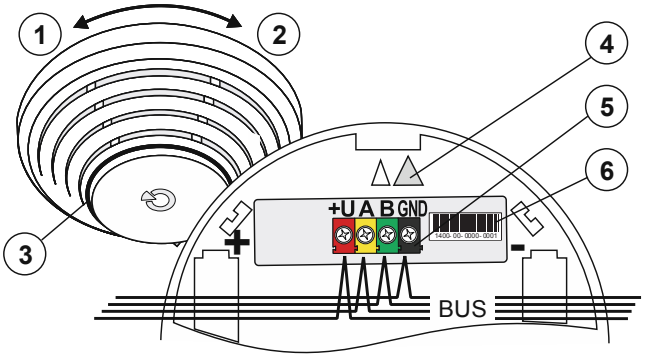


Fig 6: 1 – detector cover opening (removal); 2 – detector cover closing (insertion); 3 – optical signaling; 4 – arrow showing where to insert the detector onto the bottom part; 5 – bus connection terminals; 6 – production code

Instructions

1. Open the detector cover, by turning it anti-clockwise
2. Connect bus cable and attach the plastic base to the selected place using screws.
3. Connect the bus cable.

JABLOTRON ALARMS a.s.
Pod Skalkou 4567/33 | 46601 | Jablonec n. Nisou
Czech Republic | www.jablotron.com

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When connecting the module to the bus, always switch the system's power off.

4. Proceed according to the control panel installation manual. Standard procedure:
   a. When the device is powered, the yellow LED starts flashing repeatedly to indicate that the module has not been enrolled into the system.
   b. Go to the **F-Link** program, select the required position in the ***Devices*** tab and enter the ***Enrollment mode*** by clicking on the ***Enroll*** button.
   c. Click on "Scan/add new BUS devices", select the detector from the list and double-click on it to confirm your selection. The yellow LED light will stop flashing.
5. Insert the detector into the plastic base. It can only be inserted in the position marked with arrows (4) on both plastic parts. Close the detector by turning it clockwise (2). When the detector is fully secured to the base, a control LED lights up (3), which indicates an automatic detector test. During this period of time, the detector won't detect anything. The test ends when the LED shuts down (3) and the detector becomes fully operational. A possible detector fault may be indicated. See the *Fault indication* chapter.

Notes:

In order to facilitate identification when enrolling the detector in F-Link, we recommend removing the sticker with a serial code before inserting the detector into the plastic base. Paste it onto a piece of paper and write down the location of the detector.

The detector can be also enrolled by entering the Enrollment mode and inserting the detector into the plastic base.

Alternatively the detector can be enrolled by entering its serial number (5) in the F-Link program. All numbers stated under the bar code shall be entered (1400-00-0000-0001).

Detector settings

Go to the ***Devices*** window in the F-Link program. When you are at the detector's position, use the ***Internal settings*** option to open a dialog window where you can set:

Reaction: it's possible to choose whether the detector will react to **smoke, heat, smoke or heat or smoke and heat at the same time.**

Fire alarm

Optical detector: When smoke enters the detector, an alarm is triggered, and it is signaled with a rapidly flashing red LED light (approx. 8 times per second). The indication lasts until the detector's detection chamber is ventilated.

Heat detector: When the temperature rises above limit, an alarm is triggered, and it is signaled with a rapidly flashing red LED (approx. 8 times per second). The indication lasts until the temperature drops (e.g. when the room is ventilated).

Alarm memory: If enabled, **LED alarm indication** continues to flash slowly (approx. twice per second) for further 24 hours after the alarm stops. The indication can be terminated by unsetting the section in which the detector is installed.

Tamper alarm: When the detector cover is opened, the detector sends a tamper signal, unless the control panel is in Service mode.

Detector testing and maintenance

The functionality of the optical part of the detector can be tested with a test spray. The functionality of the heat part can be tested with a hairdryer. If the detector is configured to be triggered by both conditions, it's necessary to conduct both spray and hairdryer tests at the same time. The test should be carried out once every 30 days. The detector's cover should be cleaned regularly from cobwebs and dust.

Test button: Pressing the test button will start the automatic detector test. A result of this test is indicated by displaying a green or red circle. The green circle means that the detector works correctly. However the red circle indicates a fault of the detector. In this case, repeat the test. If the fault appears repeatedly then it is necessary to send the detector to the service for repair.

Warning: never test the detector with fire inside the building

Fault indication

The detector checks its functionality. When a fault is discovered, the LED indicator immediately flashes 3 times and then briefly 3 times every 30 seconds. The automatic test indicates a fault the same way. See the Installation chapter

The error found may be caused by a fault of the detection chamber, the temperature of the environment being out of the operating temperature range or other faults of the detector.

An operating temperature range fault will disappear the moment the temperature of the environment turns back to normal.

Other faults found are indicated as a fault even after their cause has gone. The fault indication can be stopped by the functionality test. The basic functionality test is triggered by opening the detector cover (fig 6-1), removing the lower plastic part and putting it back (fig 6-2). If this test results in a fault again, send the detector to the repair service.

WARNING! The control panel must be switched to Service mode otherwise a Tamper alarm will be triggered.

Technical specifications

Power	from control panel digital bus 12 V (9…15 V)
Current consumption in standby mode	5 mA
Current consumption for cable selection	10 mA
Dimensions	diameter 126 mm, height 50 mm
Weight	143 g
Smoke detection	optical light scattering
Smoke detector sensitivity	m = 0.11 - 0.13 dB/m pursuant to EN 54-7
Heat detection	class A2 according to EN 54-5
Alarm temperature	+60 °C to +70 °C
Operating temperature range	-10 °C to +80 °C
Complies with	EN 54-5, EN 54-7 EN 50130-4, EN 55022

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JABLOTRON ALARMS a.s. hereby declares that the JA-110ST is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/30/EU, 2011/65/EU. The original of the conformity assessment can be found at www.jablotron.com - Section Downloads.

Note: Although this product does not contain any harmful materials we suggest you return the product to the dealer or directly to the producer after use.