The JA-82ST wireless combined smoke and heat detector

The JA-82ST is a wireless component of the JABLOTRON ALARMS OASIS alarm system. It is used to detect fire hazards in the interior of residential or commercial buildings. It is not designed to be installed outdoor or in industrial premises. The detector is powered by three LR6 (AA) type alkaline batteries, which are not included. We recommend you buy them together with the detector. The JA-82ST consists of two independent detectors – an optical smoke detector and a heat detector. The optical smoke detector works on the principle detection of scattered light and 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 there is also a built-in heat detector which has a slower reaction but is much better at detecting fire which generates heat with 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 range and location

The smoke detector must be installed so that any smoke easily drifts into the detector owing to natural thermal circulation, e.g. on the ceiling. It is suitable for residential buildings but not suitable for free spaces, outdoor environments or interiors with extremely high ceilings (above 5 m) where fire by-products can disperse over a large area – 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 m2, installation of an additional detector in some other suitable place is required, see Fig.2.

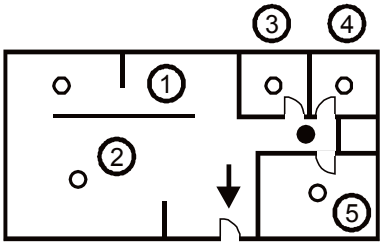
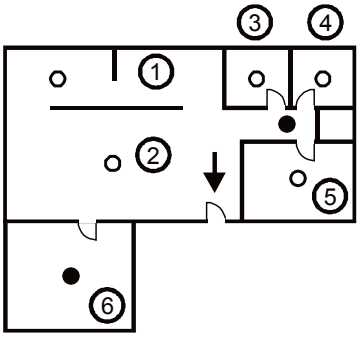


Fig 1



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

● / ▬ basic coverage

○ recommended coverage

Fig 2

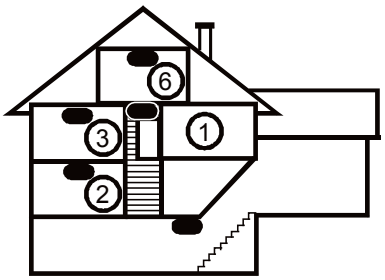


Fig 3

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 cool air layer on the ceiling. **Never place the detector in the corner of the room though** (always keep at least a 0.5 m distance from the corner) see Fig 4. There is an insufficient circulation of air in the 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

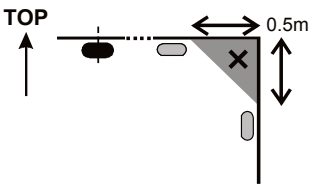


Fig 1

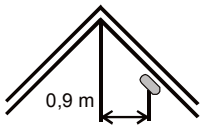


Fig 2

▬ center of the room, best location ▬ acceptable location

Walls, partitions, barriers and lattice ceilings

The JA-82ST 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 detector to be placed at a distance of at least one third of its width away. If 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 the separating wall 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 shall be considered a wall and the above mentioned limitations shall 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 reduce detector sensitivity, thus cause false alarms and detection faults).
- Within a 1 m radius of fluorescent tubes or energy-saving light bulbs (electrical interference may negatively affect the detector's radio communication)
- In areas with lots of small insects

Please note: The most false alarms are caused by improper detector location.

See CEN/TS 54-14 standard for detailed installation guidelines.

Installation

Abide by the procedures recommended in the previous paragraphs.

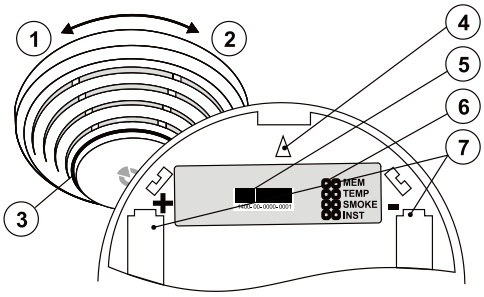


Fig 3: 1– detector cover opening; 2 – detector cover closing; 3 – optical status signaling; 4 – arrow showing where to insert the detector; 5 – enrollment code; 6 – configuration terminals; 7 – battery holders

1. **Open the detector cover, by turning it anti-clockwise (1)**
2. **Attach the removed plastic base** to the desired place with screws
3. **Set the configuration terminals (6) according to the table below.**
4. Proceed according to the control panel installation manual. Basic procedure:
   a. Switch the control panel to the Service mode and enter the enrollment mode by pressing 1.
   b. When you insert all batteries into the detector, the enrollment code is sent to the system – its sending is confirmed with a short flash of the LED indicator (3).

c. The control panel confirms the enrollment with a flashing of the "A" LED on the system keypad at the corresponding position.
d. Exit the Enrollment mode by pressing #.

5. Insert the detector into the plastic base. The detector can be inserted into the plastic base only in one position, which is marked with arrows (4) on both plastic parts, provided that all three batteries are inserted. Close the detector cover 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 doesn't detect anything. The test ends when the LED shuts down (3), the detector becomes fully operational. A possible detector fault may be indicated, see the *Fault indication* chapter.

Note: The detector can also be enrolled into the system by entering its serial number (5) in the O-Link program. (Enter the last 8 digits under the bar code).

Detector setting

The detector properties can be set in the **Detectors** window in the **O-Link** program and with the configuration terminals.

You can choose a type of reaction, to which the system will react upon the detector's activation, in the **Reaction** option in the **Detectors** tab.

The terminals in the detector can set other options:

1	ON	Memory disabled	2	OFF	Smoke(EN 54-7) or heat (EN 54-5)
	OFF	Memory enabled	3	OFF	
2	OFF	Smoke only (EN 54-7), (not heat)	2	ON	Heat only (EN 54-5) (not smoke)
3	ON		3	OFF	
1 MEM 2 TEMP 3 SMOKE 4 INST		ON	2	ON	Smoke and heat (both conditions at the same time)
			3	ON	
		OFF	4	ON	Instant alarm
				OFF	Fire alarm

Jumper 1 MEM - Signaling the alarm memory. The signaling LED remains active for 24 hours after the reason for the alarm ceases to exist.

Jumper 2 and 3 TEMP and SMOKE - The combination of these configuration jumpers defines how the detector will react to smoke or heat.

Jumper 4 INS jumper sets the reaction of the system when activated:

- **FIRE** = alarm is triggered no matter if the system is set or unset
- **INST** = alarm is triggered only when the system is set. This is used in places where we usually expect smoke to appear (fireplaces, cigarettes…). Warning – when unset, the system doesn't monitor for a fire hazard

The jumper only has an effect if the detector has a natural reaction assigned to its address in the Oasis control panel. It also has no effect when used with a UC-8x or AC-8x receiver.

Warning: This device cannot be considered a fire detector when it's configured to the INST reaction. The control panel signals an alarm only when it's set. The detector signals an alarm with a quickly flashing red LED (approx.8 times/s) regardless of the control panel status.

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 room is ventilated (thus also ventilating the detector's detection chamber).

Heat detector: When the temperature rises above a set 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 flashing slowly (approx. 4 times per second) for a further 24 hours after the alarm stops. The indication can be terminated by opening the detector cover by turning it anti-clockwise and activating the tamper sensor.

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

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

Detector testing and maintenance

The functionality of the optical part of the detector can be tested with a test spray for smoke detectors. Functionality of the heat sensor can be tested with a hairdryer. In case the detector is configured to both conditions, it's necessary to conduct both spray and hairdryer tests at the same time. The test should be carried out once in 30 days. The detector's cover should be cleaned regularly from cobwebs and dust. No additional maintenance is necessary.

Warning: never test the detector with fire inside a building.

Battery replacement

The system sends a report automatically when the battery is low. Optical indication then flashes briefly once every 30 seconds. Remember to switch the system to Service mode before changing the batteries (otherwise a tamper alarm will be triggered). It is always essential to replace all three batteries. Use the same type and the same brand for all of them. Wait for 30 seconds in order to let the detector's circuitry discharge before inserting new batteries.

Fault indication

The detector checks its functionality. When a fault is detected, LED indication immediately flashed 3 times and then briefly 3 times every 30 seconds (a failure of the automatic functionality test is signaled 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 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, send the detector to the repair service.

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

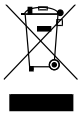
The detector will alert you in case of low batteries by an LED flashing briefly once every 30 seconds.

Technical specifications

Power	3 x alkaline battery type LR6 (AA) 1.5 V Warning: Batteries are not included
Typical lifetime	approx. 3 years
Communication frequency	868.5 MHz, OASiS protocol
Communication range	approx. 300 m (unrestricted area)
Dimensions	diameter 126 mm, height 50 mm
Weight	140 g (without batteries)
Smoke detection	optical light scattering
Smoke detector sensitivity	m = 0.11 - 0.13 dB/m according 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 54-25,
Also complies with	ETSI EN 300220, EN 50130-4 EN 55022, EN 60950-1
Can be operated according to	ERC REC 70-03

CE 15 1293-CPD-0250

JABLOTRON ALARMS a.s. hereby declares that the JA-82ST is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/53/EU, 2014/35/EU, 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.

JABLOTRON
CREATING ALARMS

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