The JA-82ST wireless combined smoke and heat detector

The JA-82ST is a wireless component of the JABLOTRON ALARMS OASIS security system. It is used to detect fire hazards in the interior of residential or commercial buildings. It is not designed to be installed in industrial premises. The JA-82ST detector uses wireless communication and it is powered with three AA 1.5V alkaline batteries.

The JA-82ST consists of two independent detectors – an optical smoke detector and a heat detector. The optical smoke detector works on the principle 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 quickly with a small amount of smoke. The microprocessor performs digital analysis of these values which markedly increases false alarm immunity.

Detector range

The smoke detector must be installed so that any smoke easily drifts into the detector, 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.

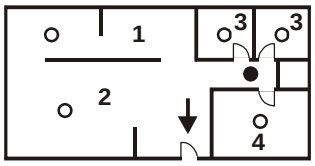

Fig 1

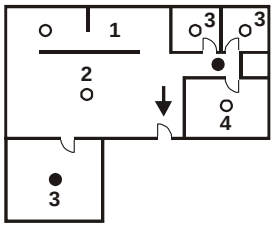

Fig 2

1-kitchen
2-living room
3-bedroom
4-children's bedroom

● - Basic security
○ - For more security

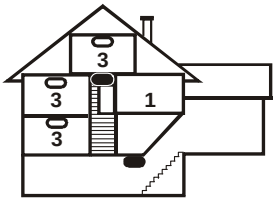

Fig 3

For large buildings it is recommended to place additional detectors in rooms where people sleep and in rooms with an increased risk of fire - see Fig.3.

Installation on level ceilings

Place the detector in the centre 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.

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

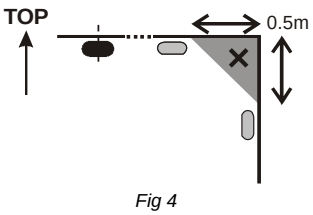

Fig 4

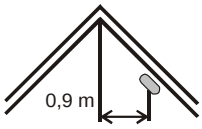

Fig 5

● centre of the room, best location ⬭ acceptable location

Walls, partitions, barriers and lattice ceilings

The JA-82ST detector must not be installed closer than 0.5 m from any wall or partition. A narrow room with a width of less than 1.2m requires the detector(s) to be placed at a distance of at least one third of the room's width away. In the case of separating walls (partitions, warehouse objects) 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 0.5m is required under 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 a fresh air inlet (e.g. air conditioning vents). In the case of air being supplied through a perforated ceiling, each detector must be placed so that no perforation hole occurs within 0.6m 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).
- beside fluorescent lights (electrical interference can cause a false alarm)
- in areas with lots of small insects

Please note: Most false alarms are caused by improper detector location.
See CEN/TS 54-14 standards for detailed installation guidelines.

Installation

The detector should be installed by a trained technician with a valid certificate issued by an authorized distributor. Abide by the procedures recommended in the previous paragraphs.

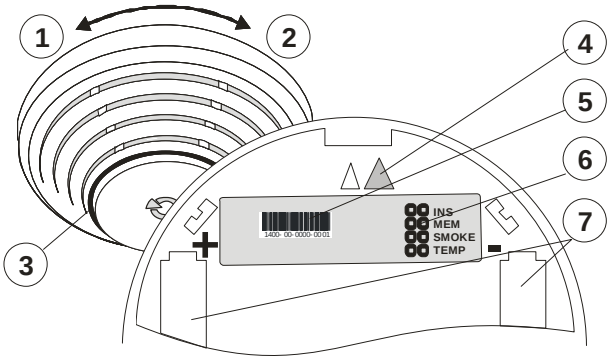

Fig 6: 1– detector cover opening; 2 – detector cover closing; 3 – optical status signalling; 4 – arrow showing where to insert the detector; 5 – enrollment code; 6 – configuration terminals; 7 – battery holders

1. **open the detector cover, by turning it anti-clockwise (1)**
2. **attach the removed plastic base** to the desired place with screws (not shown above).
3. **set the configuration terminals (6) according to the table below.**
4. Proceed according to the control panel installation manual. Basic procedure:
   a. Switch on the enrollment mode in the control panel.
   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.
5. Insert the detector into the plastic base. The detector can be inserted in the plastic base in one position only. It is marked with arrows (4) on both plastic parts. Close the detector cover by turning it clockwise (2).

Note: The detector can also be enrolled into the system by entering its enrollment code (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.

1	ON	Instant alarm	3	OFF	smoke (EN 54-7) or heat (EN 54-5)
	OFF	Fire alarm	4	OFF	
2	ON	memory enabled	3	ON	smoke only (EN 54-7) (not heat)
	OFF	memory disabled	4	OFF	
1 INS 2 MEM 3 SMOKE 4 TEMP	●● ON ● OFF		3	OFF	heat only (EN 54-5) (not smoke)
			4	ON	
			3	ON	Both smoke and heat (both conditions at the same time)
			4	ON	

1: The **INS** alarm mode jumper sets the reaction of the system. FIRE = alarm is triggered even if the system is disarmed while INST = alarm is triggered only in an armed system. The **INS** 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: In the INS position, while the system is disarmed, it is not protecting against fire. This setting also fully disables the optical and acoustic indication on the detector itself.

2: MEM Alarm memory: If the event memory is ON at the time of alarm, alarm LED indication continues even if normal conditions are restored. The indication can be stopped by pressing the button (indication is valid only for FIRE settings).

3 and 4: SMOKE / TEMP sensor participation

Optical smoke sensor: Smoke entry into the detector is indicated as a pre-alarm state by the LED flashing. If the smoke threshold density is exceeded, a siren sound is generated (indication is valid only for FIRE settings).

Temperature sensor: indication logic is equal to that of the smoke sensor.

Whenever the detector cover is opened, a tamper signal is sent.

Fire alarm

Optical detector: When smoke penetrates into the detector, the detector starts flashing red and sending an alarm signal.

Heat detector: When the temperature reaches the set limits, the detector starts flashing red and sending an alarm signal.

Alarm memory: If it is enabled, alarm indication with slow flashing continues for a further 30 minutes even when the smoke clears. The indication can also be terminated by turning the detector anti-clockwise to activate the tamper sensor.

Tamper alarm: When the detector cover is opened, the detector sends a tamper signal.

Detector testing and maintenance

The functioning of the detector can be tested with a special spray designed for smoke detector testing to simulate fire. **The test should be carried out once in 30 days**. The detector's cover should be cleaned regularly from dust.

Warning: never test the detector with fire.

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 three. When all batteries have been inserted into the detector, a test is carried out automatically. The test checks the battery voltage and the sensor status and the information is then sent to the control panel.

Fault indication

The detector checks its functioning. If it detects a fault, its Optical indication starts flashing rapidly for 1 minute and then it flashes briefly three times every 30 seconds. In such a case, take out the battery for 1 minute and then insert it again. If the LED indicator starts flashing again after 1 minute, send the detector to a service centre.

Technical specifications

Power	3 x AA 1.5V; 2.4Ah alkaline batteries
Typical lifetime	approx. 3 years
Communication band	868.5 MHz, OASiS protocol
Communication range	approx. 300 m (unrestricted area)
Dimensions	diameter 126 mm, height 50 mm
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 **1293-CPD-0250**

JABLOTRON ALARMS a.s. hereby declares that the JA-82ST detector is in compliance with the essential requirements and other relevant provisions of Directives 1989/106/EC and 1999/5/EC. The original of the conformity assessment can be found at www.jablotron.com - Technical Support section

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. For more detailed information visit www.jablotron.com.

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CREATING ALARMS

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