

# SD-283ST Wired combined smoke and heat detector

The SD-283ST is used to detect fire hazards in the interior of residential or commercial buildings. The detector is also suitable for installing in caravan trailers or mobile homes. The product is not designed to be installed in industrial premises.

The detector indicates fire hazard using the built-in LED indicator and acoustic signalling. The detector can also be powered from an external 12 V DC source or from the alarm system control panel and it provides ALARM and TMP outputs. When the detector is used with inserted batteries (3x 1.5 V AA), it can continue operating as a stand-alone detector when the external 12 V power supply is disconnected.

The SD-283ST consists of two independent detectors – an optical smoke detector and a heat detector. The optical smoke detector works on the principle of scattered light. It 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.

## Detector range and location

The smoke detector must be installed so that any smoke easily drifts into the detector owing to natural thermal currents, 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 detectors should be installed by a trained technician with a valid manufacturer's certificate.

Detectors should be installed in the building according to the project documentation. If such documentation is not available, their position should comply with the effective standards for fire alarm signalling systems.

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

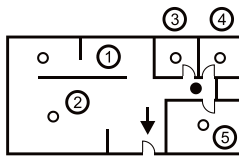


Fig 1

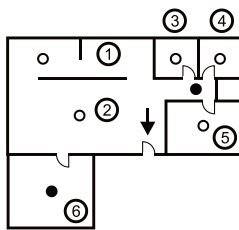


Fig 2

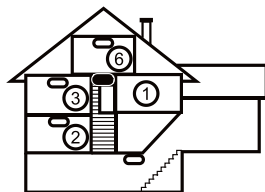


Fig 3

In multi-storey flats and family houses the detector should be installed above the stairs. It is recommended to place additional detectors in rooms where people sleep. 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 (always keep at least 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.

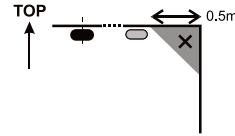


Fig 1

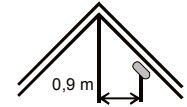


Fig 2

- centre of the room, best location
- acceptable location

## Walls, partitions, barriers and lattice ceilings

The SD-283ST detector must not be installed closer than 0.5 m from any wall or partition. A narrow room with a width of less than 1.2 m requires the detector(s) to be placed at a distance of at least one third of the room's 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. 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 cause false alarms or reduce detector sensitivity).
- beside fluorescent lights or energy-saving light bulbs (electrical interference can cause a false alarm)
- in areas with lots of small insects

**Warning: Most false alarms are caused by improper detector location.**  
See CEN/TS 54-14 standard for detailed installation guidelines.

## Installation

When installing the detector, abide by the procedures recommended in the previous paragraphs.

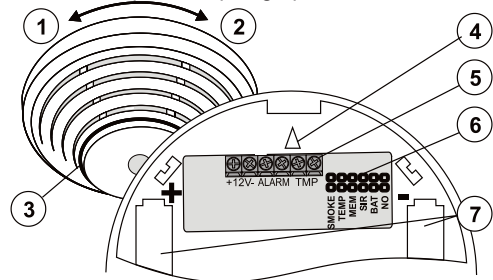


Fig 3: 1 – detector cover opening; 2 – detector cover closing; 3 – optical status signalling; 4 – arrow showing where to insert the detector; 5 – terminal; 6 – configuration terminals; 7 – battery holders

1. Open the detector cover, by turning it anti-clockwise (1)
2. Attach the base to the selected place using screws.

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3. use the terminals (6) to set the required detector function – see the table below

1	OFF	smoke (EN 54-7, EN 14604) or heat (EN 54-5)	1	OFF	heat only (EN 54-5) (not smoke)
2	OFF		2	ON	
1	ON	smoke only (EN 14604, EN 54-7) (not heat)	1	ON	Both smoke and heat (both conditions at the same time)
2	OFF		2	ON	
			3	ON	memory disabled
				OFF	memory enabled
			4	ON	siren disabled
				OFF	Siren enabled (EN 14604)
			5	ON	Battery detection disabled
				OFF	Battery detection enabled
6	ON	NO switching contact			
	OFF	NC break contact			

**Caution:** When the detector is installed in caravan trailers, use only the “smoke only” or “both smoke and heat” settings.

4. connect the **ALARM** and **TMP** (5) terminals – first study the control panel installation manual before connecting the wires to the detector terminal board
5. connect power supply to 12 V terminals (6)
6. 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). Bear in mind that the connecting wires must not restrain the functioning of the testing buttons.

**Note:** Detector insertion into the base is blocked unless all 3 batteries are inserted! (only if EN 14604 compliance is required).

When batteryless detector operation is required (EN 54-x), the blocking mechanisms preventing insertion of the detector without inserted batteries should be removed.

The mounting base must not be replaced by bases meant for detectors without the test button consisting of pressing the body of the detector.

## Detector setting

The detector properties can be set with the configuration terminals.

**SMOKE and TEMP** combination of these terminals defines whether the detector will react to smoke and heat.

When the detector is installed in caravan trailers, use only the “smoke only” or “both smoke and heat” settings.

**MEM** alarm memory signalling – if enabled, the detector LED remains active for additional 24 hours. The signalling can also be terminated by pressing the detector body against the base.

**SIR** allows deactivating the built-in siren (in stand-alone mode the siren always works).

**BAT** blocks the low battery detection during operation in EN 54-x mode

**Caution:** if the detector is used without batteries then it stops working completely when the +12V power is disconnected

**NO** determines the function of the ALARM output terminal (switching/break), the TMP output is always NC (break)

## Fire alarm

**Fire alarm** is signalled both acoustically and optically (depending on the settings).

When the conditions for fire alarm triggering are met (smoke is detected in the room, the alarm temperature is reached, or both conditions are met), the detector signals the danger by sounding the siren, quick flashing of the LED indicator (3) and activation of the ALARM output terminal.

**Silencing the siren during an alarm:** The siren can be silenced by pressing the detector body against the base. The siren is inactive for 10 minutes. If the detector still detects smoke or heat after this time, the siren is activated again.

When the need arises (e.g. in the case of a detector failure), it is possible to postpone siren reactivation by up to 12 hours. This can be done by pressing the detector again for 5s after silencing the siren. When the detector chirps, you have to release the pressure within 1s. The switchover to the postponed siren mode is confirmed

with 5 chirps. The detector LED flashes all the time during the postponement.

**Alarm memory:** If it is enabled, LED indication with slow flashing continues even when the smoke clears or when the temperature decreases. The indication lasts 24 hours unless it is terminated by pressing the detector body.

**Tamper alarm:** When the detector cover is opened, the TMP output terminal is activated.

## Detector testing and maintenance

The detector should be tested at least once per month. To test the detector press the detector against the base and wait until a LED indicator switches on. The LED flashing signals switchover to the testing mode. The LED is flashes for the whole duration of the test. When the test is complete, the LED switches off. The detector then signals the result. If the detector beeps once, the test has been done successfully. If a failure is discovered, the LED flashes and beeps three times. If the battery is low, there is no acoustic signalling but just one flash when the test is completed.

When the testing is completed the ALARM terminal is activated for a short time.

The complete functioning of the detector can be tested with a testing spray (e.g. SD-TESTER). The heat sensor can be tested with heated air (e.g. with a hair dryer).

**Warning: never test the detector with fire.**

## Fault indication

The detector checks its functioning. If it discovers a fault, it chirps and flashes the LED three times and then flashes shortly three times every 30 s.

A detector test can be carried out when a fault is signalled. To test the detector, press its whole body against the base. During the test the detector checks whether there is still a fault. The red LED flashes during the testing. When the test is completed, the LED stops flashing and then signals the result. A persistent fault is signalled by 3 flashes and 3 beeps. If the fault has been fixed, the detector chirps shortly.

If you have not managed to fix the fault, the detector must be sent to a service centre.

## Battery replacement

The detector checks the battery status if used and if the batteries are running low, the detector signals that they need replacing by short flashes every 30 s. Replace the batteries as soon as possible. Always replace all three batteries of the same type and manufacturer.

Use only high-quality 1.5V AA alkaline batteries.

**Do not throw used batteries into ordinary household waste. Deposit them at authorized collection points.**

## Technical specifications

Power	9 – 15 V DC / 3.5 mA (150 mA during an alarm) or 3 pcs of AA 1.5 V alkaline batteries
Typical lifetime	approx. 3 years
Smoke detection	optical light scattering
Smoke detector sensitivity	$m = 0.11 \div 0.13 \text{ dB / m}$ pursuant to EN 14604:2005, EN 54-7
Heat detection	class A1 according to EN 54-5
Alarm temperature	+ 60 °C to +65 °C
Operating temperature range	-10 °C to +65 °C
Dimensions, weight	diameter 126 mm, height 52 mm, 150 g
Conformity	EN 50130-4, EN 55022



**1293-CPR-0397**

JABLOTRON ALARMS a.s. hereby declares that the SD-283ST detector is in compliance with the essential requirements and other relevant provisions of Regulation 2011/305/EU, 2011/65/EU and Directive 2004/108/EC. The original of the conformity assessment can be found at [www.jablotron.com](http://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](http://www.jablotron.com).