

# The SD-282ST combined smoke and heat detector

The SD-282ST 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 detector indicates fire hazards using the built-in LED indicator and alarm outputs ALARM and TAMPER. These outputs must be connected to control panels complying with EN 50131-3..

The SD-282 ST 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 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 m<sup>2</sup>, installation of an additional detector in some other suitable place is required, see Fig.2.

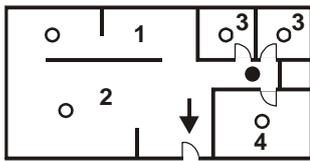


Fig. 1

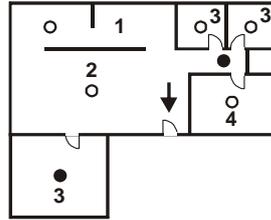


Fig. 2

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

- - Basic security
- - For more security

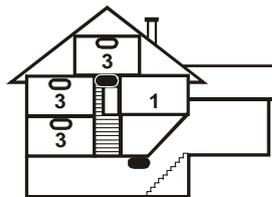


Fig. 3

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.

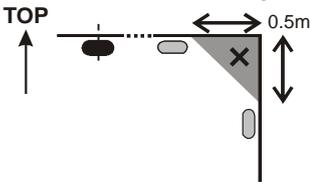


Fig. 4

- centre of the room, best location
- acceptable location

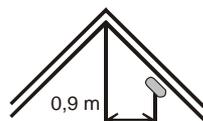


Fig. 5

## Walls, partitions, barriers and lattice ceilings

The SD-282ST 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.

## Installing the detector

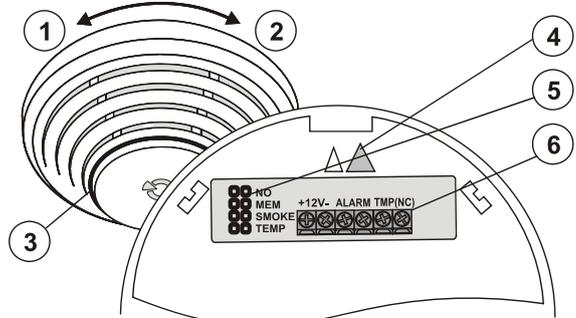


Fig. 6: 1 – detector cover opening; 2 – detector cover closing; 3 – optical status signalling; 4 – arrow showing where to insert the detector; 5 – configuration jumpers; 6 – connection terminals;

1. **open the detector cover**, by turning it **anti-clockwise**
2. **attach the removed plastic base** to the desired place with screws (not shown above).
3. **set the required detector function** – see the table below

1	ON	NO contact	3	OFF	smoke (EN 54-7) or heat (EN 54-5)
	OFF	NC contact	4	OFF	
2	ON	memory ON	3	ON	smoke only (EN 54-7) (not heat)
	OFF	memory OFF	4	OFF	
1	NO	ON	3	OFF	heat only (EN 54-5) (not smoke)
	MEM		4	ON	
3	SMOKE	OFF	3	ON	Both smoke and heat (both conditions at the same time)
	TEMP		4	ON	

4. **connect ALARM and TMP terminals** – first study the control panel installation manual before connecting wires to the detector terminal board  
**TMP- has only NC function**
5. **connect power supply to the 12V terminals**
6. close the module cover. The detector can be inserted in the plastic base in one position only. The correct position is marked with arrows on both plastic parts.

## Fire alarm

**Optical detector:** When smoke penetrates into the detector, the detector starts flashing red.

**Heat detector:** When the temperature reaches the set limits, the detector starts flashing red.

**Alarm memory:** If it is enabled, alarm indication continues even when the smoke clears or when the temperature decreases. The indication is terminated by disconnecting power supply or by turning the detector anti-clockwise (tamper sensor activation).

## Fault indication

The detector checks its functioning. If any faults are discovered, it starts flashing rapidly for about 2 minutes. Then there are 3 short flashes every 30 seconds.

In such a case, disconnect the power supply for 1 minute and then reconnect it. If the LED indicator starts flashing again after 1 minute, send the detector to a service centre.

## Technical specifications

Power	9 - 15V DC / 5 mA
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 to +80°C
Dimensions, weight	diameter 126 mm, height 65 mm, 150 g
Conformity	EN 54-7, EN 54-5, EN 50130-4, EN 55022

**CE 1293-CPD-0244**

JABLOTRON ALARMS a.s. hereby declares that the SD-282ST detector is in compliance with the essential requirements and other relevant provisions of Directive 1989/106/EC and 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 information visit [www.jablotron.com](http://www.jablotron.com).