USER'S MANUAL SPD-3.5 COMBINED HEAT SMOKE DETECTOR

The detectors comply with EN 54-5:2003, EN 54-7:2004.

The following abbreviations apply in the manual.
AL – alarm loop;
FACP – control panel.

1 PURPOSE

1.1 The SPD-3.5 combined heat smoke detectors feature:
- fixed temperature detection, A2 class,
- effective detection of smoke,
- LED indication of standby mode and alarm condition,
- 2-wire connection to 12/24V FACP or fire intruder CP,
- indoor use.

1.2 When exceeding the threshold ambient temperature value the detector shall issue the alarm signal for FACP.

1.3 The Fire mode is indicated with the red LED indicator (steadily lit – DC AL, flashing – AC AL).

1.4 The red LED flashes every 1-2 sec in standby mode.

2 TECHNICAL SPECIFICATIONS

2.1 Static response temperature range, °C……54 – 70
2.2 Smoke sensor response time, sec……10
2.3 Supply voltage range, V……..10 - 30
2.4 Standby current consumption, mA……..≤0,095
2.5 Alarm current consumption, mA…….6-30
2.6 Internal resistance in the fire mode, Ohm……<500
2.7 Dimensions, mm……..⌀100 × 48
2.8 Weight, g…….150
2.9 Average lifespan, years ……..≥10
2.10 Operating temperature range, °C……..from -10 to 55

3 ITEMS SUPPLIED WITH THE DETECTOR

Name	***Quantity***	***Note***
SPD-3.5 combined heat smoke detector	Up to 25 pcs	B103-02 base included
Manual	1 pc.	Per a package
Package	1 pc.	Per 25 pcs

K-4 mounting rings for installation to suspended ceilings if ordered separately.

4. DESIGN AND PRINCIPLES OF OPERATION

4.1 The principle of the detector's operation is based on the control of optical medium density and temperature.

4.2 The detector consists of the detector itself and the base. The optical system, the signal processing electronic unit and LED control circuit are placed in the plastic housing of the detector and two sensors – heat sensor for temperature control and the optical system for optical density control. The detector is connected to the base with a 4-contact joint.

4.3 When there is no smoke in the sensitive zone of the optical system and ambient temperature is below the threshold, and the detector connected to the control panel will be in standby mode, the red LED periodical flashing indicates about.

4.4 When smoke appears in the sensitive zone of the optical system or ambient temperature exceeds the threshold, the electronic circuit issues the alarm signal by intermittent change of internal resistance that leads to current growth in alarm loop. The red LED is switched on in alarm mode and is steadily lit (DC AL). If the detector is connected to AC AL, the red LED in Fire mode flashes with the frequency determined by FACP.

4.5 The resetting of detectors to the standby mode occurs when the mains supply switches off for not less than 3 s with the following energizing.

5. PLACEMENT AND INSTALLATION

5.1 You should site detectors in places with the following conditions:

-minimal vibrations of constructions;

-minimal illumination intensity;

-maximum distance from sources of electrical-magnetic interferences (electric wiring etc.), infra-red radiation (heat devices);

-elimination of water ingress on the case and penetration out of the base;

-no gas, steam, aerosol emission that can cause corrosion.

5.2 Detectors are connected to the loop with bases. The bases should be secured onto the detectors' site of mounting using two Ø6x25 mm expansion bolts and two Ø3x30 mm self-tapping screws. The center-to-center distance between mounting holes of the base is 70±0,2 mm.

5.3 You can connect up to three 0,5 mm^2 wires to one screw joint of the base.

5.4 There is an auxiliary free contact (screw joint) "5" on the base. The contact is for convenient fitting EOL and limiting resistors. The view of the base appears in Figure 1.

5.4 You should provide protection against construction debris, paint and dusts when repairing lodgings.

5.5 The wiring diagrams for detectors to AC/DC control panels are shown in Figure 2- Figure 3.

6. PREPARATION FOR OPERATING AND SEQUENCE OF OPERATIONS

6.1 Open the package after receiving detectors, check contents.

ATTENTION! If detectors were in below 0^o C temperature conditions before opening the package, allow them to acclimatize inside the structure for at least 4 hours.

6.2 Test detectors for proper operating.

6.2.1 Connect the detector to a DC power source of 20-30 V and ≥50 mA load current ("plus" connect to the contact "5", between contacts "5" and "2"connect the 1 kOhm±5% current limiting resistor, "minus" – to the contact "3").

6.2.2 Switch on the mains supply and in not less than 10 s introduce into the test hole on the detector's cover (plastic or metal pin Ø0,9 mm, 4-5 mm long) and simultaneously switch the stopwatch on.

6.2.3. When the red LED gets lit, stop the stopwatch and determine the response time (lag) that should be ≤10s.

6.3 The reset to standby mode should be made by turning off the mains supply for at least 3 s.

7. MAINTANCE

7.1 Vacuum at least every six months to keep unit working efficiently by firstly turning off the mains supply and vacuuming through the vents during one minute using a soft brush attachment or using another 0,5-3 kg/cm^2 compressor.

7.2 Then test detectors for proper operating. If the detector is detached from the base then the test should be made according to p.6.2.

7.3 The test of the smoke sensor should be made by inserting a tester into the hole on the detector's cover, and heat sensor – with air current directed to the heat element with temperature on 5ºC higher than maximum threshold response temperature. The red LED will be lit if the detector operates properly, and the control panel will issue the alarm signal.

8. GUARANTEE

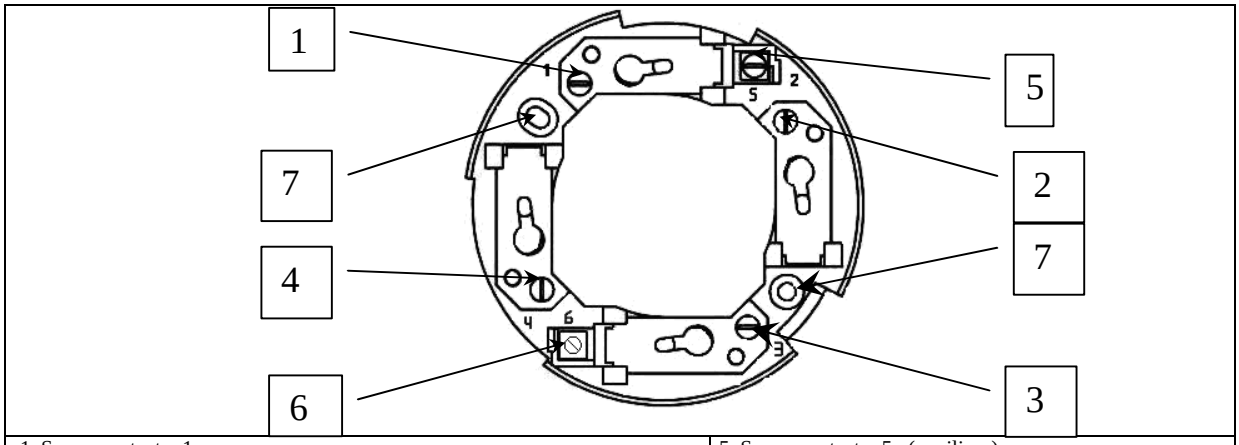
8.1 The detector is warranted by the manufacturer for 18 months upon the date of the detector's commissioning but not more than for 30 months from the date of approval by the manufacturer's quality control department.

8.2 The manufacturer shall repair or replace detectors within the guarantee term provided that the rules of installation, timely maintenance, transportation and storage of detectors have been kept.

8.3 In the case faults according to a reclamation have been removed the guarantee term is prolonged for the while detectors were not in use because of faults.

Figure 1

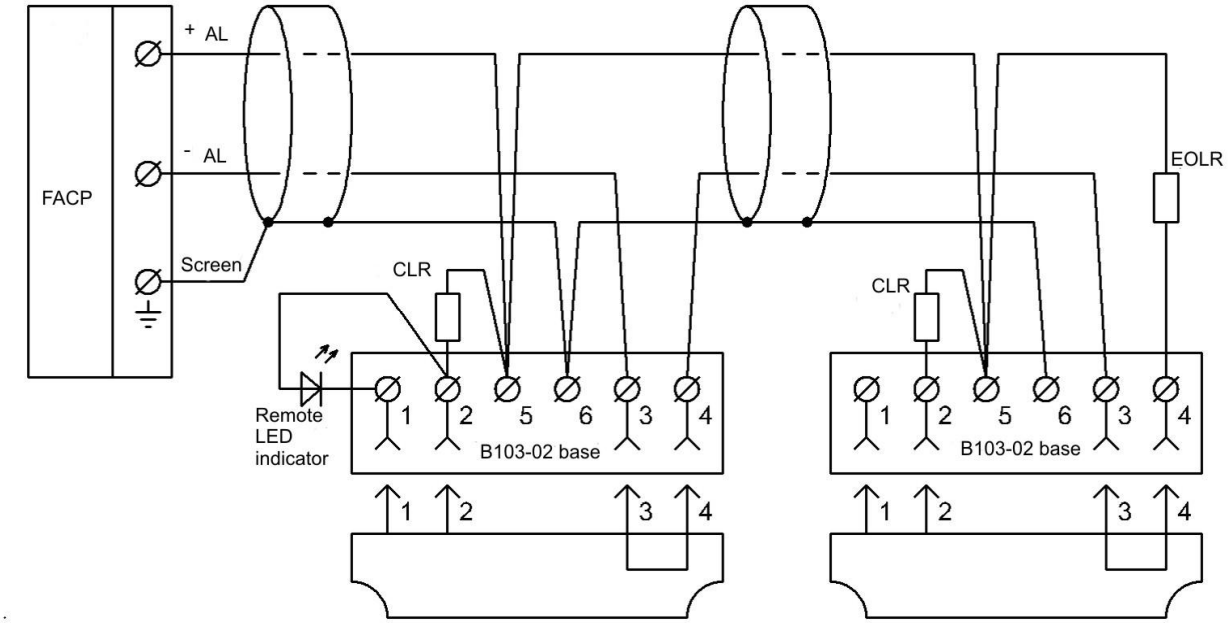
B103-02 BASE



1. Screw contact «1»	5. Screw contact «5» (auxiliary)
2. Screw contact «2»	6. Screw contact «6» (auxiliary)
3 Screw contact «3»	7. Mounting holes
4. Screw contact «4»	

Figure 2

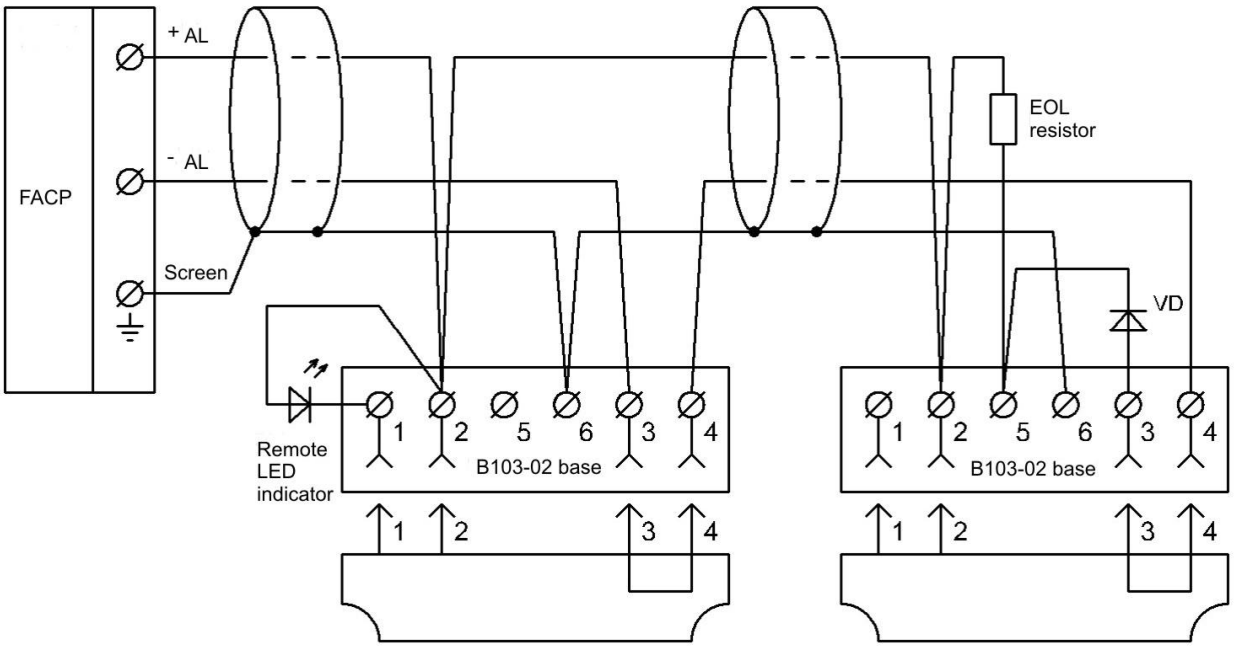
WIRING DIAGRAM FOR SPD-3.5 DETECTORS TO DC CONTROL PANEL



For 24 V AL: EOL resistor=(2,4-3,9) kOhm, CLR=(0,68-3) kOhm
For 12 V AL: EOL resistor=(1,2-2) kOhm, CLR=(0,10-1,0) kOhm

Figure 3

WIRING DIAGRAM FOR SPD-3.5 DETECTORS TO AC CONTROL PANEL



EOL resistor is specified by control panel specifications