



DOT-6000 UNIVERSAL SMOKE AND HEAT DETECTOR DOT-6046 and DOT-6043 variants

Purpose

The universal smoke and heat detector DOT-6000, in the DOT-6046 and DOT-6043 variants, is designed to detect the initial stage of fire during which smoke appears and/or the temperature increases. It is characterized by significant resistance to air movement and pressure changes. Use of a double detection smoke (in the IR and UV range) and a double detection heat systems provides increased resistance to false alarms caused by e.g. water vapor and dust, while maintaining small dimensions and high aesthetics of the detector.

DOT-6046 and DOT-6043 universal addressable smoke and heat detectors are designed to operate on addressable detection lines of the following fire alarm control panels:

- DOT-6046 - all POLON 4000 system control panels POLON 6000, and POLON 3000,
- DOT-6043 – POLON 3000, POLON 4100 and POLON 4200 only.

DOT-6043 universal smoke detectors do not support interactive alarm variants. All other parameters of the DOT-6046 and DOT-6043 detectors are identical.

Principles of operation

The basis of operation of DOT-6046/DOT-6043 smoke detectors is Tyndal's principle - scattering of a light ray on smoke particles. Penetrating into the chamber measuring smoke particles reflect the emitted light through the transmitting diode. The scattered light reaches the photodiode, generating a photocurrent. Penetrating into the detector heat causes changes in the resistance of the thermistors. Information about fire factors from four detectors being subjected are advanced signal analysis by a microprocessor, which assesses the level of fire risk.

Communication between POLON 3000, POLON 4000 or POLON 6000 system control panels and the DOT detectors takes place via addressable, two-wire detection line. Unique, fully digital communication protocol enables transferring any information from the control panel to the detector and from the detector to control panel, e.g.: assessment of the environment condition (smoke, temperature), the tendency of its change and the

current analog value of temperature and smoke density. The microprocessor that controls the detector's operation verifies its correctness operation of basic systems and - if any irregularities detected - provides information to the control panel. The DOT-6043/6046 detector is an analog detector with a digital self-regulation mechanism, i.e. it maintains constant sensitivity as the measuring chamber becomes increasingly dirty. After exceeding the set threshold the detector sends information to the control panel about partial contamination of the measuring chamber in order to inform the services about the appropriate action required.

The detector is equipped with an internal short-circuit isolator That cuts off the functional part of the detection line from the adjacent part damaged which enables continued uninterrupted operation of the detector. The detector's alarm status is signaled by the pulsating red light of two diodes located opposite to each other of the detector housing. The indicator allows to quickly locate the alarming detector and helps with periodic operation monitoring. If the detector is poorly visible or installed in a hard-to-reach place, an additional optical WZ-31 alarm indicator can be attached to it.

Fault, technical alarm and short-circuit isolator activation states are indicated by yellow flashes of the LED. The detector has six basic operating modes that allow the user to optimally adjust it to work in a specific environment:

- mode 1 – interdependent operation of two smoke sensors and two heat sensors,
- mode 2 – interdependent operation of two smoke detectors,
- mode 3 – work as a heat detector,
- mode 4 – independent operation of two smoke sensors and two heat sensors,
- mode 5 – sensors in coincidence (AND function),
- mode 6 – coincident sensors or heat detector with excess temperature threshold.

Technical specifications

Addressable detector operating voltage	16.5 ÷ 24.6 V
Detector power consumption from addressable line	< 150 µA
Heat sensor operating classes	A1R, A2R, BR, A2S, BS
Number of basic operating modes	6
Detected test fires	TF1 to TF 9
Address programming	from the panel
Operating temperature range:	
- for modes with a heat sensor in class A	-25 °C to +50 °C
- for other modes	-25 °C to +55 °C
Dimensions (with the base)	∅ 115 x 54 mm
Mass	0.18 kg

Note

The product was issued by CNBOP-PIB, a notified body No. 1438, certificate of constancy of performance confirming possession of technical features/parameters required by EN 54-5:2017 + A1:2018 standards, EN 54-7:2018, EN 54-17:2005 + AC:2007.

The product was issued by CNBOP-PIB, a notified body No. 1438, national certificate of constancy of performance confirming possession of technical features/parameters required by EN 54-29:2015.

Features/technical parameters exceeding the requirements mentioned standards and others given herein product features/parameters not specified in the catalog card standards are confirmed by the Manufacturer.

The manufacturer has issued a declaration of performance for the product.

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