



DOT-40 MULTI-SENSOR SMOKE AND HEAT DETECTOR

Overview

The DOT-40 multi-sensor (optical smoke and heat) detector is designed for detection of a smoke and a rise in temperature concurrent with a fire at its early development stage. The detector has two built-in sensors: smoke and heat. This allows for the use of the detectors in closed spaces where in case of a fire there is a visible smoke or a rise in temperature or where both of these factors appear simultaneously. The detector is useful in detecting all types of fires from TF1 to TF6 and TF8.

Principles of operation

The DOT-40 detector is equipped with two sensors (smoke and heat). The optical smoke sensor is based on the Tyndall effect – scattering of infrared (IR) radiation on smoke particles. The main element of the detector is an optical module, consisting of an electroluminescence diode emitting infrared radiation and a photodiode being the receiver of the radiation. The optical module is protected by a labyrinth, damping both external light and direct light of the emitting diode. When smoke particles enter the area of the optical module, infrared radiation is scattered on them. Part of this scattered radiation reaches the photodiode that generates an alarm signal. The heat sensor reacts to the rising temperature during a fire. The information from both sensors is subjected to advanced analysis by an appropriately programmed microprocessor, which evaluates the fire hazard.

The DOT-40 detector contains self-compensation circuits, which maintain its constant sensitivity during progressive dirt accumulation inside the measuring chamber. After exceeding a pre-set level of contamination, the detector signals a fault denoting the necessity for servicing and cleaning works.

A failure to perform the servicing works before self-regulation is completely exhausted (e.g. for a few weeks) can cause an initiation of false alarms by the dirty detector.

The applied microprocessor element and the appropriate detector software guarantee, that the entire phenomenon accompanying a fire within the vicinity of the detector will quickly be analysed and possible false alarms will be eliminated. The detectors can operate in three operation modes. The detector's alarm status is indicated by a red LED diode.

An additional optical alarm signal of a detector or a group of detectors can be obtained by connecting the WZ-31 alarm indicator.

The DOT-40 detectors meet the requirements of PN-EN 54-5 and PN-EN 54-7 European standards. They are installed in the G-40 bases.

Technical specifications

Operation voltage	12 V ÷ 28 V
Max. quiescent current	≤ 60 µA
Alarm current	20 mA
Method of coding	
mechanical operation mode	(cramp)
Detectable test fires	TF1 to TF6 and TF8
Operation temperature range	from -25 °C up to +55 °C
Dimensions (with base)	Ø 115 x 71 mm
Mass (without base)	0.15 kg