



DOP-6001 BEAM SMOKE DETECTOR

Purpose

The DOP-6001 beam smoke detector is designed for smoke detection at the start of a fire. It is especially suitable for protection of indoor spaces, in which the appearance of smoke is likely during ignition of a fire, and where, due to a large space area, installation of a greater number of point smoke detectors would be necessary.

These detectors can operate exclusively in POLON-ALFA manufactured fire alarm system detection lines: directly in addressable loop-shaped lines of the POLON 4000 system, in the IGNI 1000/2000 system conventional lines.

Principles of operation

The DOP-6001 detector consists of an infrared (IR) light transmitter and a receiver located in a single housing and an inter-operating E39-R8 prism reflector or 4xE39-R8 reflector panel. Operation of the beam smoke detector is based on an analysis of air optical transparency in the space between the detector and the prism reflector or the prism reflector panel.

If certain defined content of aerosol (smoke) is found in the air reducing optical transparency, then the detector, according to a pre-set sensitivity threshold will evoke an alarm mode. Complete interruption of the radiation beam is signalled as a fault mode because even the largest smoke concentration in the air does not cause complete interruption of the detector optical beam path. If the air is clear, the detector is in a quiescent mode.

The DOP-6001 beam smoke detector is equipped with a built-in automatic compensation systems for monitoring of dirt build-up on its optical system and compensation for environmental conditions ensuring that the detector maintains constant sensitivity and fire detection ability for a long time. At a certain level of dirt build-up, the detector signals a fault mode denoting the necessity to undertake servicing and cleaning works.

Communication between the POLON 4000 system control panel and the detector is executed using a two-wire addressable detection line. The detector is equipped with an internal short circuit isolator. In order to achieve the detector proper functioning, it is necessary to align its optical path. In the case of an addressable detector it is carried out by initiation of such a process from the POLON 4000 system control panel level, or by pressing the START push button (located on the detector) in case the detector operates in a conventional operation mode.

Installation

The DOP-6001 beam smoke detector and the prism reflector or reflector panel are installed on opposite walls of a room. Special adjusting screws are provided at the detector and the reflector panel for precise alignment of the detector and the reflector/s in the optical path. A special laser target viewfinder is actuated at the moment when the optical beam path is aligned.

The prism reflector and the reflector panel are not included in the order product package and they should be ordered separately.

Technical specifications

Addressable detector operating voltage	16.5 ÷ 24.6 V
Detector power consumption from addressable line	< 300 µA
Conventional detector operating voltage	10.5 ÷ 24 V
Quiescent current in conventional line (at choice)	2.2 or 5mA
Alarm current at 20 V	20 mA
Current at radiation beam interruption	< 0.3 mA
Servicing signal current	< 0.3 mA
Operating distance range for E93-R8 reflector	5 to 50 m
Operating distance range for 4xE39-R8 reflector panel	50 to 100 m
Sensitivity thresholds (optional)	18 %, 30 %, 50 %
Number of detectors in an addressable line	64
Number of detectors in a conventional line	1
Power supply of laser target viewfinder (during alignment)	9 V (6F22) battery
Operating temperature range	from -25 °C to +55 °C
Relative humidity	up to 95 % at 40 °C
Dimensions	128 x 79 x 84 mm
Mass	0.35 kg

NOTE

1. For the conventional lines set jumpers to ADC-1 and ADC-38 positions. For addressable lines all jumpers have to be removed (including that for sensitivity setting).
2. For detector testing, the FT-40 test foil should be used; for aligning the detector optical beam path with the reflector set – the LS-40 service mirror should be used (both ordered separately).
3. The highest sensitivity can be obtained by setting its threshold at 18%.