



## DUR-40EX OPTICAL SMOKE DETECTOR

### Overview

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The DUR-40Ex optical smoke detector is designed for detection of a visible smoke at a start of a fire's flameless stage when material starts to smoulder, and therefore generally, a long time prior to the appearance of an open flame and a noticeable rise in temperature.

The detector is designed to function in closed spaces in which, under normal conditions, smoke, dust and steam condensation are not present. Due to the implementation of analogue compensation for environmental changes, the detector is characterized by an increased resistance to changes in atmospheric pressure, temperature, and humidity.

The DUR-40Ex is an intrinsically safe detector designed for installation in explosion hazard zones. The detector can operate in POLON-ALFA manufactured fire alarm system detector lines behind a proper spark proof separator.

### Principles of operation

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The DUR-40Ex is a Tyndall effect based optical smoke detector. Its operation is based on measuring infrared light scattered by smoke particles (aerosol) entering the measuring chamber which is inaccessible to external light.

A photodiode, a radiation detector located inside the measuring chamber, does not detect infrared radiation emitted by a transmitter – an electroluminescence diode - up to the moment when smoke particles enter the measuring chamber scattering the said infrared radiation and directing it at the receiver that generates an alarm signal.

The optical module is protected by a labyrinth, damping both external and direct radiation of the emitting diode. When smoke particles enter the optical module area, infrared radiation (IR) is scattered by smoke particles. Part of this scattered radiation reaches the photodiode.

The DUR-40Ex detector has a built-in self-regulation digital system maintaining constant sensitivity despite progressing dirt build-up inside the measuring chamber. After exceeding a pre-set regulation threshold, the detector sends an alarm signal to the control panel. This necessitates periodic cleaning of the detector's optical system. The detector has a replaceable optical chamber, which in the above said case may be cleaned or replaced with a new one.

The detector is installed in the G-40 base.

### Technical specifications

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Operating voltage	12 ÷ 28 V
Max. monitoring mode current	≤ 60 μA
Alarm current	20 mA
Detectable test fires	TF1 to TF5 and TF8
Operating temperature range	from -25 °C up to +55 °C
Relative humidity	up to 95 % at 40 °C
Colour	black
Dimensions:	
- with base	115 dia. x 54 mm
Mass	0.15 kg

### Additional information

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The DUR-40Ex detector has the ATEX certificate of the Central Mining Institute No. KDB 04ATEX190X and has been granted a spark proof feature - II 2G EEx ib IIC T6.