



UNIVERSAL SMOKE DETECTORS

DUO-6046

DUO-6043

Design

Universal addressable smoke detectors DUO-6046 and DUO-6043 are designed for detecting smoke arising in the initial stage of fire development when the material is still tilting, so generally long before the appearance of open flame and noticeable increase temperature. They are resistant to influence of air movement and pressure changes. There are two smoke sensors used - dual smoke detection system using UV and IR sensors.

Universal addressable smoke detectors DUO are dedicated to work in addressable detection lines as follows:

- DUO-6046 - all POLON 4000 systems and POLON 6000,
- DUO-6043 - POLON 4100 and POLON 4200 control panels only.

Principle of operation

The operation of DUO-6046 / DUO-6043 detectors is based on the Tyndal effect - scattering of the light beam on the smoke particles. Smoke particles penetrating into the measurement chamber reflect the light emitted by the two (UV and IR) transmitting diodes. Reflected light reaches the receiver causing photocurrent which is being amplified and processed into digital form, is analysed by a microprocessor, assessing the level of fire hazard. Communication between the control and DUO detectors is carried out via an addressable two-wire detection line. A unique, fully digital communication protocol enables the transfer of any information from the control panel to detectors and detectors to the control panel. Beside transmitting to the control panel the status of fire factors and its change tendency in the surroundings, detectors may transmit, at the request of the control panel, current analogue fire factor values. The microprocessor controlling the detector operation, checks the operation of its basic circuits and, if it detects any anomalies, transmits relevant information to the control panel.

DUO detectors are analogue ones, with a digital drift compensation mechanism, they maintain constant sensitivity when the dirtiness is increasing. When the pre-set threshold is exceeded, the detector send a message to the control panel about the dirtiness of the measuring chamber. The panel can inform the maintenance company about the need to take appropriate service action. The detectors are equipped with internal short circuit isolators that cut off the working part of the detection line from the adjacent defective part, allowing another detectors to operate. The alarm state of the detector is signalled by the blinks of red light of two diodes, located on the opposite sides of the detector enclosure. If the detector is poorly visible or installed in a hard to access location, an additional optical WZ-31 remote alarm indicator can be connected. Faults, technical alarms and short-circuits operation are indicated by yellow LEDs. Detectors have three basic operating modes that allow the user to optimize their workflow in a specific environment:

- independent operation of two IR or UV smoke sensors
- co-operation of two smoke sensors
- coincidence of two sensors.

Technical data

Operating voltage	from 16,5 to 24,6 V
Max. current consumption in the quiescent state	<150 μ A
Number of programmable modes of operation	3
Detected test fires	from TF1 to TF5, TF7, TF8, TF9
Programming the address	with control panel
Operational temperature range	from -25 °C to +55 °C
Detector dimensions (without base)	ø 115 x 44 mm
Mass	0,2 kg