



UNIVERSAL SMOKE DETECTOR WITH SOUNDER DUO-6046AD

Design

Universal addressable smoke detector with built-in siren DUO-6046AD is 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. It is resistant to influence of air movement and pressure changes. The detector is equipped with two smoke sensors – UV and IR.

Universal addressable smoke detector DUO-6046AD is dedicated to work in addressable detection lines of POLON 4000 and POLON 6000 fire alarm panels.

Principle of operation

The operation of DUO-6046AD detector is based on the Tyndall 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 analyzed by a microprocessor, assessing the level of fire hazard. Communication between the control and detector 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-6046AD detector is an analogue one with digital drift compensation mechanism implemented. Detector maintains constant sensitivity when the dirtiness is increasing. When the pre-set threshold is exceeded, the detector sends 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. Detector is 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 signaled by the blinks of red light of two diodes, located on the opposite sides of the detector enclosure.

If the detector is hardly 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 are indicated by detector's yellow LEDs.

Siren function can be activated by the order from the panel. It can be triggered by any detector reporting fire (programmable).

Detectors have four 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
Max. alarm current	\leq 1 mA
Number of programmable modes of operation	64
Detected test fires	from TF1 to TF5, TF7, TF8, TF9
Programming the address	by control panel
Sound pattern	4 kHz tone: 0,5 sec. signal, 0,5 sec. pause
Maximum sound level	> 85 dB/m from one direction > 70 dB/m from other directions
Operational temperature range	from -10 °C to +55 °C
Detector dimensions (with G-40 base)	\varnothing 115 x 61 mm
Mass	0,2 kg