

MHG 283

Optical Smoke Detector

The MHG 283 Optical Smoke Detector is a self-acting detector intended for the automatic fire alarm signalling as a smoke detector of the analog and addressable Electric Fire Detection and Alarm System LITES, especially for environs with explosion danger.



It responds to fouling – to both visible and invisible smoke particles (aerosols) on the principle of detection of scattered infrared radiation.

The detector may work:

- in zone 1 and 2 of a space with gas burst danger according to ČSN EN 60079-14
- in zone 22 of a combustible dust space according to ČSN EN 50281-1-2
- in space V1, V2, V3 with fire or explosion of explosives danger according to ČSN 33 2340

The MHG 283 detector is meant for cooperation with the analog Control and Indicating Equipments (C.I.E.) MHU 110 or MHU 111, eventually with the addressable C.I.E. MHU 109. The detector contains a program that evaluates the fire situation pursuant to measuring of surrounding smoke concentration, namely in agreement with the following adjustable characteristics:

- sensitivity of the detector; it monitors the surrounding smoke concentration increase compared to the quiescent state, that compensates the climatic and other influences (surrounding temperature, pressure etc.) continuously; the sensitivity can be adjusted in eight degrees that must be selected with reference to the detector's combustion gas load that the detector responds to
- reaction time; the verification level of the fire situation is concerned; adjustable in four degrees, however they can't be expressed through a simple time stamp, because the reaction time depends on the time progression of the fire situation
- dustiness look-out; it monitors the rest level of the detector, and upon this it evaluates the dustiness rate of the optical chamber and consequently the reliability of the detector; it can be adjusted in three degrees, or inactivated; it's set in reference to the dust nuisance rate round the detector and to the setting of other parameters

Further in eight degrees the pre-alert sensitivity can be adjusted, it is always higher than the alert sensitivity (the pre-alert can be adjusted only by the C.I.E.'s MHU 110 and MHU 111). The detector self regulates its internal working characteristics, if they don't reply to the allowable tolerance, fault warnings occur.

The adjustable characteristics can be set either into the configuration program and recorded to the detector through the C.I.E. (MHU 110 or MHU 111), or they can be programmed right by means of the preparation MHY 535 (MHU 109).

To a detection line the detector is to install through the use of the MHY 703 Mounting Base, eventually in environs without explosion danger through the MHY 713 Base.

The detectors comply with the standard specifications ČSN EN 54-7. For their use in the Electric Fire Detection and Alarm System they are liable to the compliance examination according to law No. 22/1997 Sb., in wording law No. 71/2000 Sb. and the relevant orders of the government. For the use in environs with explosion danger the detectors are liable to the homologation of the FTZÚ Ostrava - Radvanice A0 210.

Technical specifications

Supply voltage	Addressable C.I.E.'s LITES
Optical signalling	red LED
Parallel signalling	Type LITES
Smoke sensitivity according to the methodics ČSN EN 54-7 (by the air flow of 1m/s)	adjustable $m = 0,03 \div 0,34$ ($m = 0,06 \div 0,16$ dle ČSN EN 54-7)
Testing procedure	by the test bar MHY 506 by a test from the C.I.E.
Construction according to ČSN EN 50014	EEx e II 85°C (T6)
Protection according to ČSN EN 60529	IP 65 (with the MHY 703 Mounting Base) IP 54 (with the.MHY 713 Mounting Base)
For functional reasons the specific chamber of the detector (sensor) has any protection against water entering.	
Radioscreening degree according to ČSN EN 55 022	B-class equipment
Address setting	by the Addressing Preparation MHY 535 in the range $1 \div 128$
Dimensions	(147 x 90) mm
Weight	c. 650 g
Safety requirements	Product intended for a plant with safety arrangement in terms of ČSN EN 60950

Working conditions

The MHG 283 Optical Smoke Detector is intended for the interior of objects without occurrence of aggressive substances, and for places where its protection and climatic immunity conform, and where sudden temperature changes leading to dew and ice accretion don't occur.	
Working temperature range	$-25^{\circ}\text{C} \div +70^{\circ}\text{C}$
Relative humidity	Permanent $\leq 75\%$ 3×21 days in a year 95% at $+40^{\circ}\text{C}$
Atmospheric pressure	(86 \div 106) kPa

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