

OMD41

Opacity and Dust Concentration Monitor



The Allrounder for Dust Measurements – also at large measuring Paths

The Requirement

With the OMD41 SICK MAIHAK offers an Opacity and Dust Concentration Monitor based on the auto-collimation principle to meet highest standards. Due to its TUV-approval the OMD41 is suitable for applications according to the Federal German Pollution Control Act and the 13th Implementation Ordinance. Furthermore designed to comply with international regulations it completely fulfills international standards for example GOST, by measuring dust emissions and monitoring opacity with high reliability.

Applications Areas

- Power plants, cement plants,
- Glass, steel and paper industry
- Electrostatic precipitator control/regulation
- Special applications (thick channel walls, large duct diameters)

The Measuring Task

The OMD41 Dust Concentration Monitor determines the mass concentration in the dust-laden gas, by an opto-electronic technology based on gravimetric comparison measurement. By continuously monitoring the dust concentration, the device can detect any deviations or exceedances from the emission limit value

The modular Design

The OMD41 is available in the models

- OMD41-02 with minimum measuring range of 100...50 % transmission
- OMD41-03 with minimum measuring range of 100...80 % transmission
- OMD41-04 with minimum measuring range of 100...50 % transmission

One of the remarkable features of both OMD41 models is the automatic zero-point and the span check cycle. An additional integrated linearity measurement features 4 measuring points. A contamination measurement and correction is performed for the optical surfaces of **both** transceiver **and** the reflector unit.

Key Features

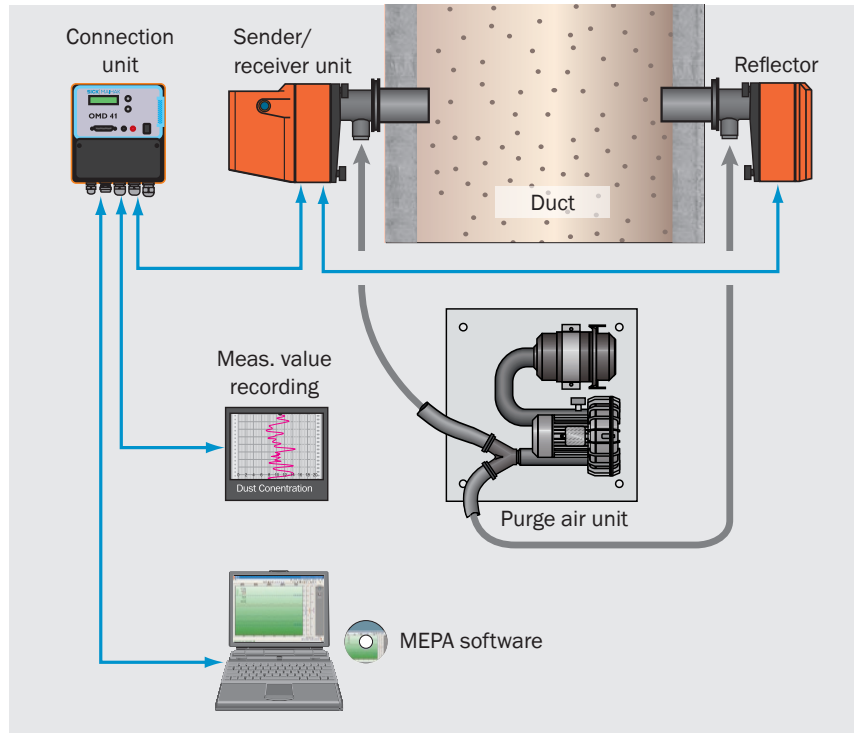
- LC measurement display (opacity, extinction, transmission)
- RCU-MS remote control unit available
- Remote diagnostics via modem possible
- Automatic contamination correction (transceiver and reflector unit)
- Automatic check cycle
- Automatic Built in 4 point linearity check

The Technology

The optical and electronic functional elements are contained within the transceiver unit. A pulsed LED with a long lifetime serves as the light source. An integral sighting device eases alignment of the transceiver and the reflector units. In order to protect the optical surfaces from dust and high temperature the transceiver and reflector unit are purged with air. The connection unit contains the display and operating elements and all connections. The OMD41 can be controlled via:

- connection unit directly
- MEPA OMD41 on a PC
- RCU-MS remote control unit.

The parameters of the OMD41 can be easily set via modem.



Technical Data OMD41			
Measuring Data			
Measuring principle	Transmission in auto collimation; light passes through measuring path twice		
Measuring range	OMD41-02	OMD41-03	OMD41-04
• Transmission (max/min)	100...0 %/100...50 %	100...0 %/100...80 %	100...0 %/100...50 %
• Opacity (max/min)	0...100 %/0...50 %	0...100 %/0...20 %	0...100 %/0...50 %
• Extinction (max/min)	0...2/0...0.3	0...2/0...0.1	0...2/0...0.3
• Dust concentration ¹⁾	max. 0...4,000 mg/m ³ min. 0...200 mg/m ³		
Accuracy	± 2 % fullscale		
Response time	1...600 s, in stages from 1 s freely selectable		
Plant Data			
Measuring path	0.5...15 m		
Meas. gas temperature	above dewpoint up to 600 °C / 1,112 °F		
Ambient temperature	-20...+55 °C / -4...+130 °F		
Meas. gas pressure	max. +10 hPa / +4 inwc with standard purge-air unit; max. 40 hPa / +16 inwc with stronger fan ²⁾		
Device Data	Transceiver Unit	Reflector Unit	Connection Unit
Class of protection	IP 65 / NEMA 4X		
Power supply	90...260 V AC, 48...62 Hz; 200 W power consumption (connection unit)		
Dimensions (W x H x D)	205 x 270 x 375,5 mm ³ 8 x 10.3 x 14.7 in ³	205 x 270 x 250,5 mm ³ 8 x 10.3 x 10 in ³	196 x 203 162,5 mm ³ 7.7 x 8 x 6.4 in ³
Weight	12 kg / 26 lb	8 kg / 17 lb	4 kg / 8 lb
Purge air unit	Refer to data sheet, order nor. 8 008 088		
Compliance	CE, TÜV (German Technical Inspection), Clean Air Act (13 th Impl. Ord.), GOST, U.S. EPA incl. PS1		
Interfaces and Signals			
Interface	RS 232 service interface; RS 422 for optional RCU-MS remote control unit		
Signals			
• 2 analog outputs	0/2/4...20 mA; 750 W max. load, electrically isolated		
• 4 Relay outputs	48 V DC, 1 A, 30 W max.; 48 V AC, 1 A; Cycle/maintenance, limit value 1 and 2, malfunction		