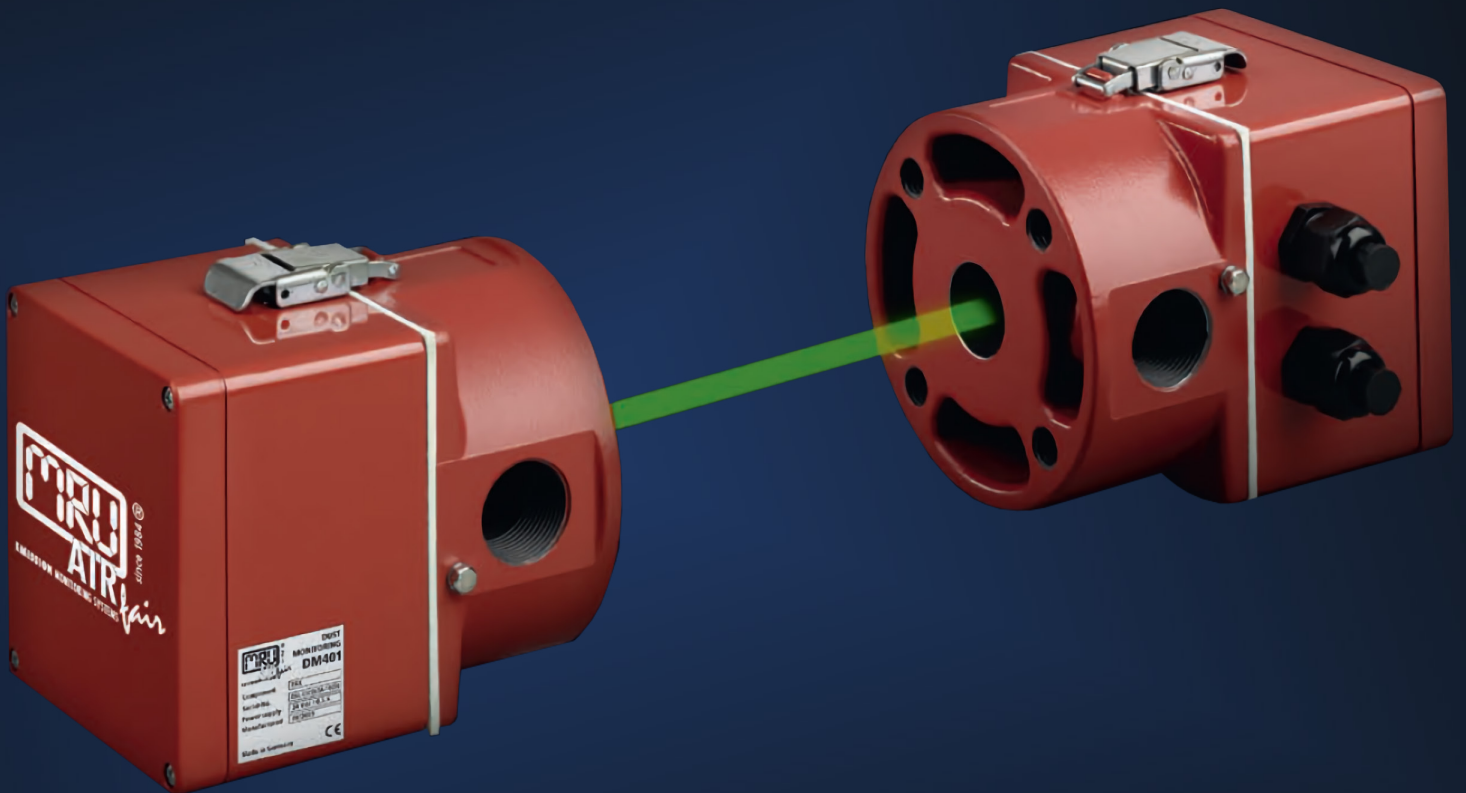




# DM 401

DUST OPACITY  
MONITORING SYSTEM

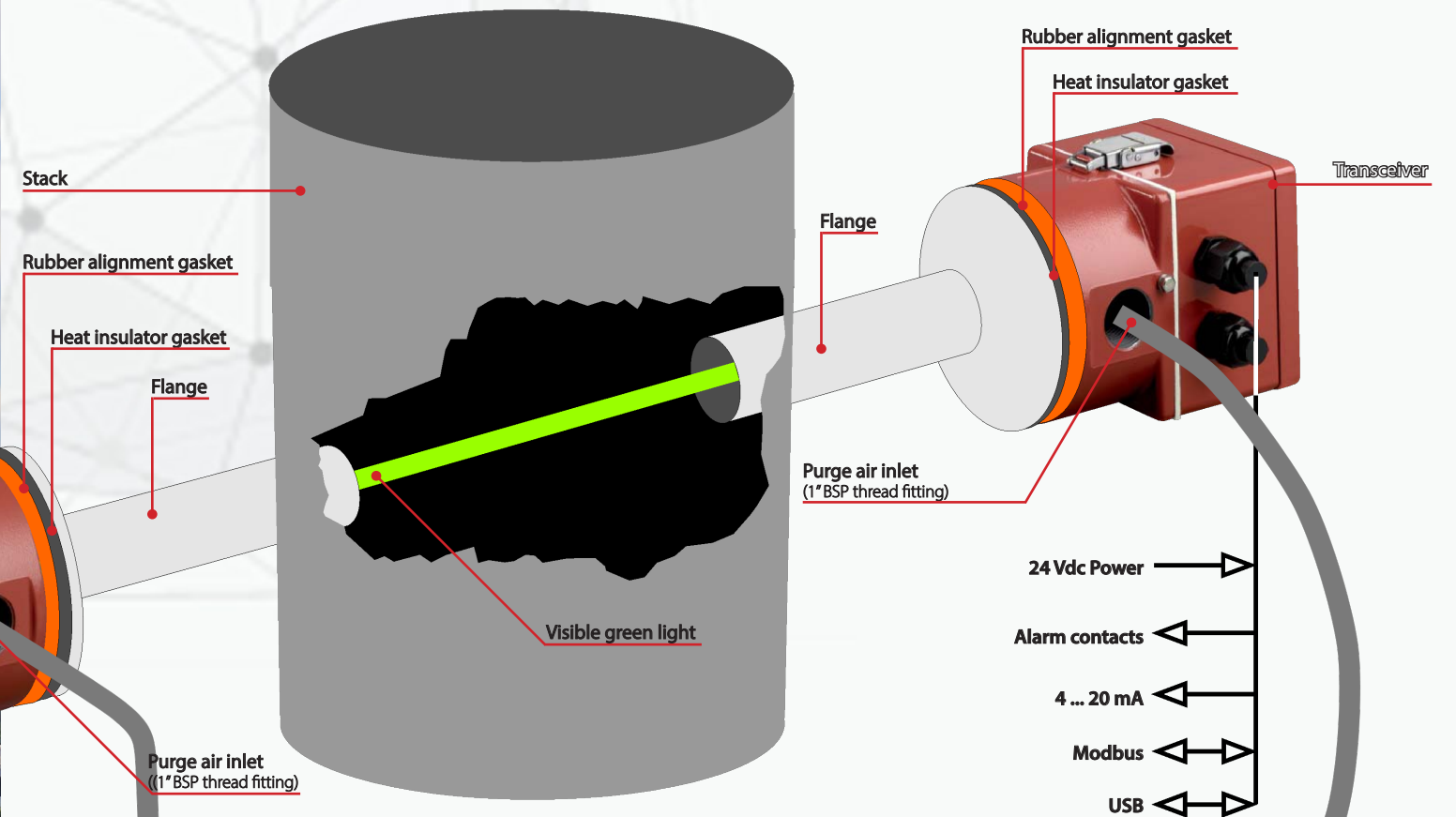
**Double pass transmission method  
for continuous particulates and opacity  
monitoring**



# DM 401

## Dust Monitoring System Double pass transmission Measurement

Measures 0 ... 100 % opacity or 10 ... 1.000 mg/m<sup>3</sup> dust (\*)  
(\*) after on-site calibration according to VDI 2066



### Features

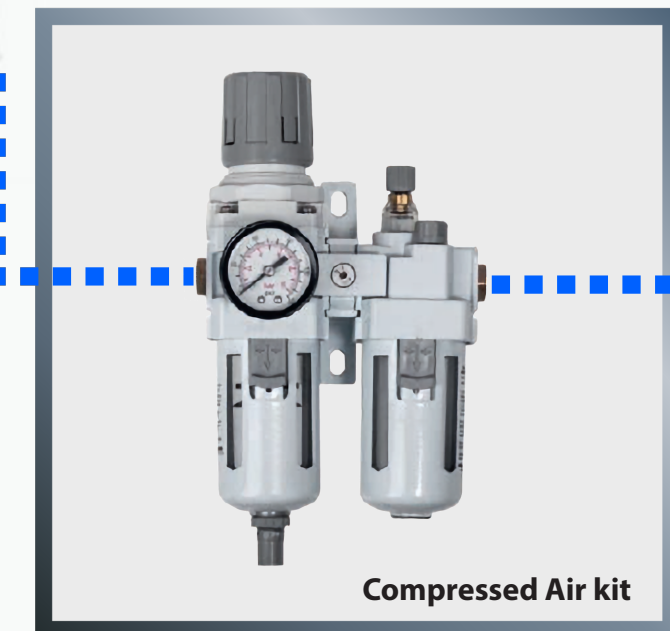
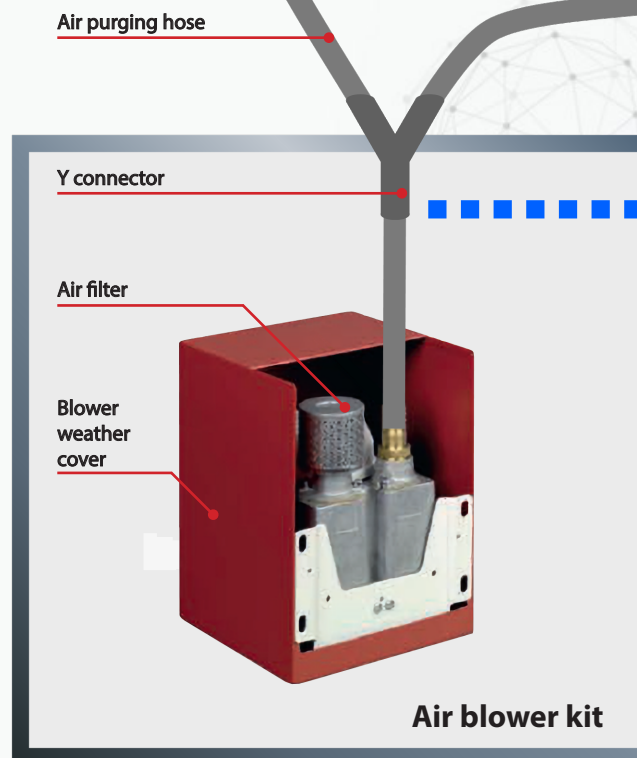
- In situ measurement directly in exhaust gas flow
- Measurement reading as particulate as mg/m<sup>3</sup>
- Modulated green LED source for long lifetime stability and immunity to ambient light
- Rugged 316 stainless steel construction
- In-situ zero and calibration check facility
- Choice of interface options enabling easy integration
- Free utility software for PC based set-up, control and data logging
- Optional Operator Interface with different mounting configurations

### Benefits

- Simpler installation than single pass opacity monitors
- Better accuracy over shorter path lengths than single pass opacity monitors
- Rugged design with no moving parts so low maintenance
- Latched head and lid design to enable ease of access for installation and maintenance

### Applications

- Industrial combustion processes such as boilers and furnaces
- Air filtration processes such as filter bag houses, electrostatic precipitators or cyclones
- Industrial process control applications
- Other non-compliant processes



Both the transceiver and reflector are supplied with an air purging (blower unit) or compressed air kit. This will prevent dust particle deposition on the optical lenses by continuous purge with clean ambient air and extend substantially the maintenance free operation.

# DM 401

## Technical Details

Parameter	Units	Min	Max	Comment
Path. length (flange to flange)	meters	0.5	10	flange-to-flange distance
<b>Measuring range</b>				
Particulate	mg/m <sup>3</sup>	10.0	1000	after on site calibration
Opacity	%	0.0	100.0	user selectable
Accuracy	%	-2	+2	
Resolution	mg/m <sup>3</sup>		0.1	display resolution
Damping	s	1	60	selectable
Drift with temperature	%	-2	+2	for any 20 °C change
Operating wave length	nm	510	540	green LED

<b>Power and air requirements</b>				
Voltage	Vdc		+24	90 ... 240 Vac PSU available
Air supply volume	l /min	50	200	to each air purge inlet
Air supply fitting				1" BSP threaded aperture

<b>Interface options</b>				
RS 485				ModBus RTU
Analog outputs	mA	4.0	20.0	isolated and scalable
Relay contact	3 A @ 30 Vdc			level alarm and service alarm

<b>Physical</b>				
Protection class			IP 65	for outdoor use
Operating temperature	°C	-20	+55	air temperature around the equipment
Gas temperature	°C	100	600	heat insulated gaskets included

<b>Dimensions</b>				
Transceiver	6.02" x 4.8" x 4.72"			153 x 122 x 120 mm
Reflector	6.02" x 4.8" x 4.72"			153 x 122 x 120 mm
Purging air blower unit	12.2" x 8.66" x 9.05"			310 x 220 x 230 mm
Enclosure				stainless steel, powder coated
Weight	transceiver: 5.5 lbs., reflector: 5.5 lbs. purging air blower unit: 24 lbs.			transceiver: 2.5 kg, reflector: 2.5 kg purging air blower unit: 11 kg

Data to change without notice



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