

# RM210

## Scattered Light Technology

### Intelligent Solution for a Cleaner Air



#### Versatile measuring device

Based on the scattered light measuring principle, the RM210 detects dust concentrations within a range of <math>< 0.5</math> to 200 mg/m<sup>3</sup>. Suitable device versions with different measuring penetration depths are available for outputting of representative measurement results:

- Version 1 for small gas ducts with  $\varnothing$  0.2 ... 1.5 m
- Version 2 for ducts and small stacks with  $\varnothing$  1.5 ... 3.5 m
- Version 3 for stacks with  $\varnothing$  >3.5 m

The highly flexible RM210, with its robust design is ideal for application in harsh industrial environments. Equipped with freely adjustable measurement ranges the RM210 is able to perform versatile measuring functions. It complies with 13<sup>th</sup> and 17<sup>th</sup> BImSchV, with the Clean Air Act and the new Waste Incineration Directive EN-14181.

#### Measurement principle

The insitu technology of the RM210, i.e direct measurement in the gas duct, guarantees instantaneous measured values. The measured quantity of the RM210 is scattered light. The light source transmits infrared light which is scattered by the particles in the gas stream and detected by a highly sensitive sensor. This measurement principle enables precise dust concentration measurements from the scattered light intensity measurement (calculated on the basis of gravimetric calibration).

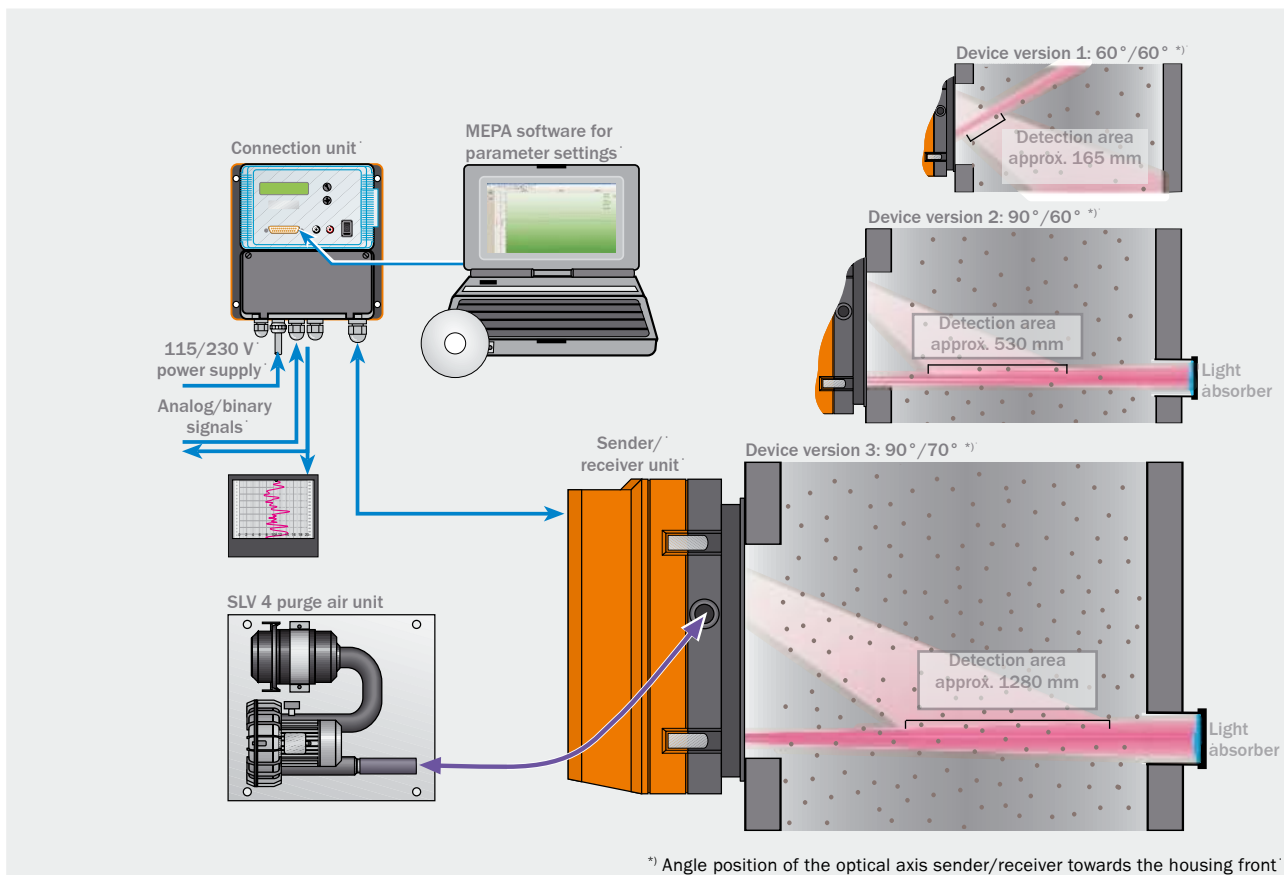
#### Applications

- In clean gas upstream of electrostatic precipitators or fabric filters
- Monitoring of exhaust and fresh air systems
- Protection of gas turbines

#### Key features of RM210

- Representative recording of dust loads in ducts with large diameters and/or with thick walls
- Additional recognition of defective filter pockets alongside dust measurement
- Cyclic monitoring of device functions via zero-point and reference-point comparison
- No disturbance caused by contamination due to automatic contamination measurement of all optical components and a measurement value correction
- Easy to perform linearity measurements (4 measurement points)
- Data transmission (RS232) by modem for diagnostics, parameter setting and recording of measured value.

## RM210 Device Overview



Technical Data RM210			
<b>Measuring data</b>			
Measuring principle	Scattered light principle (scattered light intensity proportional to dust concentration)		
Measuring range	0 ... 0.5 mg/m <sup>3</sup>		
• Smallest range	0 ... 0.5 mg/m <sup>3</sup>		
• Largest range	0 ... 200 mg/m <sup>3</sup>		
Accuracy	± 2% of full scale value		
Response time	1 ... 255 s		
<b>Plant data</b>			
Measuring gas temperature	Above dew point up to 500 °C (932 °F), higher temperatures on request		
Ambient temperature	-20 ... +55 °C (-4 ... 130 °F)		
Measuring gas pressure	Max. +60 hPa (24 in WC)		
Device data	Sender/receiver unit	Connection unit	
Purge air supply	Refer to SLV4 data sheet; order no. 8008080		
Power supply	90 ... 260 V AC; 47 ... 63 Hz; 20 VA power consumption		
Storage temperature	-20 ... +65 °C (-4 ... +150 °F); storage humidity 50 % r.h.		
<b>Dimensions</b>			
L x W x D in mm <sup>3</sup> (in <sup>3</sup> )	210 x 495 x 276 (8 x 19.5 x 11)	196 x 203 x 162,5 (7.7 x 8 x 6.4)	
Weight	approx. 12 kg (26.5 lb)	approx. 3.5 kg (7.7 lb)	Flange: approx. 4.5 kg (10 lb)
Protection class	IP 65/NEMA 4x		
<b>Interfaces and signals</b>			
Interfaces to periphery	RS232 service interface RS422 interface to remote control unit (option) or host computer		
Signals	2 analog outputs: 0 ... 20 mA, 100 Ω (electrically isolated) 4 status inputs: 10 ... 35 V DC/10 ... 25 V AC; selectable 4 relay outputs: 48 V DC/1 A; selectable		