

# RM210-S

## Reliable Monitoring of Soot Numbers



### Keeping soot output in check

The RM210-S measuring device is used for precise monitoring of soot number. The soot number measurement meets the requirements of Federal Clean Air Regulations (TA Luft) and the regulation stipulated by the 13th Federal Emission Protection Regulation (13. BImSchV) concerning incineration and gas turbine plants. The soot number (SN) is defined by the degree of optical density on a filter paper with grayscales. The measuring device, flanged directly to the exhaust duct, is continuously monitoring the clouding of flue gas. It signals faulty operations in time, warranting reliable observance of limit values like SN=1.

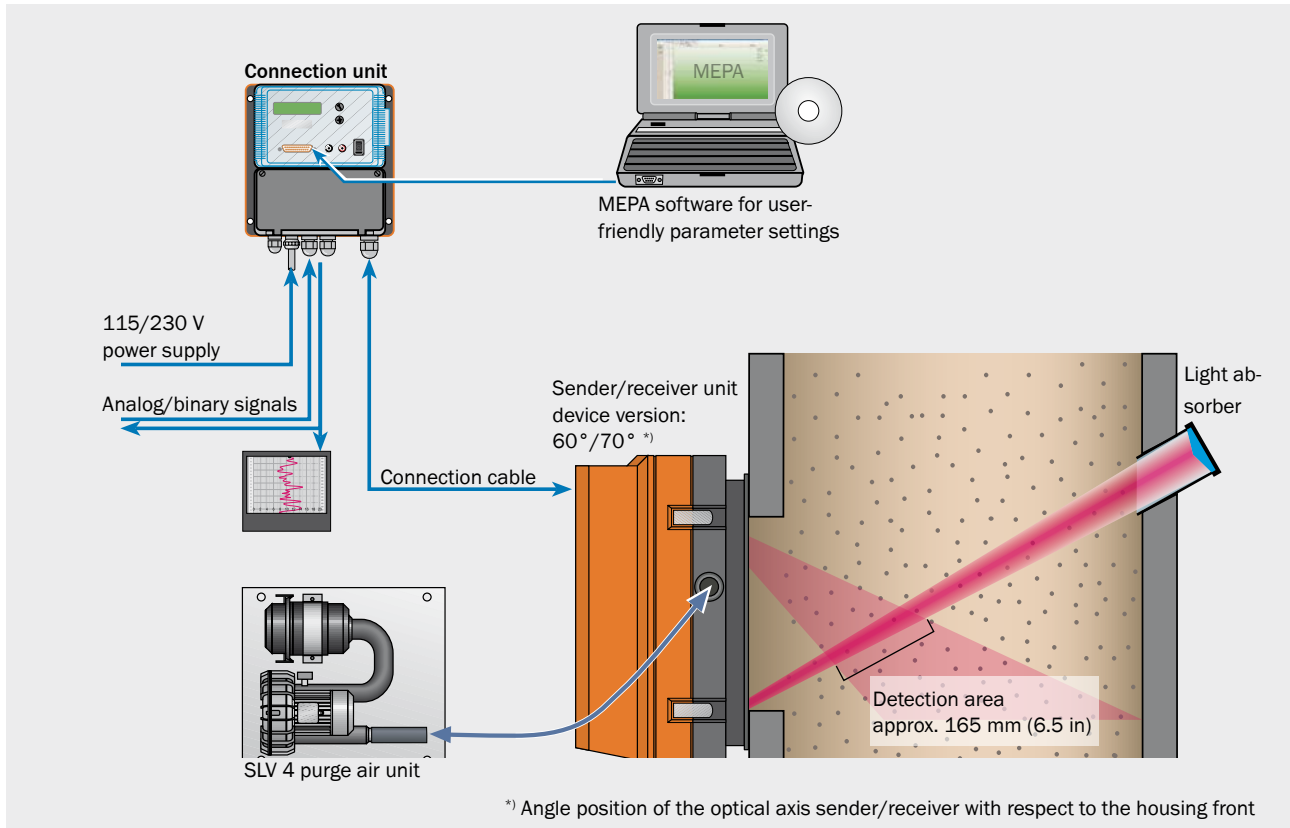
### The principle of scattered light measurement

The insitu technology of the RM210-S, a direct measurement in the gas duct, provides instantly measured values. The RM210-S operates according to the scattered light principle. A beam of infra-red light, sent off from an opto-transmitter, is scattered by particles inside the gas stream and recorded with a highly sensitive sensor. The soot number is determined by the measured scattered light intensity, simultaneously correcting the zero point. The calibration of RM210-S inside special plant conditions are to be carried out on site. The RM210-S is also available as version RM210/RM230 for the measurement of dust concentration in  $\text{mg}/\text{m}^3$ .

### Key Features

- Precise insitu scattered light measuring device for continuous soot number monitoring in compliance with Federal Clean Air Regulations (TA Luft) and 13th Federal Emission Protection Regulation (13. BImSchV)
- Cyclic monitoring of device function due to zero point measurement and reference point comparison.
- Automatic contamination measurement of all optical components and measurement value correction
- Easy to perform linearity measurements
- Specific customization of device parameters for individual plant conditions with the help of user friendly MEPA-Software

## RM210-S Device Overview



Technical Data RM210-S			
<b>Measuring data</b>			
Measuring principle	Scattered light principle (scattered light intensity proportional to soot number)		
Measuring ranges	Soot number: 0 ... 3 SN; free choice of other settings		
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)		
<b>Device data</b>		<b>Sender/receiver unit</b>	<b>Connection unit</b>
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.		
Dimensions	L x W x D in mm (in)		
	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		