



Applications

- Monitoring of warehouses with exhaust gas pollution
- Workplace and production bay monitoring
- Monitoring of filter installations
- Ventilation control
- Oil mist detection on ocean tankers
- Monitoring of immissions

Features

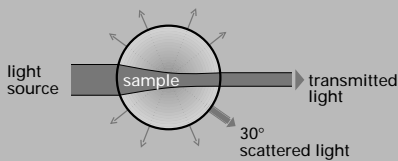
- Sampling either in-situ or extractive
- Operation locally or centrally with multichannel control
- Highly stable readings thanks to purge air
- Low maintenance: annual check against standard

DUST CONCENTRATION MONITOR **VISGUARD**

DUST CONCENTRATION MONITOR

VISGUARD

Dust concentration detection



When a light beam is passed through air or gas containing dust or soot particles or finely dispersed droplets of liquid (e.g. aerosol, mist), the particles or droplets scatter the light. Measurement of the scattered light intensity therefore provides an indication of the concentration of the dust particles or aerosol in the sample.

Dust concentration detection is used wherever it is necessary to monitor dust or exhaust gas limits or to control ventilation systems.

Measuring method

The VisGuard measures the scattered light intensity of a sample drawn into the instrument using a dual-beam measuring method. It determines the relation between the light scattered at a 30° angle and the directly transmitted light. This system elegantly eliminates the effects of any light source fluctuations as well as ageing or temperature effects of the electronics.

Sample extraction

The air is extracted by a blower and carried through the flow cell. This configuration permits extremely simple installation without time-consuming adjustment, reliable checking and correction of the zero and reference points without ambient air effects, and the ability to carry out measurement either on the spot or remotely with extraction lengths up to 500 m. In the in-situ version the blower is integrated in the sensor. For the extractive arrangement, separate fans are used because more power is required. An optional heater at the sample inlet effectively eliminates any troublesome mist effects.

The blower also feeds filtered purge air to the flow cell, thus enveloping the sample in a protective shroud of clean purge air. This effectively keeps the optics clean and minimizes drift caused by fouling.

Multiple sampling

Extractive sampling also opens up the possibility of carrying extraction pipes from up to 8 sampling points via a valve unit to a single sensor. With the multichannel control unit SIBUS, the continuous sample flows from the different extraction points are fed cyclically to the VisGuard. In this case the maximum extraction length is 200 m.

Calibration

Calibration of the SIGRIST VisGuard is carried out at the factory based on PLA (polystyrene-latex aerosol) as the defined medium. If necessary, an application-specific calibration can be carried out in mg/m^3 . For the annual calibration check, a checking rod is available that permits correction of the instrument in a matter of seconds. If required, the zero point can be checked at the same time by attaching a zero-air filter.

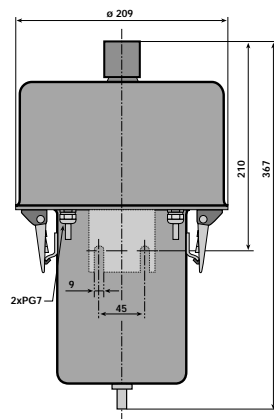
Single control unit SIREL

With its two-line LC display and operating structure with plain-text guidance, SIREL provides extremely easy access to the VisGuard for operation, configuration and servicing. It has a 0/4 .. 20 mA current output and two independent relay contacts that can serve as either limit or alarm contacts. An optional BUS coupler is available for connection to PROFIBUS DP. It makes possible direct data transmission and ventilation control via the digital interface.

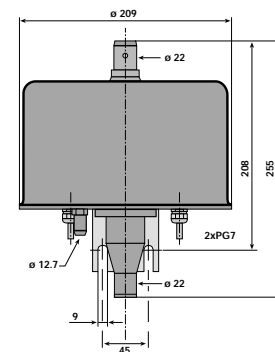
Installation/Mounting

In-situ mounting is a matter of fastening the VisGuard to the wall with two screws. The instrument axis should be set as near to vertical as possible. If the sample is withdrawn extractively, the instrument can be installed on a wall or in a suitable cabinet. For installations employing multiple sampling, installation in a cabinet is recommended.

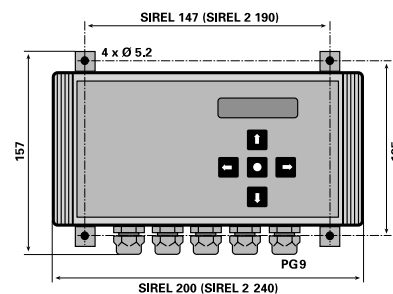
Dimensions



VisGuard In-situ

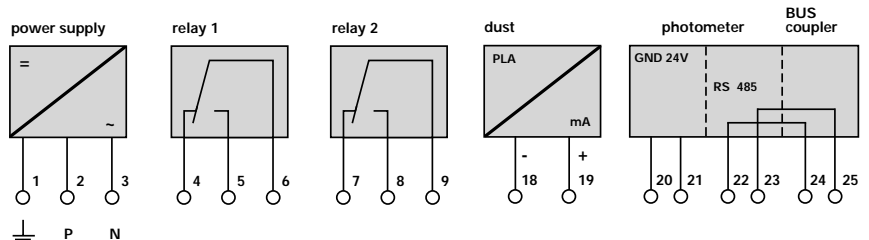


VisGuard Extractive



Control Unit SIREL

Wiring diagram SIREL



SPECIFICATIONS

Dust concentration measurement

Measuring principle: 30° scattered light measurement
Measuring span: 0 .. 100 PLA
Measuring ranges: 0 .. 0,1 / 0 .. 0,3 / 0 .. 1 / 0 .. 3 / 0 .. 10 / 0 .. 30 / 0 .. 100 PLA
Resolution: < ± 0,25 % of full scale value
Meas. wavelength: 880 nm

Photometer VisGuard

Enclosure material: stainless steel 1.4435 (316 L)
Sample temperature: -20 °C .. +50 °C
Flowrate: 5 l/min (In-situ) / 25 .. 30 l/min (Extractive)
Ambient temperature: -20 °C .. +50 °C
Ambient pressure: ±3000 Pa (±30 mbar)
Protection type: IP 65
Weight: 6.5 kg (In-situ) / 5.0 kg (Extractive)
Depth from wall: 235 mm
Heater (optional): 230 V AC; 25 W

Control Unit SIREL

Power supply: 85 .. 264 V / 47 .. 440 Hz or 24 V DC
Power input: 20 W
Current output: 0/4 .. 20 mA; burden max. 600 Ω
Contacts: 2 separately configurable relay contacts 250 V AC; 4 A
Protection type: IP 65
Weight: 1.5 kg
Connection to VisGuard: 4-core cable, up to 100 m

Sampling system 0 .. 30 m

Blower type: SE12
Power supply: 115 or 230 V / 50 or 60 Hz
Power input: 90 W
Ambient temperature: -20 °C .. +40 °C
Degree of protection: IP 54
Weight: 7 kg
Heater (optional): 230 V AC; 40 W

Sampling system 30 .. 500 m and multiple sampling

Blower type: SE4n/SD4n
Power supply: 230/400/440 V / 50 or 60 Hz
Power input: 950 W
Ambient temperature: -20 °C .. +40 °C
Degree of protection: IP 54
Weight: 22 kg
Heater (optional): 230 V AC; 40 W

Represented by:

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