D-R 320

Dust Monitor for smallest to medium concentrations

- Easy installation on standard flanges
- Easy setup without adjustment
- Automatic background light compensation, no light trap
- Integrated purge air monitoring and control
- Integrated fail safe shutter as an option

Certified acc. to EN 15267-3, Certification range 0–7.5 mg/m³
The new scattered light dust monitor D-R 320

High-sensitivity measurement even at the lowest concentrations of dust

The new DURAG dust monitor D-R 320 is based on the backscattering principle and is ideally suited for monitoring smallest to medium dust concentrations. The measurement takes place continuously in the flue gas streams. Naturally the D-R 320 is compliant with the high requirements of the new European standards and therefore suitable for measurements according to official regulations.

Startup without adjustment due to unique optical design

The D-R 320 does not require a light trap. The background light in the stack is detected by means of a special optical system with dual detector and automatically compensated without the need of any manual adjustment. Advantage of this new design is the quick and uncomplicated installation, completely without adjustment at site. So the D-R 320 is ready for operation directly after installation and flexible for different applications. Even after a conversion to a different measurement point the device is operational immediately again.

Stray light measurement redefined

The light of a red laser diode (eye safe) illuminates the dust particles in the measuring volume of the flue gas dust. The light is scattered by the particles and also generates background light in the stack. Scattered light plus background light are received in one half of the integrated dual detector.

At the same time the other half of the detector receives only the background light from the same area of the stack, without the stray light portion.

After subtraction of the background light the pure amount of scattered light is available. Since both parts of the integrated double detector share the same optical unit, no adjustment of the beam paths is necessary. The D-R 320 is ready for operation directly after mounting and can easily be operated at another measurement point.

Single-sided installation on standard flanges without light trap

The D-R 320 allows single sided installation at the stack and requires just a small wall opening. It can be mounted in any orientation via a rotatable connection on existing DN 100 PN 6 or ANSI 4" 150 lbs standard flanges. This reduces time and costs for installation.

Long life due to integrated purge air monitoring and control

The D-R 320 is continuously purged and therefore the optical system is not in contact with the exhaust gas. The integrated purge air control ensures the optimum amount of purge air. This ensures a long life and long maintenance intervals. A purge air failure is immediately indicated by the device. The maintenance of the device is minimal.

Convenient operation, readings anywhere accessible

The operation of the D-R 320 is comfortable and extremely flexible. Different operating options are available:

- local via USB interface
- by means of the external operation unit D-ISC 100
- remote access with RS-485 interface via MODBUS RTU / MODBUS TCP protocol (acc. to VDI 4201-3)

Automatic control functions ensure reliable measuring values

Reliability has the highest priority when measuring emissions. For that reason the D-R 320 automatically performs zero and span check as well as contamination check in regular intervals and on demand. The device features an automatic contamination correction. Need for maintenance is immediately indicated by the electronics.

With the integrated fail safe shutter the D-R 320 is optimally protected for reliable use even under overpressure conditions.

Universal Operation Unit D-ISC 100

The universal operation unit D-ISC 100 allows for the connection of up to 8 DURAG measuring heads and enables the combination of dust and flow measurements. The D-ISC 100 offers convenient operation and parameterization of the connected devices. The display provides an immediate overview of the current measurements and the status of the devices.

- Connection of up to 8 measuring heads
- Local operation with keypad, through USB port or remotely through RS-485 interface
- Modular design, many extension modules available

Features

- Continuous measurement of dust concentration
- Easy installation on standard flanges
- Easy startup without adjustments
- Automatic background light compensation, no light trap
- Convenient operation, remote access possible
- Automatic control functions
- Integrated purge air monitoring and control
- Long service intervals
- Certified acc. to EN 15267
- Integrated fail safe shutter as an option
- Data transfer via Modbus compliant with VDI 4201-3

Applications

Continuous emission monitoring, e.g.:
- on incineration plants generally
- on plants according to EED 2010/75/EC
- on plants according to 2001/80/EC LCPD on waste, hazardous waste and sewage sludge incineration plants
- on cement manufacturing plants
- on power plants with gas, oil, coal or serving
- on plants for the incineration of biomass

Monitoring of:

- ventilation units
- filter units
- ventilation systems
- dust collection systems

Technical Data

<table>
<thead>
<tr>
<th>Measure head</th>
<th>Measurements</th>
<th>Dust concentration</th>
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<tbody>
<tr>
<td></td>
<td>max. 0–5 mg/m³,</td>
<td>max. 0–200 mg/m³</td>
</tr>
<tr>
<td></td>
<td>min. 0–200 mg/m³</td>
<td></td>
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<tr>
<td>Measuring principle</td>
<td>backscattering</td>
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</tr>
<tr>
<td>Duct diameter</td>
<td>µm &gt; 0.7 m</td>
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<tr>
<td>Ambient temperature</td>
<td>-40 up to +60 °C</td>
<td></td>
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<tr>
<td>Protection</td>
<td>IP 65, Ex optional</td>
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<tr>
<td>Measuring outputs</td>
<td>2 channels 0–20 mA / 50 Ohm, Modbus RTU bi-directional</td>
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</tr>
<tr>
<td>Digital outputs</td>
<td>2 relay outputs, permissible load 85 VDC / 30 VAC / 3 1 A</td>
<td></td>
</tr>
<tr>
<td>Supply voltage</td>
<td>24 VDC, 5 A</td>
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</tr>
<tr>
<td>Dimensions (h x w x d)</td>
<td>220 x 195 x 320/410 mm</td>
<td></td>
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<tr>
<td>Weight</td>
<td>15 kg</td>
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<tr>
<td>Supply unit</td>
<td>purge air supply integrated blower</td>
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<tr>
<td>Dimensions</td>
<td>115 x 230 VAC, 50 Hz, 0.15/0.43 kW</td>
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<tr>
<td>Weight</td>
<td>12 kg</td>
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<td>Protection</td>
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Technical data subject to change without notice. Errors and omissions reserved. Only valid in combination with the D-R 4000 system.