

DSL-460

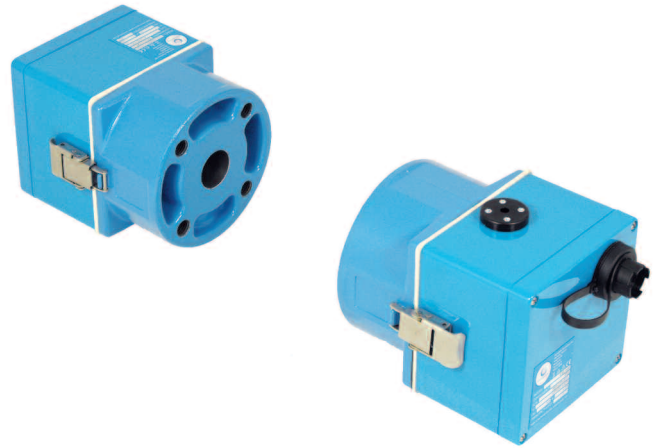
Double Pass Opacity Monitor for monitoring opacity and particulate emissions



DYNOPTIC

DSL-460

Double Pass Opacity Monitor for monitoring opacity and particulate emissions



FEATURES

- In-situ measurement directly in exhaust gas flow
- Measurement reading as % Opacity or particulate as mg/m³
- Integrated visual alignment aid to simplify installation
- In-situ zero and calibration check facility
- Choice of interface options enabling easy integration
- Free utility software for PC based setup, control and datalogging
- Optional Operator Interface with dual data display; % Opacity and mg/m³ and different mounting configurations

BENEFITS

- Plug and socket connection enabling simple installation
- Better accuracy over short path lengths
- Rugged design with no moving parts so low maintenance
- Latched head design to enable ease of access to optics for maintenance

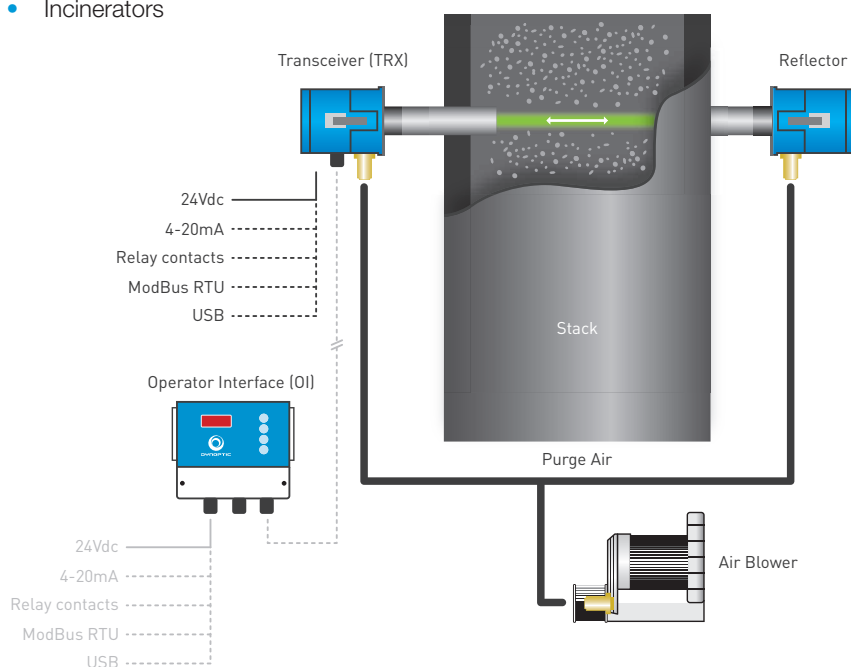
THE TECHNOLOGY

The DSL-460 Opacity Monitor uses a double pass light transmission technique to measure dust, smoke and particulate emissions present in an exhaust gas flow in a duct, stack or flue. A light beam emitted from the Transceiver (TRX) passes across the duct, stack or flue to a Reflector, which returns the light beam to the TRX. Any dust or smoke particles present will attenuate the light beam and cause the intensity of the light received by the TRX to fall. The amount of light lost in crossing the duct, stack or flue is the Opacity and this correlates to the amount of dust or smoke present in the gas flow.

The DSL-460 benefits from an integrated visual alignment aid, which makes installation easier. The Transceiver (TRX) contains a viewing port which allows the user to see an image of the light returned by the Reflector head against a reticle target. Positioning the image within the centre of the target is used to align the TRX head.

APPLICATIONS

- Process control for verification, optimisation and fault diagnosis (non compliant processes)
- Marine industry for monitoring smoke emissions from diesel engines, incinerators and boilers
- Post particulate removal systems such as filter bag houses, electrostatic precipitators or cyclones
- Boilers and combustion furnaces
- Crematoria
- Incinerators



OPTIONAL ACCESSORIES

- Optional operator interface (OI) with dual parameter display
- 90 – 260 Vac model available
- Mounting flange extension kit
- Air purge blower kit (110 Vac / 230 Vac / 415 Vac)
- Air hose for use with air purge blower
- Interconnecting cabling, as required between TRX and the OI
- Stainless steel weather covers

TECHNICAL SPECIFICATION

Parameter	Comment
Measuring Principle	Light Transmission
Operating Wavelength	510 – 540 nm (green LED)
Measurement Reading	Opacity (%) or Particulate (mg/m ³) (Optical Density also available)
Measuring Range Opacity Particulate Density	0 – 100 % 0 - 100 mg/m ³ (user selectable)
Path Length	0.5 – 10 m (flange-to-flange separation)
Accuracy	+/- 2 % (relative to the maximum range)
Resolution	0.1 % (display resolution) 0.1 mg/m ³ (display resolution)
Damping	1 – 60 s (user selectable)
Drift with Temperature	+/- 2 % (over the full operating temperature range)

POWER & AIR REQUIREMENTS

Voltage	+24 Vdc (optional 90-260 Vac PSU available)
Nominal Current Consumption	500 mA
Power Up Current Consumption	500 mA
Air Supply Volume	18 – 50 m ³ /h (split between TRX & Reflector air purge bodies)
Air Supply Pressure	40 – 100 mbar (in addition to any positive stack pressure)

INTERFACE OPTIONS

Serial Comms	1. ModBus RTU (on terminals in OI or TRX) 2. Internal USB (OI), external USB (TRX) 3. ProfiBus, DeviceNet, Ethernet etc. on request
Analogue Outputs	0 /2 /4 - 20.0 mA (isolated and scalable)
Relay Contacts	3 @ 30 Vdc (level alarm and service alarm)

PHYSICAL

Ambient Operating Temperature	-20 - +50 °C (air temperature around the equipment)
Exhaust Gas Temperature	Up to +600 °C (heat insulating gaskets included)
Operating Humidity	5 – 100%
Ingress Protection Heads	IP65 for external use
Materials TRX/Reflector Head	Anodised and powder coated cast aluminium air-purge bodies, with polycarbonate measurement head and stainless steel latches
Dimension TRX/Reflector Head	153 x 120 x 122 mm (measuring head)
Weight TRX/Reflector Head	1.9 kg per head (including air purge body)
Regulatory Compliance	89/336/EEC (Electromagnetic Radiation) 73/23/EEC (Low Voltage)

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