DSL-320 MkIII

Double Pass Opacity Monitor for monitoring opacity and smoke emissions

DYNOPTIC

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FEATURES

- In situ measurement directly in exhaust gas flow
- Measurement reading as % Opacity
- Modulated green LED source for long lifetime stability and immunity to ambient light
- Rugged 316 stainless steel construction
- In-situ zero and calibration check facility
- Choice of interface options enabling easy integration
- Free utility software for PC based set-up, control and data logging
- Optional Operator Interface with different mounting configurations

BENEFITS

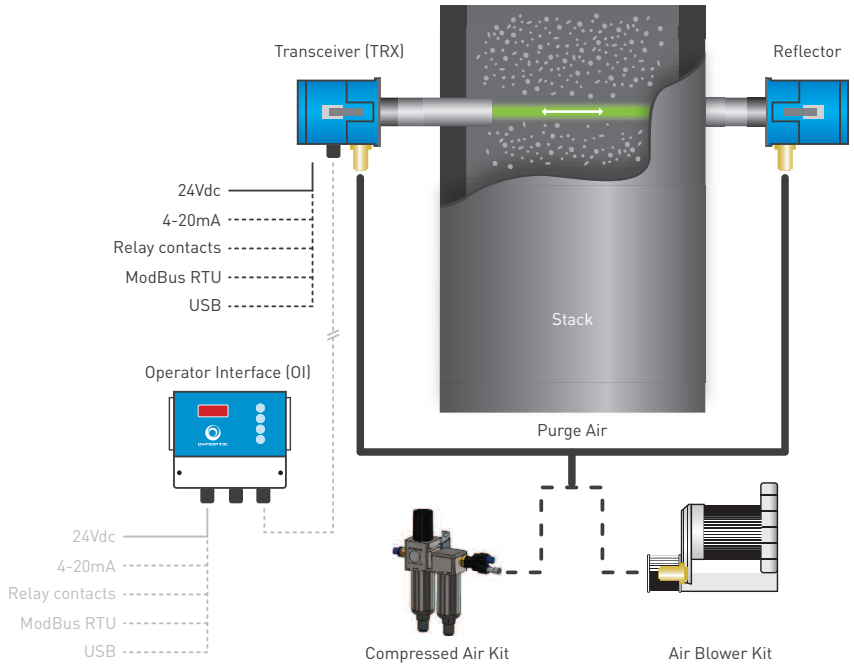
- Simpler installation than single pass opacity monitors
- Better accuracy over shorter path lengths than single pass opacity monitors
- Rugged design with no moving parts so low maintenance
- Latched head and lid design to enable ease of access for installation and maintenance

THE TECHNOLOGY

The DSL-320 Opacity Monitor is an optical instrument designed to measure the visible opacity of exhaust gas in a duct, stack or flue. The DSL-320 uses the double pass light transmission measurement technique, with a folded beam Transceiver/Reflector arrangement. A light beam emitted from the Transceiver (TRX) passes across the duct, stack or flue to a Reflector, which then returns the light to the Transceiver where the intensity of the received light is measured. Increased particulate or smoke density in the stack gas attenuates the transmitted light and causes the intensity of the received light to fall. This reduction in intensity is measured and presented as % opacity. The higher the level of particulate or smoke present, the more light lost and therefore, the greater the opacity.

APPLICATIONS

- Industrial combustion processes such as boilers and furnaces
- Air filtration processes such as filter bag houses, electrostatic precipitators or cyclones
- Industrial process control applications
- Other non-compliant processes



OPTIONAL ACCESSORIES

- Operator interface (OI)
- 90 – 260 Vac model available
- Mounting flange installation kit
- Laser alignment tool to assist with installation
- Air purge blower kit (110 Vac / 230 Vac / 415 Vac)
- Compressed air purge kit
- Fail safe shutter kit
- Reference filters for routine calibration check of the instrument

TECHNICAL SPECIFICATION

Parameter	Comment
Measuring Principle	Light Transmission
Operating Wavelength	510 – 540 nm (green LED)
Measurement Reading	Opacity (%)
Measuring Range	0 – 100 % Opacity (user configurable)
Path Length (duct diameter)	0.5 – 10 m (flange-to-flange separation)
Accuracy	+ / - 2 %
Resolution	0.1 % (display resolution)
Damping	1 – 60 s (user selectable)
Drift with Temperature	+ / - 2 % (over 20 °C)

POWER & AIR REQUIREMENTS

Voltage	+24 Vdc (optional 90-260 Vac PSU available)
Nominal Current Consumption	400 mA
Power Up Current Consumption	400 mA
Purge Air Supply Volume	50 – 200 L/min (to each air purge body)
Purge Air Quality	Suitably filtered, oil free and dry

INTERFACE OPTIONS

Serial Comms	ModBus RTU via RS485 Internal USB (OI) External USB (TRX)
Analogue Outputs	4.0 – 20 mA (isolated and scalable)
Relay Contacts	3 A @ 30 Vdc (signal level and service alarms)

PHYSICAL

Ambient Operating Temperature	-20 – +55 °C (air temperature around the equipment)
Exhaust Gas Temperature	Up to +600 °C (heat insulating gaskets included)
Ambient Operating Humidity	0 – 100%
Ingress Protection	IP65 for external use
Materials	316 Stainless Steel (powder coated)
Dimensions	153 x 120 x 122 mm (measuring head)
Weight	2.5 kg per head

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