

# Model DT109 Opacity Monitor

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**The Model DT109 is the perfect solution for monitoring visible emissions where a compliance system is not required. Has many applications other than stacks such as dust from conveyor systems.**

The Model DT109 allows for continuous monitoring of emission levels - which helps you stay below EPA limits at all times. When bags become worn or ripped, there is an immediate alarm and indication in the recorder reading.

The Model DT109 is perfect for applications where multiple ducts lead to a common stack. Since the Model DT109 measures opacity, this instrument will alert your operators to a possible over emission problem-or even a boiler upset that could cause a violation of your emissions standards.

#### **Features:**

- Measures opacity as well as mass emissions
- Process monitoring with instant and average 4-20 mA outputs
- Modbus RTU Interface
- RS232/422/485 serial port available

#### **Model DT109D (Transceiver and Retro-reflector)**

- Double pass
- Spans up to 10 feet
- High accuracy

#### **Model DT109S (Separate Transmitter and Receiver)**

- Single pass
- Spans up to 40 feet
- High accuracy



#### **Easy to install, easy to use**

The DT109 system is easily installed using the provided duct mounting hardware. Standard signal cable is used to connect the transmitter/ receiver to the panel mount control unit.

A front panel mounted backlit LCD display shows all critical information as well as over emissions, blower failure, and lamp out conditions.

Adjustment of zero, using the keypad during a clear stack condition, is all the maintenance normally required.

#### **High reliability, pinpoint accuracy**

The DT109 system uses a single light source taking the intensity of the light beam passing through the duct and comparing it to the light output from the lamp to make its measurement. This cancels out any variations due to line voltage changes and tungsten loss in the lamp assuring you steady, reliable performance year after year.

#### **Low level Measurements**

The Model DT109 measures sudden changes of emission with a high degree of sensitivity and accuracy.

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**Datatest** emission monitoring instruments

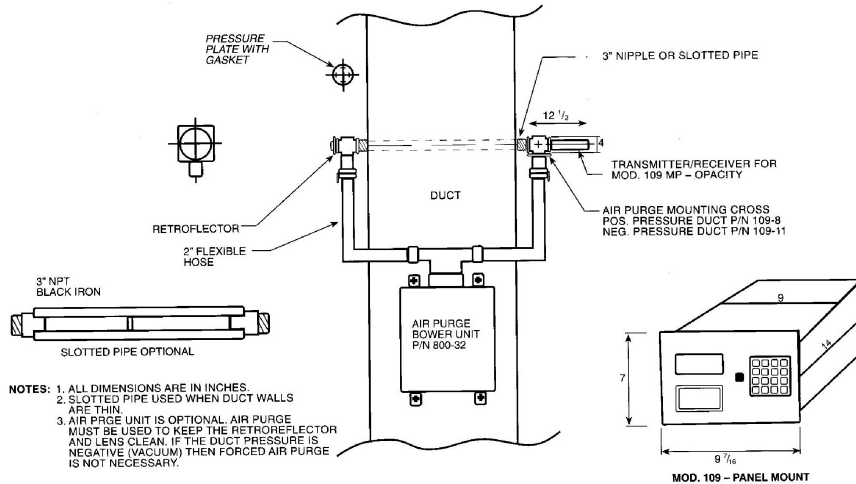
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# Datatest

## Model DT109 Opacity Monitor

### TYPICAL MODEL DT109 INSTALLATION



### Specifications

#### Measurement System

Angle of view and projection:	4° maximum (full angle)
Light Source:	Tungsten lamp, average life 3 years
Operating Principle:	Cross stack, dual or single beam. DT109D double pass, DT109S single pass
Path length:	Spans 109D up to 10 ft., 109S up to 40 ft.
Response Time:	Less than 10 seconds
Spectral response:	400 to 700 nanometers at the 10% points
Power Supply:	105-130V AC. 50/60 Hz 230 VAC 50/60 hz optional

#### Purge Air Blower System (800-31/32)

Outlets:	Single/Dual
Voltage / Current:	115/230V AC. 50/60 Hz. / 3.4/5 Amps.
Volume:	47/63CFM
Weight:	75/80 lbs.

#### Environmental

Electronics Operating Temp:	-50 °F to 150 °F (Process up to 1500 °F).
Enclosure:	NEMA 4.
Max Flange / Stack Temp:	600 °F- Flange mounted on thermal insulators / Up to 1500°F.
Relative Humidity:	95%, noncondensing

#### Control Unit

Ambient Operating Temp:	20 °F to 125 °F
Analog Outputs:	4-20 MA, Modbus RTU serial RS232, 485, or 422.
Audible Alarm:	Piezo electric buzzer.
Dimensions:	Panel mount 9 1/2" x 7" x 14" NEMA 4 wall mount 10" x 12" x 6"
Display:	80 Character backlit LCD with adjustable contrast control.
Enclosure:	Panel mount (NEMA 4 available)
Electronics:	Microprocessor based with analog I/O, digital I/O and serial capabilities.
Inputs:	remote trigger for calibration cycle.
Keypad:	7 pre-configured keys for data input.
Mounting:	Surface mount.
Power Supply:	115V +/- 10%, 25W (230V optional)
Relay Outputs:	Dry contacts for Cal Mode, Pre-emission, Over-emission, Fault, more...
Relay Rating:	1 A at 24 VDC, 1 A at 125 VAC.
Status Indicators:	Lamp out, blower out, pre-emission alarm, and analog signals
Transmitter to sensor distance:	200 ft. Max. Consult factory for greater distances

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