



ADVANCED INCIDENT WARNING & LOGGING

Triboguard II (Model 4002) Dust Monitors continuously monitor the exhaust ducts of dust collectors in order to detect filter failures. Triboguard II Monitors sense dust levels in collector exhaust air and provide continuous analog (4-20 mA) outputs. When used with the Triboguard II, the Pre-Vent™ Two-Level Alarm System provides both early warning and high level (reportable incident) alarms. Triboguard II Monitors are also used in conjunction with the Tribotrac™ Leak Locator System which allows operators to automatically pinpoint dust collector leaks by row or compartment from a remote location.

Triboguard II Detectors use the original triboelectric technology, introduced by Auburn International nearly twenty-five years ago. Triboguard II measures triboelectricity (also referred to as frictional electrification), an electric charge transfer which results when dust particles collide with the sensor probe. Triboguard II detects changes in the dust level of collector exhaust air and warns when a filter is failing before emissions become visible. The continuous analog output allows the use of dataloggers or other devices to record emissions levels, pinpoint maintenance problems, or document Clean Air compliance. Unlike optical devices that rely on clean, aligned lenses and indirect measurement of light transmission, Triboguard II is a virtually maintenance-free, direct method of bag leak detection. Thus, failures are detected promptly and reliably.

Triboguard II Monitors are available in an integral sensor configuration with a NEMA 4 enclosure or in a remote sensor configuration with a NEMA 4/7/9 electronics enclosure and NEMA 4X sensor enclosure. Triboguard II Monitors have a front glass window which allows process control and maintenance personnel to check dust collector performance at a glance without opening the enclosure.

TRIBOGUARD II FEATURES

- Continuous 4-20mA output & 0-100% LED bar graph
- Remote or integral sensor available
- Adjustable visual alarm setpoint and delay
- Easy-to-use controls with standard window enclosure
- Optional PreVent with Dual Level Alarms
- Optional Tribotrac Leak Locator

SPECIFICATIONS

ELECTRONICS SPECIFICATIONS

DC-coupled circuitry for optimum response and linear correlation of output over entire operating range of equipment.

Electronics Enclosure	NEMA 4 rating (integral sensor) NEMA 4/7/9 rating (remote sensor)
Hazardous Rating	Designed for Class I&II, Div 1&2, Group B,C,D,E,F&G CE Approved.
Humidity Range	0 to 95% relative, noncondensing
Output	4-20 mA nonisolated, 500 Ohm loop maximum; 0-100%, 10 segment LED bar graph with visual alarm
Power Required	105-130VAC (210-260VAC or 10-32VDC optional), 50/60 Hz, 5 Watts maximum load
Sensitivity Range	Adjustable 100 to 1 range; 0.005gr/dscf (10 mg/m ³) typical minimum detection
Sensitivity Setpoint	Baseline level setting indicated by first segment of LED bar graph
Smoothing	Adjustable from 0.1 to 22 seconds
Temperature Range	-20° to 140°F (-30° to 60°C)

SENSOR SPECIFICATIONS

Sensor Probe	316 Stainless Steel standard; other materials available. Specify length to reach or exceed mid-duct
Other Wetted Parts	303 Stainless Steel minimum grade
Insertion Length	3, 6, 12, 18 inch (7.6, 15.2, 30.5, 45.7 cm) Standard Integral - Custom lengths available up to 30" (76.2cm) Remote - Custom lengths available up to 36" (91.4cm)
Integral Sensor Assembly	Standard quick disconnect mounting with ferrule clamp and TFE insulator, usable in gas streams to 160°F (70°C)
Options	Extended PFA insulator, usable in gas streams to 160°F (70°C).

Remote Sensor Assembly Standard fi" NPT mounting and TFE insulator, usable in gas streams to 300°F (150°C). NEMA 4X enclosure. **Options**
Quick disconnect mounting with ferrule clamp.
Extended PFA insulator, usable in gas streams to 400°F (200°C). Ceramic insulator, usable in gas streams to 1,000°F (540°C).

Triboguard II OPTIONS

ELECTRONICS

E1 Power

1. 105 to 130 VAC, 50/60 Hz
2. 210 to 260 VAC, 50/60 Hz
9. Special

E2 Output

1. 4-20 mA, 0-100% bar graph
2. 4-20 mA, 0-100% bar graph, and Pre-Vent Alarm System

SENSOR

Base - System Style

- I. Integral Sensor
- R. Remote Sensor (Cable Required)

S1 Probe Material

1. 316 Stainless Steel
2. Tungsten Carbide
9. Special

S2 Insulation

1. Teflon (TFE):
-40° to 300°F (-40° to 150°C); up to 30 psi
2. Ceramic (High Temperature or Pressure):
-40° to 1000°F (-40° to 540°C); up to 2000 psi
3. Teflon (TFE) with Air Purge:
-40° to 300°F (-40° to 150°C); up to 30 psi
4. Ceramic with Air Purge
5. Extended High Performance (PFA):
-40° to 475°F (-40° to 240°C); up to 30 psi
6. Extended High Performance (PFA) with Air Purge
9. Special

S3 Probe Insertion Length

- | | |
|-----------------|-----------------|
| 1. 1/2" (1.3cm) | 5. 18" (45.7cm) |
| 2. 3" (7.6cm) | 6. 30" (76.2cm) |
| 3. 6" (15.2cm) | 7. 36" (91.4cm) |
| 4. 12" (30.5cm) | 9. Special |

S4 Sensor Mounting

- | | |
|-------------------|--------------|
| Q. Quick Release | F. Fugitive* |
| N. 1/2" Male NPT* | S. Special |

* Remote Only

Cable Length (feet)* _____ feet @ \$ _____/foot
Cable Terminals*

Factory Installed _____ @ \$ _____/set
or Field Kit _____ @ \$ _____/set

*Cable and connectors are for Remote Style Only.

Covered by one or more of the following patents: 4,063,153, 4,074,184, 4,082,994, 4,288,741, 4,631,482, 4,714,890, 4,904,944, 5,054,325, 5,095,275, 4,291,273, 5,287,061, 5,422,719, 5,448,172, 5,681,986.
Also covered by patents in countries other than the United States.

QUOTE FOR:

Name _____
Title _____
Company _____
Address _____
City _____ State _____ Zip _____
Telephone (_____) _____
Fax (_____) _____

PROCESS CONDITIONS

Temperature _____ °F (C°)	q Fabric Filter	q Environmental
Duct ID _____ inches (cm)	q Cyclone	q Maintenance
Solid _____	q Other	q Process/Lost Product
Pressure _____ psig (bar)		
Velocity _____ f/s (m/s)		
Gas _____		
Comment _____		

APPLICATION

CONCERN

ELECTRONICS

Enclosure Integral NEMA 4; Remote NEMA 4/7/9; CE Approved. female fl" NPT conduit connections; Integral-2, Remote-3.
Power: 5 Watts maximum load.
Operating Temperature -20° to 145°F (-30° to 65°C).
Hazardous Rating Designed Class I, II, III; Division 1, 2; Group B, C, D, E, F, G. CE Approved.
Response Time 0.1 to 22 seconds.
Sensitivity 100 to 1 range;
0.005 gr/dscf (10 mg/m³) typical minimum concentration detectable
Outputs 4-20mA, 10 segment LED bar graph

PRE-VENT ALARM SYSTEM (optional)

Enclosure NEMA 4X with window
Power 105 to 130 VAC, or 210 to 260 VAC
Outputs (2) Relay contacts SPDT 5 amp @ 28 VDC or 250 VAC
100VA (4) LED indicators, 0-100% bar graph
Adjustments Signal smoothing (0 to 25 sec.); (2) alarm set points (0 to 100%); (2) alarm time delays (0 sec. to 10 min.)

SENSOR

Remote Sensor Enclosure NEMA 4x
Wetted Metal Parts Probe - 316 Stainless Steel.
All others - 303 Stainless Steel minimum grade.
Insulation Extended high performance to prevent conductive bridging. Consult factory or your local representative for correct sensor. Optional air purge used for dry conductive dusts.
Probe Length Specify to reach approximately midpoint of duct or farther. Large ducts require remote connection and multiple remote sensors with daisy chain connection.
Installation Weld the fitting into the pipe or duct, and insert sensor.
Other Triboelectric Cable (for remote style only):
Temperature range: -60° to 400°F (-50° to 200°C);
Maximum distance: 300ft (100m).
Cable Connectors: Ring lug at electronics; push-on at sensor

QUOTE INFORMATION (FOR INTERNAL USE):

Quotation Number _____ PO Number _____
Unit Price \$ _____ Number of Units _____ Total \$ _____
Delivery _____ days ARO
Price quote valid 30 days; Terms: Net 30, FOB Danvers, MA.
Signature _____ Date _____