ELECTROSTATIC MEASUREMENT SOLUTIONS

Correstat 5410

Measures charge imbalances within the reactor

The Correstat™ 5410 electrostatic sensor monitors conditions within gas phase reactors. The sensor measures charge imbalances in the reactor, which is a preliminary indicator of issues associated with polymer agglomeration and the creation of films on the walls.

With the real-time reactor electrostatic charge measurements provided by the Correstat 5410, process continuity can be improved, and shutdowns avoided.

The Correstat 5410 probe is installed directly in the reactor and can be customized to fit into existing ports or nozzles with standard flanged connections. The Correstat 5410 probe is available in either integral or remote configurations to allow for a variety of process requirements.

BENEFITS

- Real-time indication of charge buildup in gas phase reactors
- Avoidance of reactor shutdowns caused by sheeting and agglomeration events
- Sensitivity ranges from pA to µA for optimum performance across varying conditions
- Feedback enables optimization of reactor conditions
- Simultaneous multi-parameter monitoring and DCS reporting via 4–20mA outputs

ADVANTAGES

- Compact one-piece design (remote electronics version also available)
- Custom-designed probe for easy, low-cost installation into existing port
- No maintenance or spare parts required
- Enhanced safety, needs no nitrogen purging
- Real-time bipolar measurement
- User selectable output range and smoothing settings

LexMarGlobal

Analyze with Integrity®

TECHNICAL SPECIFICATIONS

MECHANICAL

- Standard port (nozzle) sizes: 1.5" and 2" (others available)
- Flange mounting (300# typical)
- Cylindrical enclosure is 5.6" (14.3 cm) in diameter, 5.7" (19.4 cm) L
- All metals exposed to reactor are stainless steel
- Built to withstand significant impacts and reactor conditions
- Distance from flange face to tip of sensor is customizable
- Pressure tested up to at least 1000 psi (higher pressure systems available)

ENVIRONMENTAL

- ATEX/IECEx (Ex II 2 G/Ex db ia IIC T3 Gb)
- cULus Listed for Class I, Division 2, Groups A, B, C, and D
- Operating Temperature Range: -20°C up to 55°C
- Consult LexMar Global for high temperature applications

ELECTRICAL

- Two ¾" NPT entries for power and analog output signal
- 120 or 230 VAC 50/60 Hz or 24 VDC, 10 VA
- Intrinsically safe probe connection
- Probe tip operates at <1 volt, eliminating the dangers of a high voltage source within the reactor
- 4–20mA bipolar outputs, two user-selected parameters can be assigned as outputs
- Full scale output range selectable from ±0.1 nA to ±1000 nA of electrostatic current
- User selectable signal damping

DISPLAY

- LED display indicates real-time bipolar signal and allows navigation through system menus
- Menu selectable output range adjustment
- Menu selectable outputs: Instantaneous DC, Instantaneous AC, Avg. DC, Avg. AC, and Device Temperature
- Menu selectable signal smoothing
- All controls and indicators viewable through the enclosure window

PROVEN RELIABILITY

The Correstat™ 5410 sensor is engineered to operate continuously 24 hours per day, seven days per week. It is designed for the harsh environment of fluidized bed reactors, requiring no maintenance or spare parts. Unlike traditional electrostatic probes, the Correstat sensor measures current. This keeps the potential of the active probe tip under 1 volt—compared to nearly 10 kV from traditional probes.