

# ESM3400™

The complete system for electrostatic measurements in gas phase reactors

Correflow®



The ElectroStatic Monitor (ESM3400) is a multi-channel integrated system that provides comprehensive electrostatic monitoring throughout a gas phase process. Charge imbalances and indications of other dynamic electrostatic interactions are monitored in real-time with various ESM probes. Reactor probes give early warning of otherwise undetectable electrostatic changes that can result in operational problems and reactor shutdowns. Carryover probes warn of excess particulate fines in gas recycle lines that cause heat exchanger and pump fouling.

The ESM3400's passive detection method involves no moving parts. The entire system is designed for the harsh environment of industrial applications. Custom designed probes allow easy installation in either new or existing plants.

Progression's electrostatic monitoring systems are the safest method (low voltage level) for electrostatic analysis in commercial and pilot plant reactors.

## Benefits

- Safer operation (low voltage)
- Early warning of reactor upsets
- Multi-point comprehensive detection
- Continuous high frequency, bipolar response
- Simple installation
- Optimization of fluidizing gas flow
- AC and DC signal analysis

## Advantages

- Approved for use in hazardous locations
- Rugged sensors for harsh environments
- No moving parts
- Custom probes for low-cost installation
- Remote adjustment of all settings



# Specification

## Sensors and Probes Available

Up to eight probes in any combination (reactor or carryover) are monitored simultaneously.

All sensors are measured every 0.1 seconds.

All sensors are pressure tested to at least 1000 psi (68 atm).

Probe configuration is customized to plant specifications.

## Analyzer Housing

**Explosion proof:** (NEMA 4/7/9) Class 1, Division 1, Group B and C  
Size: 20" x 20" x 11" (51 x 51 x 28 cm)

**European explosion proof** (flame proof): ATEX approved, EEx d i<sub>a</sub> IIC T4

Size: 21.5" x 19.9" x 14" (55 x 48 x 36 cm)

**Stainless steel option:** (NEMA 4X)

Size: 20" x 16" x 11" (51 x 41 x 28 cm)

Stainless steel enclosures with purge available

## Power Requirements

100 to 240 VAC 50 – 60 Hz (85 Watts maximum)

## Outputs/Inputs

Real-time LED display with continuous update

Keypad access to all selectable parameters

One user-defined 4 – 20mA output per sensor

Additional outputs available

RS422 and CAN serial bi-directional interface with PC

Modem for remote monitoring and diagnostics

## Available Measurements

Instantaneous bi-polar signal

Average bi-polar signal

Instantaneous absolute value signal

Average absolute value signal

Standard deviation

## PC Software

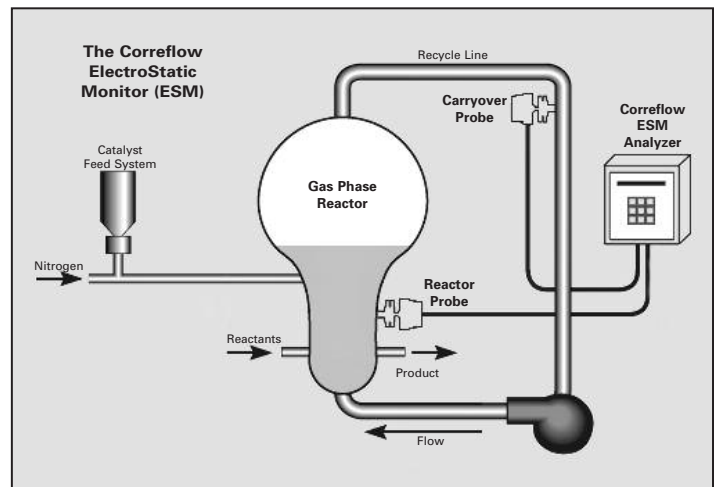
Efficient environment to view and control system parameters

Displays real-time data of user-selected parameters

Stores historical data for trend information

Visual high and low alarm indications

Covered by one or more of the following patents: USA: #4,074,184, #4,774,453, #4,619,145, #5,396,806, #2,038,622, #2,043,219; Japan: #1,361,730, #1,995,488; UK: #1,570,039; Canada: #1,101,070, #1,256,300; Australia: #573,408. Other patents pending.



Analyze with integrity.™

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