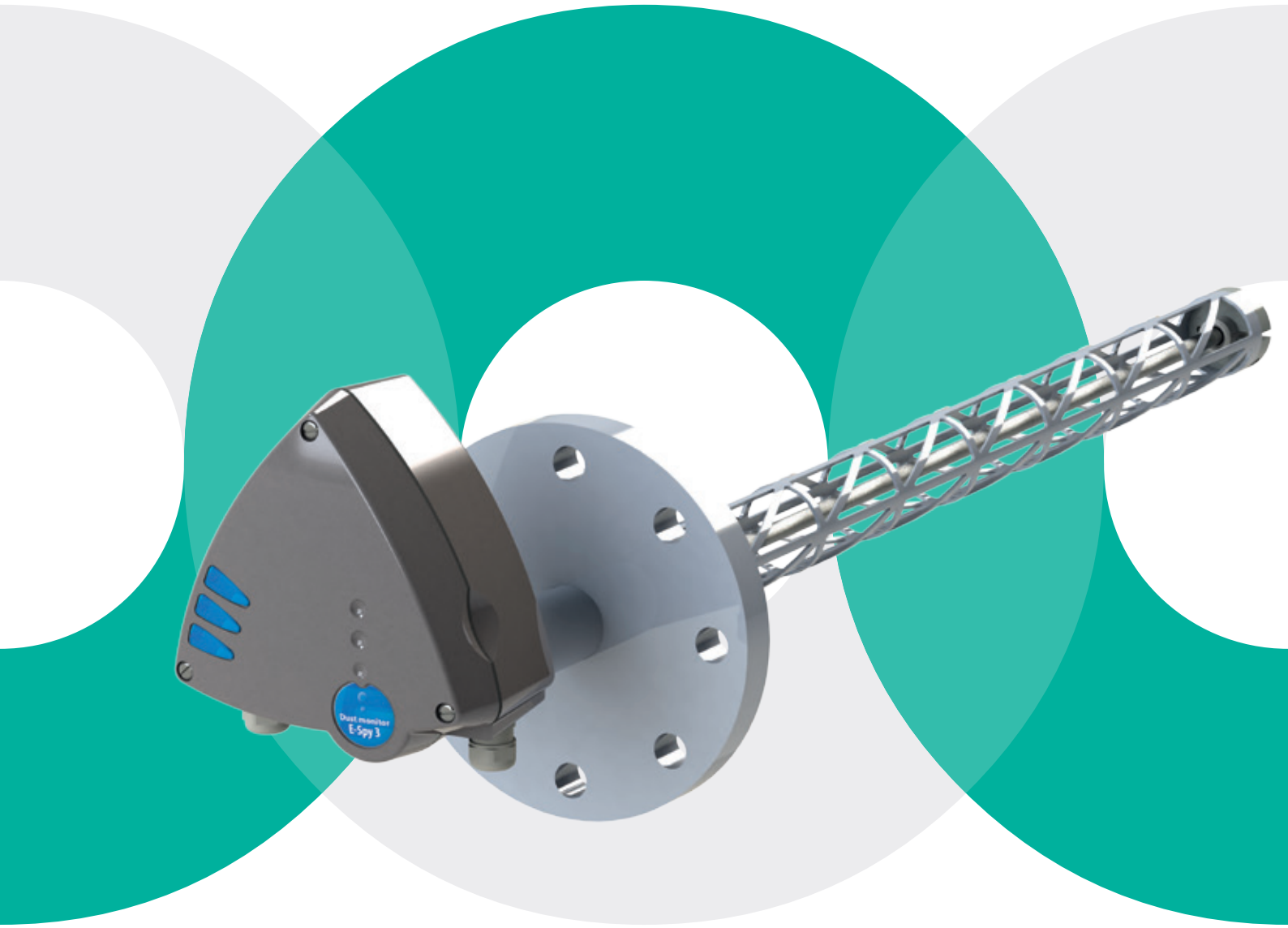


E-Spy Dust Monitors – monitor your electrostatic precipitator

www.sintrolproducts.com

(주)엠씨마스터스
MC Masters
Measurement & Control

SINTROL
For Good Measure

Manage your dust removal process

- Reduce plant operating expenses
- Enhanced filtration system management
- Automatic set-up procedure

E-Spy

E-Spy is a revolutionary process monitor that helps optimize the performance of an ESP using state-of-the art probe based technology. Recently developed by our engineers and valuated by research institutes here in Finland, our monitors continuously track the particulate measurements downstream from the ESP enabling plants to not only adhere to the strictest emission regulations, but also reduce overall energy costs. With hundreds of installations worldwide, this has become our fastest growing process control device since it both outperforms and is much more cost effective than the alternative optical monitors.

Hundreds of E-Spy have now been installed, and customers are proving to be very satisfied. An increasing number of dust monitors are now being replaced by the Sintrol E-Spy because it is inexpensive, easy to install and commission, requires hardly any maintenance and gives a reliable measurement signal

The ESP operator can adjust the parameters to minimize the ESP maintenance requirements, operating costs and the expenses from dust emissions, while meeting all regulatory requirements.

Problems Solved

Since the purpose of using an ESP is to remove particulate matter from the gas passing through it, the only way to gain an understanding of its function is to obtain information on the efficiecy of the dust removal. This data is needed both for making adjustments to the ESP controler, as well as for reporting the emission levels to the authorities. By optimizing the operating parameters, costs can be minimized while still complying with pollution regulations.

However, obtaining an accurate dust concentration measurement after using an electrostatic precipitator was considered to be problematic. Optical dust monitors (opacity meters) are expensive to purchase and install, require expensive maintenance, yet the measurement results are still unreliable.

While optical dust monitors have been the traditional way of measuring dust concentrations immediately after an electrostatic precipitator, they have proven to have several disadvantages:

- High investment / installation costs
- Labor intensive and expensive maintenance
- They need clean, dry air to function
- Vibration causes fractures and misalignment of the optics
- The availability of accurate measurement data is poor due to fractures, resulting in non-optimized and costly operation of the ESP

E-Spy: The Revolutionary Alternative

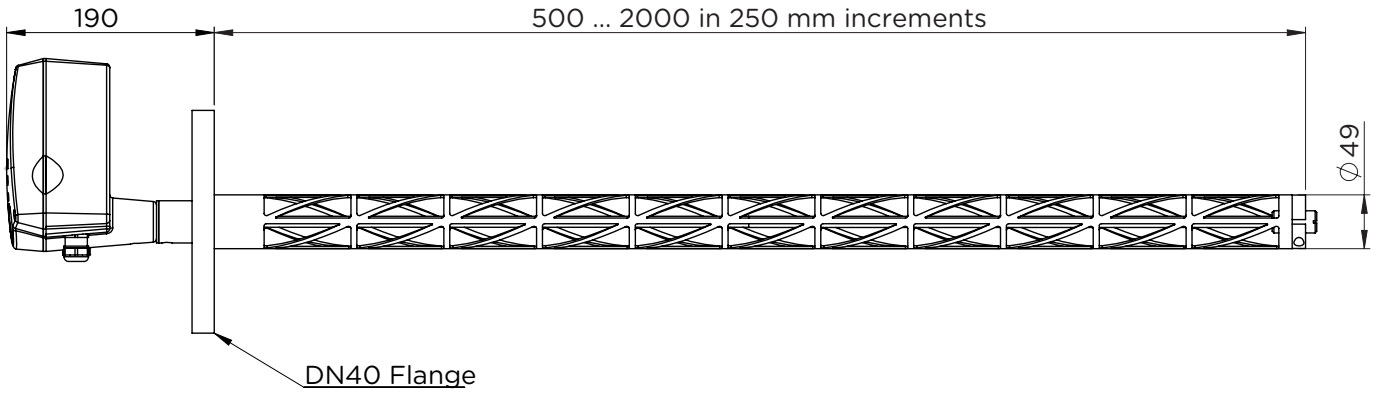
E-Spy brings an alternative ESP control solution to the previous high cost / high maintenance options.

By using this new dust monitor, the operator can:

- Constantly optimize the operating parameters of the ESP; no measurement down time
- Judge the performance of the ESP based on output signal; identify maintenance needs
- Simplify the optimization of the rapping system; decrease energy costs and emissions
- Save on operating costs - ESPs can be run with the lowest possible energy consumption while still complying with authority requirements

Industrial Applications

- Power/electricity generation
- Cement industry
- Chemicals industry
- Metals industry
- Paper industry



Technical Specifications

Measurement Objects	Solid particles in a gas flow
Particle Size	0.3 µm or larger
Measurement Range	From 0.1 mg/m³
Measurement Principle	Inductive Electrification
Protection Category	IP65
Probe Length (total/measuring)	500mm / 440mm, 1000mm / 940mm, 1500mm / 1440mm 19.7″ / 17.3″, 39.4″ / 37.0″, 59.1″ / 56.7″
Power Supply	115 VAC, 230 VAC or 24 VDC
Power Consumption	DC model Max 3 W, AC model Max 8 W
Wiring Connections - Power Supply	DIN PG11 cable gland
Wiring Connections - Output Signals	DIN PG11 cable gland
Process Connection	Flange (DN80), other flange types on request
Output Signals	- Isolated 4 ... 20 mA - Two SPDT relays: 5 A, 24 V AC / DC - Serial communication, (RS-485)
Communication Type	Modbus RTU
Range Set Up	- Normal measuring range: automatic, based on average measured dust flow during setup procedure - Manual measuring range: User selectable
Relay Alarm Settings	- Automatic, set at factory: Based on average measured dust flow - User selectable ranges
Offset trim	Automatic drift compensation
Damping Time	10 ... 300 s
Process Conditions	
Temperature	Max 250 °C, Max >250 °C on request ı Max 482 °F, Max >482 °F on request
Pressure	Max 300 kPa, Max 600 kPa (optional) ı Max 43.5 PSI, Max 87.0 PSI (optional)
Gas Velocity	Min 4 m/s ı Min 13.1 ft/s
Humidity	Max 95 % RH (non-condensing)
Ambient Conditions	
Temperature	-20 ... +45 °C and 60 °C for 24 VDC ı -4 ... +113 °F and 140 °F for 24 VDC
Humidity	Max 95 % RH (non-condensing)
Vibration	Max 5 m/s² ı Max 16,4 ft/s²
Materials and Weight	
Probe (wetted part)	Stainless steel (AISI 316L)
Probe Coating (wetted part)	PTFE Teflon (optional)
Process Connection (wetted part)	Stainless steel (AISI 316L)
Faraday Cage (wetted part)	Stainless steel (AISI 316L)
Probe Insulation (wetted part)	PEEK
Probe Sealing (wetted part)	FPM Viton
Enclosure	Aluminum alloy
Weight	6.8 kg ı 15.0 lb

Principle of Operation

Sintrol dust monitors are based on a unique Inductive Electrification technology. The measurement is based on particles interacting with an isolated probe mounted into the duct or stack. When moving particles pass nearby or hit the probe a signal is induced. This signal is then processed through a series of Sintrol's advanced algorithms to filter out the noise and provide the most accurate dust measurement output.

Sintrol

Ruosilantie 15,
FI-00390 Helsinki, FINLAND
Tel. +358 9 561 7360
e-mail: info@sintrolproducts.com
www.sintrolproducts.com