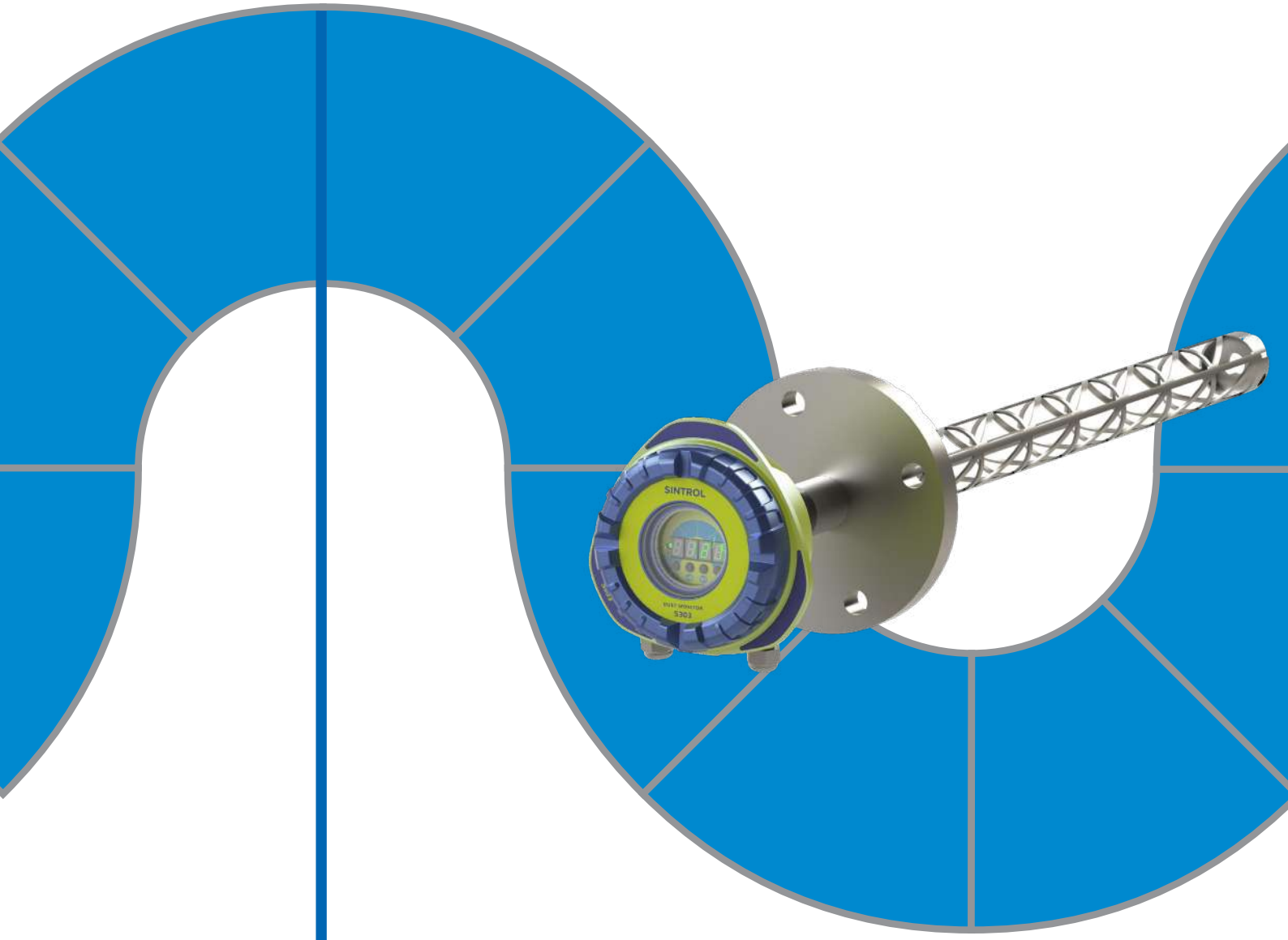
PRODUCT BROCHURE

E-Spy

Monitor your electrostatic precipitator



CE

RoHS 3
COMPLIANT
EU 2015/863

Enviro
Technology Services Ltd
part of CuraTerrae

E-Spy

- **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 efficiency of the dust removal. This data is needed both for making adjustments to the ESP controller, 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

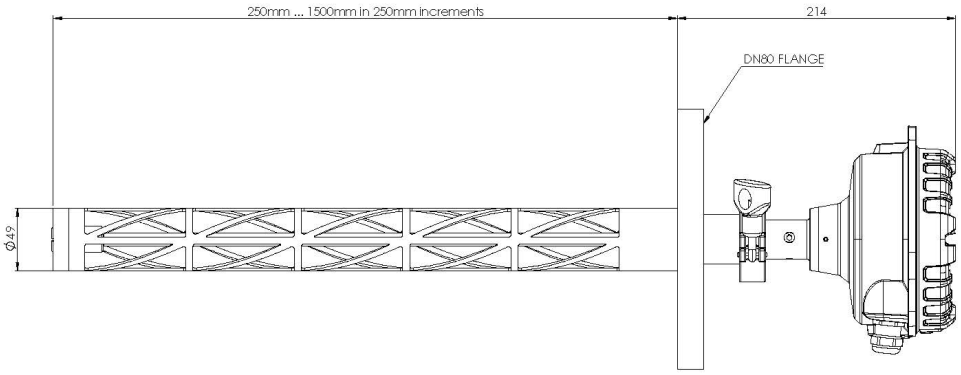
E-Spy brings an alternative ESP control solution to the previous high cost / high maintenance options.

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

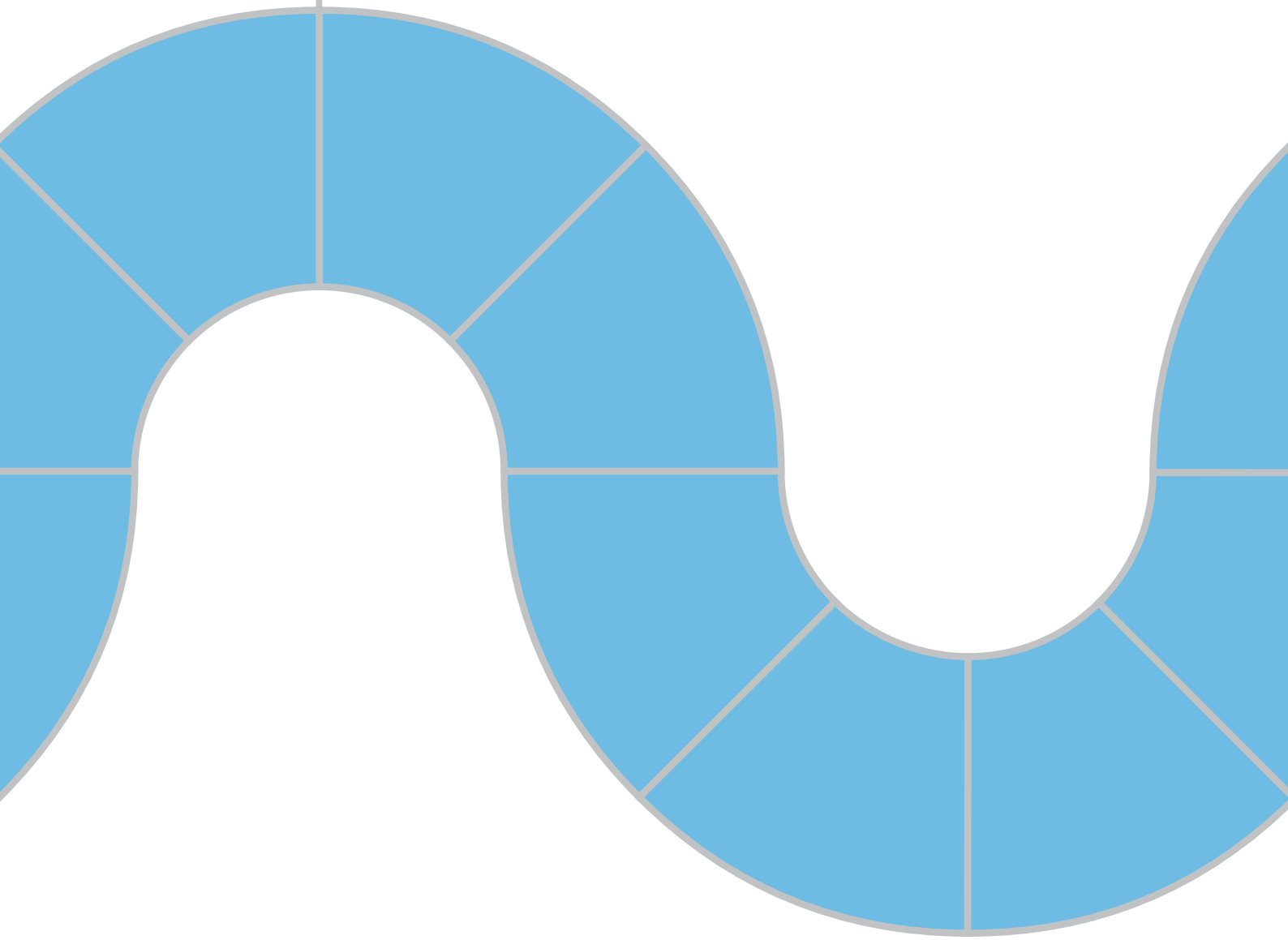


Product Name	E-Spy with S303
Measured objects	Total Suspended Particles (TSP)
Measurement principle	Inductive Electrification
Measurement range	Detection Limit 0,01 mg/m³ Maximum Range up to several g/m³, depending on operating conditions
Ingress protection	IP66
Power supply requirements	24 V DC ±10% 1 100 ... 240 V AC ±10%, 50 / 60 Hz
Power consumption	Up to 10 W DC / AC
Output signals	• 2 × Independent SPDT dry contact relays, max. 30 V DC / 5 A or 240 V AC / 5 A, cos ϕ = 1 • Isolated active 4 ... 20 mA output loop, max. loop resistance 250 Ω + NAMUR NE 43 compliant alarms
Communication interface	• 2 × Serial communication RS-485 • USB • Radio frequency (RF, Requires optional RF antenna)
Communication protocol	• Modbus RTU (with RS-485) • Sintrol network (with USB, RF and RS-485)
Physical characteristics	
Enclosure	Aluminium
Wetted parts	• Probe: Stainless steel (316L) • Insulation: Polyphenylene sulfide (Ryton R-4)
Weight	from 5,7 kg to 7,5 kg
Ambient conditions	
Temperature	-40 ... 60 °C (-40 ... 140 °F) / -30 ... 60 °C for Ex models
Humidity	Max. 95 % relative humidity (non-condensing)
Process conditions	
Temperature	• Max. 300 °C (572 °F) optionally up to 700 °C (1292 °F) • Max. 250 °C (482 °F) with Teflon-coated probe • Max 200 °C for Ex models
Pressure	• Max. 600 kPa (87.02 psi) in temperatures up to 300 °C (572 °F) • Max. 300 kPa (43.51 psi) in temperatures from 300 °C (572 °F) to 700 °C (1292 °F) when high-temperature process connection is used
Flow velocity	Min. 3 m/s (9.84 ft/s), max. tested 40 m/s (131.23 ft/s)
Wireless communication*	
Frequency bands	• 868 MHz, 15 channels • 915 MHz (license-free ISM band)
Transmit power	Up to +23 dBm, user-adjustable
Receiver sensitivity	-110 dBm
Communication protocol	Proprietary Sintrol Network protocol
Typical communication range (non-line of sight)	• 868 MHz version • Up to 1000 m (3280 ft) in urban environments**

* Requires optional RF antenna.
** Surrounding structures and other devices using radio frequencies can have significant effect on RF communication range.

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.



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