



S300 Series Dust Monitors – with a difference!



www.sintrolproducts.com



Manage your dust removal process

Official Emissions Measuring – QAL1

- Automatic range setup
- No manual adjustment required
- Automatic drift compensation
- No optical windows to be cleaned

Features

| | S301 | S303 | S304 | S305 |
|---|------|------|------|------|
| 2 Independent alarm relays (user selectable alarm limits, NO or NC) | • | • | • | • |
| 4–20 mA signal output | | • | • | • |
| Remote setup & configuration | | • | • | • |
| Self zero check | | | | • |
| Span check | | | | • |
| Filter bag leak detection | • | • | • | • |
| Filter performance | | • | • | • |
| Particulate emissions monitoring in mg/m ³ | | | • | • |
| Certified emissions monitoring in mg/m ³ | | | | • |
| Serial communication | • | • | • | • |
| ATEX approved model | x | x | x | x |
| Remote models | x | x | x | x |

• Standard x Optional

S301

Equipped with two independent alarm relays that can be used for early warning and failure, or connected to alarm-devices, S301 is used to detect filter deterioration and blockage or breakage. The alarms can be used for process control (as an ON-OFF system) in flow – no flow situations in bulk solids handling and pneumatic transport applications. Very fast response time, a typical characteristic of these monitors, enables early detection and prevention of expensive product loss to the environment.

S303

With a 4–20 mA analog signal output used for trend monitoring, S303 is installed downstream from a filter, cyclone, dryer or similar devices to monitor filter performance as well as particulate emissions. It has two alarm relays that will engage when particulate levels in the gas stream exceed a preset level. It can also be used for process control in certain applications. S301 and S303 are designed for use in any process fitted with bag, ceramic, cartridge filters or cyclones where indicative (qualitative) monitoring is required.

S304

Combining the S303's features with the added feature of allowing calibration to give readings in mg/m³ format, it can give plant operators the ability to see absolute value measurements of dust concentrations. Installed in emissions stacks or in common ducts of a stack, the S304 can give a continuous dust concentration in the process enabling constant monitoring of the dust levels.

S305

Equipped with a Self Zero and Self Span check, the S305 meets all QAL1 requirements for official emissions regulations, as proven by its TÜV certification. Used for emissions monitoring in official stack measurements for reporting to authorities as well as providing a mg/m³ reading to plant operators. Gives plants a continuous measurement of particulate emissions to ensure it remains within its imposed regulatory limits.

ATEX Models

- Certified for ATEX Zone 20, 21 or 22
- Approved to Category II 1/2 for Gas and Dust
- IP65 Enclosure, Custom Designed
- Certification Type: II 1/2 GD EEx ia IIC, T6, IP65, 85°C
- Utilizing SINTROL's Advanced Inductive Electrification Technology

The ATEX directive covers health and safety of workers potentially at risk from exposure to explosive environments. This directive classifies areas into Zone 0, 1, 2 for gas and 20, 21 or 22 for dust and guides plant operators to install the appropriate ATEX certified systems. Products are required to be categorized by the level of protection that they offer against the risk of them becoming a potential source of ignition in an explosive atmosphere. The equipment conformity categories are 1, 2 & 3.

Split Architecture (Remote) Models

S300 Series includes the following remote models: S311, S313, S314 and S315. The remote models are used when the sensor has to be installed with the control unit up to 200 meters away. In these models, the sensor is connected to an enclosure housing the preamplifier (PA) and the amplified signal is transmitted with a 4-wire shielded cable using one of the recommended cables.



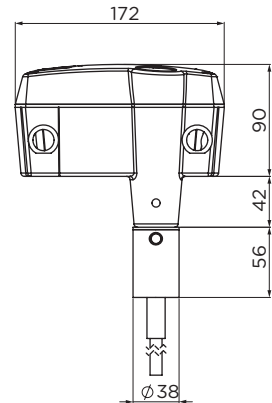
Remote display

305 - Remote digital display supplied with S300 Series Monitors (optional)

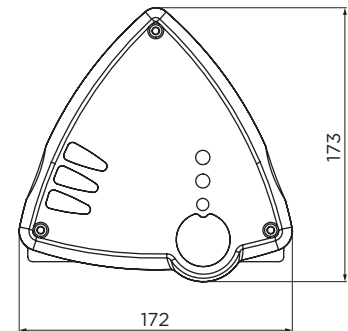
Technical Specifications

| | |
|-------------------------------------|--|
| Measurement Objects | Solid particles in a gas flow |
| Particle Size | 0.3 μm or larger |
| Measurement Range | From 0.1 mg/m^3 |
| Measurement Principle | Inductive Electrification |
| Protection Category | IP65 |
| Probe Length (total/measuring) | 500 mm / 440 mm, 750 mm / 690 mm (optional), 1000 mm / 940 mm (optional), > 1000 mm on request 19.7" / 17.3", 29.5" / 27.2", 39.4" / 37.0" (optional), > 39.4" on request |
| 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 | Socket (38 mm OD), quick clamp (optional), flange (optional) |
| Output Signals | - Isolated 4 - 20 mA, (not available in S301) - Two SPDT relays: 5 A, 24 V AC / DC |
| Communication Interface | Serial communication RS-485 |
| Communication Protocol | Modbus RTU |
| Range Set Up | - Normal measuring range: automatic, based on average measured dust flow during setup procedure - Extended measuring range: User selectable (not available in S305) |
| Relay Alarm Settings | - Automatic, set at factory: Based on average measured dust flow - User selectable ranges |
| Offset Trim | Automatic drift compensation |
| Signal Damping Time (mA) | 10 - 300 s |
| Relay Delay Time | 10 - 180 s |
| Process Conditions | |
| Temperature | Max 300 $^{\circ}\text{C}$, Max 700 $^{\circ}\text{C}$ (optional) Max 572 $^{\circ}\text{F}$, Max 1292 $^{\circ}\text{F}$ (optional) |
| Pressure | Max 300 kPa, Max 600 kPa (optional) Max 43.5 PSI, Max 87 PSI (optional) |
| Gas Velocity | Min 4 m/s Min 13.1 ft/s |
| Humidity | Max 95 % RH (non-condensing) |
| Ambient Conditions | |
| Temperature | -20 to +45 $^{\circ}\text{C}$ and to 60 $^{\circ}\text{C}$ for 24 VDC -4 to 113 $^{\circ}\text{F}$ and to 140 $^{\circ}\text{F}$ for 24 VDC |
| Humidity | Max 95 % RH (non-condensing) |
| Vibration | Max 5 m/s^2 Max 16.4 ft/s^2 |
| 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) |
| Probe Insulation (wetted part) | PEEK |
| Probe Sealing (wetted part) | FPM Viton |
| Enclosure | Aluminum alloy |
| Weight | 2.3 kg 5.1 lb |

Front



Top



Industrial Applications

- Cement
- Chemical processing
- Metallurgical
- Foundries
- Pharmaceutical
- Fertilizers
- Wood processing
- Food
- Tobacco
- Animal feed processing
- Power plants
- Waste incinerators
- Pulp and paper

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

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