MONITORING FOR POWDER, DUST & GAS

What we do

Industries - Where we are

POWDER
Flow Measurement
Flow/NoFlow Detection
Moisture Measurement
Velocity
Screen Break Detection
Level

DUST
Broken Bag Detection
Filter Performance
Dust Monitors
The newly formed **Process** division of envea™ (trademark of the Environnement S.A Group companies) brings together the expertise of a range of global instrumentation companies already established as experts in their respective fields to provide an unrivalled range of monitoring solutions for industrial processes.

The process division includes market leading companies who each provide innovative instrumentation for the monitoring of powders, dust and gases specifically for manufacturing industries to provide added value measurement solutions.

Together our companies provide over 70 years of experience of producing ground breaking instrumentation to enhance manufacturing processes helping to reduce lost production, plant maintenance times and associated costs. Our instruments are supported by a global sales and service subsidiary network as well as distributors in over 70 countries.

Our experience in the process industry is allied to the over 40 years’ experience of our parent company Environnement S.A’s in the manufacture of gas CEMS and air quality analysis systems.
OUR SOLUTIONS ADAPT TO YOUR NEEDS.
Since years we supply instruments and solutions to many industries. Understanding the applications and needs of our customers has always been an important driver in the development of our systems.

Often working in harsh environments our sensors have been designed to provide rugged, reliable monitoring often with built-in self-checks to assure the instruments correct functionality.

Working in both heavy industries such as power, minerals and steel as well as sensitive processes in the chemical and food industries our instrumentation for powder, dust and gas help to make processes more reliable, increase their efficiency and create cost reduction benefits for our customers worldwide.
Our installations are driven by:

- Providing our users with increased automation for energy and raw material efficiency
- Increasing the potential for on-line real time quality control and trending
- Providing real time sensor feed-back information for more flexible and high productivity production
- Meeting new regulatory demands and developments for environmental protection whilst driving operating costs down

and many more ...

POWER
- coal
- biomass
- incinerators

INCINERATION
- bio fuels
- gas
- oil
- clinical
- chemical
- crematoria
- municipal

FOOD
- coffee
- milk powder
- sugar
- animal food
- cereals
- pectin
- grain
- tobacco
- beverage
- flour
- pet food
- starch

WOOD
- insulations
- floors
- chipboard
- pulp & paper
- cellulose
- fibers and additives
- particleboard
- timber products

WHATEVER INDUSTRY WE WORK IN
Below examples show typical solutions.

**INCINERATION**

1. Point level detection in charging chute
2. Mass flow measurement of absorbent
3. Flow/NoFlow detection at cyclone outlet
4. Ash level detection at filter outlets
5. Flow detection at ash transportation system
6. Continuous level measurement in storage silos
7. Individual chamber baghouse performance monitoring
8. Predictive bag filter row monitoring
9. Process gas monitoring
10. Mainstack compliance gas, dust and flow measurement
11. Potential hazards measurements
1. Mass flow measurement out of spray dryer
2. Continuous moisture measurement in fluidized-bed dryer
3. Mass flow measurement for inline blending
4. Flow/NoFlow detection in return powder lines
5. Primary filter performance monitoring
6. Compliance dust measurement stroke trending
7. Ambient dust monitoring
8. Potential hazards measurement
Continuous mass flow measurement of mill reject

Flow trending in air slide

Flow/NoFlow detection on cyclones

Process gas monitoring

Mass flow and velocity measurement of coal into kiln

Continuous moisture measurement of secondary fuel

Individual chamber baghouse performance monitoring

Predictive bag filter row monitoring

Silo baghouse performance monitoring

Continuous level measurement in storage silos

Mainstack emissions compliance gas, dust and flow measurement

Potential hazards measurement
1. Mass flow measurement of pulverized coal into blast furnace
2. Flow/NoFlow detection in single coal lance
3. Continuous moisture measurement of coal
4. Continuous flow measurement of sinter dust
5. Level detection in storage silos
6. Silo baghouse performance monitoring
7. Individual chamber baghouse performance
8. Monitoring electro-filter efficiency
9. Process gas monitoring
10. Mainstack emissions compliance gas, dust and flow measurement
11. Potential hazards measurement
1. Flow/NoFlow detection at filter outlets
2. Flow measurement after pelletizer
3. Continuous moisture measurement after dryer
4. Process gas monitoring
5. Predictive monitoring of bag row failure
6. Final stack emissions for compliance and performance monitoring
7. Emissions compliance monitoring
8. Potential hazards detection
1. Flow measurement after intake and cleaning
2. Flow/NoFlow detection of flow into roller mills
3. Continuous moisture measurement after conditioning
4. Screen break detection
5. Continuous level measurement in storage silos
6. Silo baghouse performance monitoring
7. Stroke filter performance
8. Ambient dust monitoring
envea™ - SWR engineering manufactures an unrivalled range of monitors for powder, granulates and dust to meet the continued demands of industrial processes to better understand and control their processes to help provide increases in efficiency and product quality. With almost 25 years of experience envea™ - SWR engineering has achieved extensive knowledge in use of sensors for the measurement of flow, level, moisture, concentration, velocity and particle size detection. All working with the latest ground-breaking microwave and electromagnetic technologies.

FLOW MEASUREMENT

IN GRAVITY TRANSPORT AFTER FEEDERS

SOLIDFLOW 2.0
Microwave

MAXXFLOW HTC
Electromagnetic

IN AIR SLIDE TRANSPORT

SLIDECONTROL
Microwave

IN PNEUMATIC CONVEYING

Leanphase

Densephase

PICOFLOW
Electrodynamic

SOLIDFLOW 2.0
Microwave

DENSFLOW
Electromagnetic
**APPLICATIONS**

**POWDER**

**FLOW MEASUREMENT**

**MASS FLOW MEASUREMENT IN GRAVITY TRANSPORT**

**SOLIDFLOW 2.0**

*Waste incineration plant*

*Material:* Furnace coke  
*Installation:* Freefall between screw conveyor and injector  
*Volume:* 300 - 400 kg/h  
*Customer benefits:* Easy process control in exhaust gas cleaning. Avoidance of under- and overdosing. Contactless measurement, thus no erosions.

**MAXXFLOW HTC**

*Building materials*

*Material:* Clay  
*Installation:* Freefall after screw conveyor  
*Volume:* 30 - 80 t/h  
*Customer benefits:* Contactless and maintenance-free measurement of high throughput rates. Replacement of Impact Flowmeter.

For flow rates up to 250 t/h

**FLOW MEASUREMENT IN AIR SLIDES**

**SLIDECONTROL**

*Cement plant*

*Material:* Cement  
*Installation:* Air slide after main storage silo  
*Volume:* Approx. 80 t/h  
*Customer benefits:* Securing of constant material availability at the filling machine. Easy to retrofit sensor.
SOLIDFLOW 2.0

*Starch production*

**Material:** Starch  
**Installation:** Starch pneumatic blow line  
**Volume:** 0 - 3 t/h  
**Customer benefits:** Totalizing starch flow into the silo for inventory control.

PICOFLOW

*Incineration plant*

**Material:** Furnace coke, hydrated lime  
**Installation:** Pneumatic blow line  
**Volume:** 4 - 50 kg/h  
**Customer benefits:** Continuous flow measurement at low air/solid ratios. Documentation of material consumption.

DENSFLOW

*Steel plant*

**Material:** Coal  
**Installation:** Pneumatic densephase conveying  
**Volume:** 2 - 10 t/h  
**Customer benefits:** Controlling coal flow in main pipe from vessel to coal distributor.
UNDERSTANDING YOUR PROCESS AND HELPING TO IMPROVE.
POWDER

FLOW / NOFLOW DETECTION

IN GRAVITY TRANSPORT AFTER FEEDERS

FLOWJAM PLUS
Microwave

Gives Flow/NoFlow PLUS jam / no jam information

IN PNEUMATIC CONVEYING

FLOWJAM
Microwave compact

FLOWJAM S
Microwave separated version

ON FLEXIBLE HOSES

FLOWJAM A
Microwave
FLOWJAM PLUS

*Incineration plant*

**Material:** Activated carbon  
**Installation:** After rotary valve  
**Volume:** Max. 100 kg/h  
**Customer benefits:** Activated carbon is being dosed into incinerator to reduce dioxin emissions. FlowJam Plus monitors the flow continuously and indicates immediately any interruption.

FLOWJAM & FLOWJAM S

*Building material*

**Material:** White and grey concrete  
**Installation:** Silo outlet before screw conveyor  
**Volume:** Approx. 1 t/h  
**Customer benefits:** Production security by monitoring of material flow. Avoidance of shutdown or waiting time during production process and system start up.

FLOWJAM A

*Surface treatment*

**Material:** Glass beads  
**Installation:** Flexible hose after dosing device  
**Volume:** 0,5 kg/min  
**Customer benefits:** Securing of constant material flow with decreased pulsations.
APPLICATION

M-SENS 2

Pellets production
Material: Wood chips
Installation: Screw conveyor
Volume: 3 t/h
Moisture: 3 - 8 %

Continuous measurement on screw conveyors, hoppers and belt conveyors
SPEEDFLOW 2.0
Triboelectric

SPEEDFLOW 2.0-PIPE
Triboelectric

Available as plug-in or full cross-section version

APPLICATION

SPEEDFLOW 2.0

Food manufacturing
Material: Ingredients
Installation: Pneumatic conveying line
Volume: 300 - 400 kg/h
Velocity: 10 - 12 m/s
Customer benefits: Ensure that material speed does not exceed maximum to avoid product damage.
POWDER

SCREEN BREAK DETECTION

APPLICATION

PADDY Microwave

Refinement
Material: Quartz
Installation: On tumble screen
Volume: 150 kg/h
Customer benefits: Improved continuous monitoring of fines in between the twice-a-day manual check.

Immediate alarm when oversize product in fines
RELIABLE SOLUTIONS BASED ON EXPERIENCE.
POWDER

LEVEL

POINT LEVEL

PROGAP S
Microwave
separate version

PROGAP
Microwave
compact

CONTINUOUS

NICO 15/30
Radar
**POINT LEVEL**

**PROGAP**

*Plasterboards*
- **Material:** Paper fibers
- **Installation:** Filling chute of a material hopper
- **Customer benefits:** Detection of material jam at the earliest possible time. Fault-free process control and avoiding process downtime.

**PROGAP S**

*Surface treatment*
- **Material:** Sand
- **Installation:** Min. and max. position in storage hopper
- **Customer benefits:** Contactless measurement of minimum and maximum level for filling control.

**CONTINUOUS**

**NICO 15/30**

*Cement plant*
- **Material:** Cement
- **Installation:** Top of main storage silo
- **Customer benefits:** Continuous level measurement for inventory control.
envea™ manufactures an unrivalled range of dust monitors to meet the demands of industrial processes. From both regulation and process standpoints envea™ instruments allow end users to better understand and quantify their particulate emissions as well as to monitor the efficiency of dust filter systems and process plant.

By the correct selection of a suitable dust monitor industrial processes can achieve both cost savings in terms of reduced baghouse maintenance and lost production and in addition achieve reductions in emissions to atmosphere.

Instruments are available to measure both dry and saturated wet stacks and are based on Cross Stack Optical, ElectroDynamic™ and Laser Scatter technologies. Baghouses are normally monitored by cost effective probe electrification ElectroDynamic™ devices with Laser Scatter technology predominately being utilised post electrostatic precipitators. Both ElectroDynamic™ and Scatter technologies can be used as filter trending devices or calibrated to measure quantitatively in mg/m³ with the ElectroDynamic™ sensors used as both MACT compliant bag leak detectors in the USA, as well as being certified to the European EN 15859 standard for both leak and measurement.
The basic broken bag detector
CITY

Dusty is the simplest way to detect a filter break at a minimum. Conflicts with the neighbors can be avoided and it saves money.

Compact broken bag detector with trend signal
CITY C

For all those, for whom a single alarm by relay is not enough! Dusty C additionally provides a 4 ... 20 mA trend signal and indicates upcoming filter problems.