PROCESS
Monitoring for Powder, Dust & Gas

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ENVEA has over 70 years experience in designing and manufacturing a wide range of instrumentation to support industries in better understanding and controlling their processes.

We employ innovative technologies and solutions for the monitoring of powders, dust and gases, helping not only to enhance the manufacturing process but also to reduce lost production time, reduce maintenance and reduce other associated costs. Our instruments provide a window into the manufacturing process, providing data to optimize plant efficiency and product quality.

The ENVEA Process instruments are supported by a global sales and service subsidiary network as well as distributors in over 80 countries. Our experience in the process industry is allied to over 40 years in the environmental compliance sector, for whom we manufacture class leading particulate and gas CEMS together with mercury, flow and air quality analysis systems.

**WHAT WE DO**

Innovative monitoring solutions
OUR EXPERIENCE IS BASED ON THOUSANDS OF INSTALLATIONS WORLDWIDE, HELPING TO IMPROVE YOUR PROCESSES
Our extensive experience in process applications in a wide range of industrial markets has provided us with an unrivaled knowledge and understanding of differing applications and the potential cost reductions and process enhancements that our instruments and services can bring.

Working closely with many of the world’s leading manufacturers has given us an in-depth understanding of their needs which has always been an important driver in the development of our instrumentation. Often installed in harsh working environments, our sensors have been designed to provide rugged, reliable monitoring often with built-in self-checks to assure optimum instrument functionality.

Working in a wide range of applications from heavy industries such as power, minerals and steel to complex processes in the chemical and food industries, our instrumentation for the monitoring of powder, dust and gas help to make processes more reliable and more cost efficient.
WHATEVER INDUSTRY, WE WORK IN

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 highly effective production
• Meeting new regulatory demands and developments for environmental protection whilst driving operating costs down

FOOD
= Coffee
= Milk powder
= Sugar
= Animal / pet food
= Cereals
= Pectin
= Grain
= Tobacco
= Beverages
= Flour
= Starch

WOOD
= Insulations
= Floors
= Chipboards
= Pulp & paper
= Celluloses
= Fibers and additives
= Particleboards
= Timber products

ENERGY
= Coal
= Biomass
= Gas
= Bio fuels
= Oil

INCINERATION
= Clinical
= Chemical
= Crematoria
= Municipal
The examples below show some typical solutions, by industry

**INCINERATION**

1. Point level detection in charging chute
2. Mass flow measurement of absorbent
   - Coke, lime
   - Activated carbon
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. Single baghouse outlet monitoring
8. Predictive bag filter row monitoring
9. Process gas monitoring
   - Combustion optimization (CO, O₂)
   - Acids abatement (HCl, NOx, SO₂, (CO, O₂, H₂O))
   - Mercury & heavy metals abatement
   - NOx abatement control (NO, NH₃ if SNCR)
10. Process leakage detection
    - Particulate leakage detection
    - Odors & process gas leakage detection (VOCs, NOx, SO₂, CO, CO₂, O₂, H₂O, Hg, TOC, PCDD/F, dust and flue gas velocity)
11. Stack compliance measurement: NH₃, HCl, HF, NOx, SO₂, CO, CO₂, O₂, H₂O, Hg, TOC, PCDD/F, dust and flue gas velocity
**POWER GENERATION**

1. Flow rate measurement for pulverized fuel
2. Ash level detection at filter outlets
3. Filter efficiency monitoring
4. Predictive bag filter row monitoring
5. Process gas monitoring:
   - CO, O₂, NOx
   - NOx, NH₃
   - SO₂, O₂
6. Stack compliance measurement:
   - NOx, SO₂, CO, CO₂, O₂, NH₃, HCl, HF, H₂O, Hg, TOC, PCDD/F, dust and flue gas velocity
7. Process leakage detection:
   - CO, CO₂, VOCs, SO₂, TRS, particulates
Mass flow measurement out of spray dryer
Continuous moisture measurement in fluidized-bed dryer
Mass flow measurement for inline blending
Flow/NoFlow detection in return powder lines
Primary filter performance monitoring
Compliance dust measurement trending
Process leakage detection: CO, CO₂, VOC, NO₂, H₂S, SO₂, TRS, particulates
Additional monitoring: odor detection, gas purity control
**CARBON BLACK**

1. Flow/NoFlow detection at filter outlets
2. Flow measurement after pelletizer
3. Continuous moisture measurement after dryer
4. Process gas monitoring: CO, O₂
5. Predictive monitoring of bag row failure
6. Final stack emissions compliance monitoring: CO, CO₂, SO₂, NOx, H₂O, O₂, CH₄, VOC, dust and flue gas velocity
7. Wet FGD stack dust emissions measurements
8. Mass flow measurement of carbon black to silos
9. Process leakage detection: CO, CO₂, NH₃, SO₂, VOC, particulates
1. Continuous mass flow measurement of mill reject
2. Flow trending in air slides
3. Flow/NoFlow detection on cyclones
4. Process gas monitoring: NOx, CO, O₂, SO₂, Hg, H₂O, flue gas velocity
5. Mass flow and velocity measurement of coal into kiln
6. Continuous moisture measurement of secondary fuel
7. Baghouse chamber performance monitoring
8. Predictive bag filter row monitoring
9. Filter performance monitoring
10. Silo baghouse performance monitoring
11. Continuous level measurement in storage silos
12. Gas combustion monitoring: CO, O₂
13. Stack emissions compliance: HCl, SO₂, CO, CO₂, NOx, H₂O, O₂, VOC, PCDD/F, Hg, flue gas velocity and dust
14. Process leakage detection: SO₂, VOCs, NOx, Hg, particulates
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 Electro-filter efficiency monitoring
9 Process gas monitoring:
   - CO, O₂
   - NH₃ (if SCR)
10 Stack emissions compliance monitoring:
   - CO, SO₂, NOx, H₂O, NH₃, CO₂, O₂, CH₄, VOC,
     dust, temperature and flue gas velocity
11 Process leakage detection:
   - VOC, CO, CO₂, HF, HCl, NH₃, SO₂, particulates
1. Flow measurement after intake and cleaning
2. Flow/NoFlow detection of flow into roller mills
3. Continuous moisture measurement after conditioning
4. Particle size monitoring
5. Continuous level measurement in storage silos
6. Silo baghouse performance monitoring
7. Baghouse chamber performance monitoring
8. Compliance dust emission measurement
9. Process leakage detection: CO₂, NH₃, SO₂, CH₄, particulates
ENVEA manufacture an unrivalled range of monitors for powder, granulates and dust to meet the continued demands of industrial processes. Our instruments help you to better understand and control your process to increase efficiency and product quality.

With almost 25 years of experience, ENVEA has achieved extensive knowledge in use of sensors for the measurement of flow, level, moisture, concentration, velocity and particle size. We employ the latest ground-breaking microwave and electromagnetic technologies.

**FLOW MEASUREMENT AT LOW AIR/SOLID RATIOS**

**PicoFlow**

Electrodynamic flow sensor for the measurement of low flow rates from 0 to 100 kg/h.

For pipe diameters up to 1 m.

Ideally used in leanphase conveying.

In free fall conditions with at least 2 m/s drop speed.

- suitable for very low concentrations
- ceramic coating prevents sensor wear

**SolidFlow 2.0**

Microwave sensor for online mass flow measurement of solids up to 20 t/h.

Used in pneumatic leanphase conveying or vertical free fall after mechanical feeders.

- easy assembly via weld-on socket
- for almost all types of dust, powders and granules
- latest technology with active roping compensation
- suitable for nearly all pipe diameters

**POWDERS**

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**Measurement of low flow rates from 0 - 100 kg/h**

**Measurement for flow rates up to 20 t/h**

**IDEALLY USED IN LEANPHASE CONVEYING**

**MOUNTED ON A VERTICAL FREE FALL AFTER FEEDER**
ELECTROMAGNETIC FLOW MEASUREMENT

MaxxFlow HTC

Electromagnetic flowmeter, designed to measure bulk material flows up to 300 t/h.
The meter has no mechanical parts in the flow, is 100% dustproof and erosion free because of ceramic inner pipe.
- arbitrary mounting position (inclined/free fall)
- low headroom required
- easy to calibrate

FLOW MEASUREMENT FOR DENSEPHASE CONVEYING

DensFlow

Designed to measure solid flows during pneumatic densephase transport. The sensor measures density and speed.
- no wear because of ceramic inner pipe
- standard version up to 25 bar

Also available as a high pressure version up to 110 bar.

FLOW MEASUREMENT IN AIR SLIDES

SlideControl 2.0

Microwave sensor for contactless monitoring of material flow in air slides.
- easy to install
- easy to retrofit
- gives trending information by 4 - 20 mA output
- immediate alarm when flow is interrupted

Flow measurement up to 300 t/h

Flow measurement in densephase conveying lines

EASY TO RETROFIT ON EXISTING AIR SLIDES

MEASUREMENT AFTER MECHANICAL FEEDING SYSTEMS

INSTALLATION IN PIPE DIAMETERS UP TO 150 MM
FLOW/NOFLOW DETECTION

FlowJam & FlowJam S

Microwave detector for contactless monitoring of material flow (Flow/NoFlow).
Reliable sensor insensitive to deposits or build-up of material.
- with adapters suitable up to 1000 °C and 20 bar pressure
- as compact version or with separate electronics
- FlowJam S with 4 - 20 mA output

FLOW DETECTION ON FLEXIBLE PIPELINES

FlowJam T

Triboelectric sensor for powder flow monitoring in thin pipelines for small quantities.
The sensor can be used for tubes made of electrically non-conductive material, such as plastic or rubber, with outside diameters between 4 and 25 mm. It is mounted around the pipe for.
- easy to retrofit
- compact device
- free cross section

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INSTALLATION ON PNEUMATIC OR GRAVITY CONVEYING LINES

INSTALLATION ON A FREE FALL CHUTE

SUITABLE FOR PIPELINES WITH OUTER DIAMETER: 4 - 25 MM
POINT LEVEL DETECTION

ProGap 2.0

Microwave barrier for contactless detection of dry bulk solids in containers or chutes. Reliable fill level and limit level detection.
- with adapters suitable up to 1000 °C and 20 bar pressure
- 25 m measuring range

POINT LEVEL WITH COMBINED FILL FLOW DETECTION

ProGap 2.0-BS

Microwave barrier for contactless detection of dry bulk solids in containers or chutes. Reliable fill level and limit level detection.
- with filling signal recognition
- indicates level and material flow
- separated version enables installation in positions difficult to access

CONTINUOUS LEVEL MEASUREMENT

Nico 120

80 GHz-Radar sensor for measuring the level of material in silos and containers.
Available for silos up to 120 m high. Can be used with a wide variety of materials, regardless of the particle size or composition of the material.
- maintenance-free operation through non-contact measuring principles
- reliable measurement independent of vapour, dust and noise

Detection of Max and Min level

Detection of Max and Min level plus flow

Continuous level measurement with excellent precision

INSTALLATION ON A CHUTE FOR MIN LEVEL DETECTION

INSTALLATION ON A CONTAINER

INSTALLATION FOR LEVEL MEASUREMENT IN SILOS
CONTINUOUS MOISTURE MEASUREMENT
M-Sens 3 & M-Sens WR2

Sensors for continuous moisture measurement on conveyor belts, screw feeders or hoppers. Two types of sensor technology to cover a wide range of applications. Both sensors penetrate the product for most reliable measurements. Microwave based sensor for high resolution and accuracy.
- up to 120 °C, respectively 190 °C
- highly resistant to abrasion
- integrated temperature reading
- flow detection function
- EX version available

CONTINUOUS VELOCITY MEASUREMENT
SpeedFlow 2.0

Especially designed for continuous measurement of velocity of solids and particles such as granulates, powders and dusts, which are transported in free fall or in pneumatic transport. Uses triboelectric correlation technology.
- plug-in sensor for easy retrofit
- no calibration required

PARTICLE SIZE MONITORING
Paddy

Paddy has been developed to supply trending information on material granulation. Measures changes in particles, for instance, to detect screen breaks. Not sensitive to contamination and works without the need for a bypass. Can be used in pneumatic conveying by use of a venturi section or in vertical free fall conditions.

Continuous trending of granulation
UNDERSTANDING YOUR PROCESS AND HELPING YOU TO IMPROVE
ENVEA manufacture an unrivalled range of particulate monitors to meet the broad needs of particulate emitting industries worldwide and the requirements of national and international regulations. Based on this groundbreaking range of approved particulate monitors, ENVEA’s instruments allow end users to improve emissions to the atmosphere also better understand and measure their particulate emissions to achieve cost savings (in terms of reduced filter maintenance) and reduce production downtime.

**QUANTITATIVE NETWORKED MEASUREMENT SYSTEMS**

**STACK 990**

ENVEA’s range of networked electrodynamic dust monitors includes the STACK 990 which provides an integrated solution for the monitoring of multiple baghouses. Transferring data from and supplying power to the sensors via a single network cable, these calibratable instruments provide remote real-time observation and access to logged historical data.

The multi-lingual controller features a large full-colour display and is capable of handling up to 32 channels.

**DM 170**

Compact and stand alone, the DM 170 utilises Back Scatter Technology to provide monitoring of particulate after Electrostatic Precipitators (ESP’s) and applications that do utilise a filter. Particularly suitable for very low or very high particulate concentrations or for abrasive/corrosive flue gases, it can be used either for stack monitoring or as a fault monitoring device between primary filter and secondary bag filters.
COMPACT FILTER LEAK MONITORS

LEAK ALERT 73/75/80

The LEAK ALERT range provides a scalable output to enable calibration in mg/m³. Available both as approved Leak and Measurement instruments to BImSchV 27 Class complete 2 and 3 (EN 15859) and designed to meet US ASTM D 7392-07 for Bag Leak Detectors they come complete with inbuilt sensor health checks, short circuit and drift (zero and span) to assure instrument functionality. The LEAK ALERT range provides a rugged and reliable solution to filter performance monitoring.

MULTI-CHAMBER FILTER MONITORING

LEAK LOCATE 320 Plus

To understand where in the filter wear is happening before breaches in environmental limits are reached. Provides plant operators with a host of benefits.

The LEAK LOCATE 320 monitors up to 32 compartments per controller, allowing each chamber of a large multi-chamber baghouse to be continually monitored to determine any deterioration of the filter elements at both compartment and row level. These systems allow preventive maintenance procedures to reduce unplanned filter outages and maintenance times.

DUST MEASUREMENT WITH SEPARATE ELECTRONICS

ProSens

For those who prefer to interrogate and configure their sensor remotely this controller-based monitors provides reliable and robust monitoring of particulate dust levels and leaks from faulty bag media.

The sensor, installed after the baghouse, amplifies and analyses the dust signal and communicates a secure digital signal to the remotely located control unit, where instrument set-up, local graphical display and both digital and 4 - 20 mA output signals are provided.

Calibratable sensor with remote configuration

Control and localisation of multi-chamber filter leaks

Separate version for continuous dust measurement

Detecting deterioration of filter bags

Calibratable and EN 15859 approved
CONTROLLER BASED GROSS FILTER FAILURE INSTRUMENT
DUST ALARM 40

This two-piece controller based system features an Icon Driven colour display to facilitate the easy setup of the remote sensor and observation of filter trends and alarms. This design eliminates the need for operators to access the sensor, which may often be installed in difficult to reach locations.

Available with twin configurable alarms and a 4 - 20 mA output, the DUST ALARM 40 provides easy remote observation of filter performance.

GROSS FILTER FAILURE DETECTOR WITH TRENDING
Dusty C

This standalone sensor in addition to a fast filter failure detection with high accuracy and its configurable alarm, also features a 4 - 20 mA output to allow the remote observation of filter trends when connected to the sites Digital Acquisition System.

Dusty C is also an easy to install and easy to setup sensor.

GROSS FILTER FAILURE DETECTOR
Dusty

Dusty provides a simple solution to quickly identify failure of a fabric filter bag houses, cartridge filters or cyclones. Ideally suited to applications from < 1 mg/m³. Dusty is an easy to install and easy to setup sensor that provides an immediate user configurable alarm in the case of filter failure.

Reliable broken bag detection

Also available for high temperatures

Easy commissioning (Plug & Play)

BROKEN BAG DETECTION WITH EXTERNAL DISPLAY

COMPACT SENSOR FOR BROKEN BAG DETECTION

SIMPLE BROKEN BAG DETECTION
Ease of access to emissions data from sources plant-wide is vitally important. ENVEA’s cloud-based software is a powerful and customizable software suite for displaying, analysing and reporting data from control units.

For multi-row and multi-chamber bag-house operators, the Predict software modules allow failing filter elements to be located and replaced before gross filter failure occurs, enabling scheduled preventative maintenance and minimized process down-time.
ENVEA operates in almost all stages of industrial processes. In addition to dust and powder measurement, gases are important to monitor and measure in order to keep the process running at an optimal rate. We offer a complete range of products that will help you to control and manage your process.

With our comprehensive range of sampling systems and gas analysis technologies, we are able to offer you the measurement system according to your specifications and requirements in order to maintain the high performance of your industrial processes.

PORTABLE NDIR-GFC MULTIGAS ANALYZER

MIR 9000P

The MIR 9000P belongs to the new generation of ENVEA gas analyzers, offering an IoT design, eco-friendly with embedded intelligence.

It measures 8 gases simultaneously: NOx, SO2, CO, CO2, CH4, N2O, O2 and residual H2O.

Designed to meet the specific requirements of on-site regulatory emissions measurements.

It guarantees the user superior mobility, robustness, accuracy and compliance with standards.

VOC ANALYZER

Graphite 52M

Uses the reference method for continuous measurement of HCT/HCNm/CH4, "Hot extraction" technology, requiring no sample processing.

One of the sole QAL 1 certified FID analyzers on the market, also available in a transportable version for the measurement of THC or simultaneous THC, nmHC & CH4.

Perfectly adapted for online measurements on single or multi-compartment VOC treatment systems, installed in series or in parallel.

Superior mobility, accuracy and efficiency

Ideal for wet and corrosive process conditions

ONLINE GAS MONITORING WITH SUPERIOR MOBILITY

MONITORING OF COMBUSTION GASES ON INDUSTRIAL FURNACE
MULTI-GAS NDIR-GFC ANALYZER

MIR 9000e

Eco-designed, ultra-compact, intelligent and connected instrument, the MIR 9000e is your next tool for continuous flue gas measurement of industrial boilers or furnaces and process applications. Simultaneous measurement of up to 8 gases: NOx, SO2, CO, O2, residual H2O, CO2, CH4 et N2O (greenhouse gases). Extremely compact, it guarantees an easy integration in virtually all analysis rack benches on the market.

TUNABLE DIODE LASER (TDL) TRACE ANALYZERS

LAS 300 XD

Ideal for selective measurements of gases such as ammonia NH3, acids as HCl, HF and CO, H2O or even the O2 when the conditions are too extreme for zirconia sensors. Features and benefits:
• latest TDL Absorption Spectroscopy Technology
• robust, contactless and highly accurate, unaffected by gas contaminants
• exceptional range from 100 ppb to % level readings depending on the model
• Perfectly suited to harsh and corrosive environments.

ADVANCED DIGITAL MULTI-GAS ANALYZER

MIR 9000H / MIR IS

Multi-gas analyzer for measurement in hot and humid sampling of: HCl, HF, NH3, NO, NO2, N2O, SO2, CO, H2O, CO2 and O2 and H2O. It provides up to 4 gas stream measurements. Features and benefits:
• air ejector sampler embedded to get robustness for harsh flue gas mixtures
• advanced digital communications including Ethernet and Modbus

GAS ABATEMENT MONITORING OF MULTIPLE GASES

COMBUSTION, DeSOx / DeNOx PERFORMANCE

CROSS DUCT, INLINE COMBUSTION MONITORING

Measurement before or after the scrubber

In-situ measurements, in the heart of the process

Designed for combustion and process applications
Trace elemental analysis is a set of important analytical techniques in the field of health, environmental analysis, metallurgy as well as in the food and pharmaceutical industries. Thanks to their different measurement technologies, ENVEA’s eco-designed e-series analysers allow for continuous measurement of very low gas concentrations in a very wide range of gas samples.
Air quality monitoring is essential for local authorities and industries to understand and prevent air pollution and assess emission sources in order to protect health and contribute to the fight against the greenhouse effect.

Your facilities and equipment can cause fugitive emissions and leakages, resulting in environmental pollution and financial losses for your business. We offer a wide range of gases and particulate monitors, that will allow you to detect any pollution in real time. They will help you ensure the safety of your employees, locate and reduce odor emissions and air pollutant fallout related to your sector.

**AirSafe 2**

AirSafe 2 is a measuring instrument for monitoring the dust concentration in ambient air, for example in control system areas, silo areas, boiler houses or work stations. It monitors concentrations on the basis of preset limit values.

For example, to avoid the accumulation of dust in explosion zones or to detect unnoticed accumulation of dust from processes.

AirSafe 2 can be used as early detection for dust which could endanger the workplace.

**Cairnet® & Cairprocess**

Embedded in autonomous and wireless stations (solar panel and battery), Cairnsens® micro-sensors allow the monitoring of toxic or odorous gases emissions from an industrial installation.

- Cairnet®: turnkey mini-station for real-time air quality surveillance and data centralized in the Cloud
- Cairprocess: ready to use solution for the control of deodorizing systems and compost storage areas.
EXTRACTIVE TDLAS GAS ANALYZER

LAS 300 RK

High precision measurements of selective compounds such as: HF, HCl, NH₃, O₂, NO, CO and H₂O. Other gases on request.
Ideal for applications which require reliable and specific measurements, this gas monitor is suitable for monitoring ppb and ppm concentrations in emissions, ambient air or process monitoring. It uses rapid laser tuning and direct absorption spectroscopy to achieve very stable results.

ALL-IN-ONE PORTABLE REAL-TIME Hg MONITOR

Mercury Tracker-3000 XS

Very small, ultra-light, with on-board GPS, data logger, battery pack and color TFT display for very comfortable and easy mercury monitoring in ambient air and other gases.
Portable mercury monitoring and detection is made easy with the Mercury Tracker-3000 XS.
Lightweight, rugged construction and compact, the instrument is perfect for screening the concentration of mercury in the air.

VOCS, BTEX, THC, CH₄, nmHC MONITORING

VOC72e / HC51M

Fugitive emissions of Volatile Organic Compounds (VOCs) are leakages that appear at the sealing elements of equipment such as valves, pumps, compressors, flanges, fittings, etc.
Their control represents a considerable challenge in terms of Safety, Health and Environment, allowing to reduce explosive atmospheres (ATEX), CMR gas emissions, to reduce the impact on the ageing of installations and improve productivity.

MERCURY LEAKAGE DETECTION

Light, compact and efficient. All in one!

FAST RESPONSE LEAK DETECTION

Suitable for ambient air, process and emissions measurements

VOLATILE ORGANIC COMPOUNDS LEAKAGES

Health, safety & environment plus economical benefits
CLOUD-BASED MONITORING & ANALYSIS

IoT and the digitization of plants and plant components is one of the upcoming topics in process automation and the processing of measurement data in general. The ENVEA Group with its systems for data acquisition is pioneering in this field already today. Beside the transmission of measured values to the existing control system we are opening another communication channel, namely the transmission of as much data from IoT-enabled sensors into a cloud.

To receive real-time sensor measurement data into a cloud is a big step forward for any plant, but with ENVEA you can take the next step and utilise that data to predict, monitor and respond early to issues such as filter leaks and process performance. Plants can use measurement data to be pre-emptive and proactive, performing maintenance not to replace broken filter bags but to avoid broken bags and costly plant shutdown or loss of product.

The basic set up consists of this solution is the ENVEA sensor or measurement device connecting to a controller which in turn connects to the cloud. The software in the cloud then displays the measurements in actionable and reportable formats.

In addition to new ENVEA products, which will have networked and cloud-based functionality, ENVEA can upgrade an existing sensor and controller system to enable cloud-based data acquisition and analysis.
OUR SOLUTIONS ADAPT TO YOUR NEEDS
We design and produce a complete range of state of the art analyzers, sampling systems, data acquisition systems and software for the measurement & reporting of pollutants such as: HCl, SO₂, NO, NOₓ, N₂O, CO, CO₂, CH₄, THC, nmHC, NH₃, HF, H₂S, TRS, O₂, H₂O, temperature, flue gas velocity, pressure, particulates, mercury, dioxins...

With decades of industrial experience, our systems are designed and developed as a complete turnkey solution. From sample extraction, through analysis, data acquisition and report management, each system is configured to comply to the normative demands and technical constraints of our clients, no matter the industrial domain:

- Waste-to-energy plants
- Combustion
- Power plants
- Gas turbines
- Biomass
- Glass industry
- Cement plants
- Pulp mills
- DeNOₓ (SNCR, SCR)
- Boilers & industrial furnaces
- Process control
- Metal, steel, petrochemical, chemical industries...
SUPPORT & SERVICES

Improved plant performance through close partnership

ENVEA’s global structure enables a close local approach to our customer relationships. Internal technical training provided by specialists and technical experts is available all over the world and our engineers work to fully understand your process. A close partnership with our clients improves their processes, whatever the location or industry.

The Technical Support Services Team, with its worldwide presence of experts, brings experience from a wide range of applications and industrial sectors ensuring that systems are set-up, operated and maintained to maximize functionality for their intended purpose.

Utilizing our commissioning services allows you to ensure a proper commissioning of your process instrumentation. Especially during start-up of your process this ensures that everything runs smoothly and customers have access to all specific skills needed.

Regular calibration and maintenance of the instruments is essential to get reliable information for controlling your process, especially for quality critical processes. ENVEA has a global network, providing cost effective on site services.

Training programs are customized and will specifically adhere to your company’s particular needs, whether you require instruction for one individual or a group. All training options are designed to be conducted in a classroom, on-site or in a factory setting.

We can help you run your installation as efficiently and smoothly as possible.
# RECAP TABLE

<table>
<thead>
<tr>
<th>Function</th>
<th>Range</th>
<th>Pressure max.</th>
<th>Temperature max.</th>
<th>Velocity</th>
<th>Output</th>
<th>Accuracy</th>
<th>EX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PicoFlow</strong></td>
<td>Flow measurement</td>
<td>&gt; 1 g/min</td>
<td>2 bar</td>
<td>150 °C</td>
<td>Min. 2 m/s</td>
<td>± 2-5%</td>
<td>Zone 0/20</td>
</tr>
<tr>
<td><strong>Solidflow 2.0</strong></td>
<td>Flow measurement</td>
<td>&lt; 20 t/h</td>
<td>1 bar optional 10 bar</td>
<td>80 °C (optional 900 °C)</td>
<td>-</td>
<td>4-20 mA, Modbus, optional Profibus</td>
<td>± 2-5%</td>
</tr>
<tr>
<td><strong>MaxxFlow HTC</strong></td>
<td>Flow measurement</td>
<td>&gt; 1 t/h</td>
<td>2 bar optional 10 bar</td>
<td>120 °C</td>
<td>-</td>
<td>± 1-3%</td>
<td>-</td>
</tr>
<tr>
<td><strong>DensFlow</strong></td>
<td>Flow measurement</td>
<td>Custom-made</td>
<td>25 bar optional 110 bar</td>
<td>120 °C</td>
<td>1-50 m/s</td>
<td>± 2-5%</td>
<td>-</td>
</tr>
<tr>
<td><strong>DensFlow HP</strong></td>
<td>Flow measurement</td>
<td>Custom-made</td>
<td>110 bar</td>
<td>-20 to +130 °C</td>
<td>± 1-3%</td>
<td>± 2-5%</td>
<td>-</td>
</tr>
<tr>
<td><strong>SlideControl 2.0</strong></td>
<td>Flow monitoring</td>
<td>Custom-made</td>
<td>1 bar optional 20 bar</td>
<td>-20 to +80 °C</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>FlowJam</strong></td>
<td>Flow detection</td>
<td>-</td>
<td>20 bar</td>
<td>1000 °C</td>
<td>No limit</td>
<td>Relay</td>
<td>-</td>
</tr>
<tr>
<td><strong>FlowJam S</strong></td>
<td>Flow detection</td>
<td>-</td>
<td>20 bar</td>
<td>1000 °C</td>
<td>No limit</td>
<td>Relay</td>
<td>-</td>
</tr>
<tr>
<td><strong>FlowJam Plus</strong></td>
<td>Flow detection</td>
<td>-</td>
<td>20 bar</td>
<td>220 °C</td>
<td>No limit</td>
<td>Relay</td>
<td>-</td>
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<tr>
<td><strong>FlowJam T</strong></td>
<td>Flow detection</td>
<td>-</td>
<td>Independent</td>
<td>60 °C</td>
<td>No limit</td>
<td>Relay</td>
<td>-</td>
</tr>
<tr>
<td><strong>ProGap 2.0</strong></td>
<td>Level detection</td>
<td>-</td>
<td>20 bar</td>
<td>1000 °C</td>
<td>-</td>
<td>Relay</td>
<td>-</td>
</tr>
<tr>
<td><strong>ProGap 2.0-BS</strong></td>
<td>Level detection</td>
<td>-</td>
<td>20 bar</td>
<td>1000 °C</td>
<td>-</td>
<td>Relay</td>
<td>-</td>
</tr>
<tr>
<td><strong>Nico 120</strong></td>
<td>Level monitoring</td>
<td>Up to 120 m</td>
<td>1 bar / 1 bar</td>
<td>120 °C (WR2: 190 °C)</td>
<td>-</td>
<td>4-20 mA, Modbus, optional Profibus</td>
<td>± 0.1%</td>
</tr>
<tr>
<td><strong>M-Sens 3/2/WR2</strong></td>
<td>Moisture measurement</td>
<td>0-65% (WR2: 85%)</td>
<td>Residual moisture</td>
<td>10 bar / 1 bar</td>
<td>± 0.1%</td>
<td>± 0.1%</td>
<td>-</td>
</tr>
<tr>
<td><strong>SpeedFlow 2.0</strong></td>
<td>Velocity measurement</td>
<td>0.75-35 m/s</td>
<td>1 bar (Pipe version max 100 mbar)</td>
<td>80 °C (optional 120 °C)</td>
<td>± 1%</td>
<td>± 1%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Paddy</strong></td>
<td>Particle size monitoring</td>
<td>Particles up to 10 mm</td>
<td>1 bar optional 10 bar</td>
<td>80 °C</td>
<td>-</td>
<td>4-20 mA, Modbus, optional Profibus</td>
<td>± 2-5%</td>
</tr>
</tbody>
</table>

## Particulates

<table>
<thead>
<tr>
<th>Function</th>
<th>High dust (Purge options)</th>
<th>Networking</th>
<th>Data-logging</th>
<th>Auto self check (20 &amp; span)</th>
<th>Auto contamination check</th>
<th>Condensing (Passive section)</th>
<th>Humidity (Insulated probe)</th>
<th>Corrosive (Acid adapters)</th>
<th>Temperature</th>
<th>EX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STACK 990</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Up to 800 °C</td>
<td>Inside: Zone 2, Outside: Zone 20</td>
</tr>
<tr>
<td><strong>DM 170</strong></td>
<td></td>
<td>Manual</td>
<td>Manual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Up to 400 °C</td>
<td>Zone 2 / 22</td>
</tr>
<tr>
<td><strong>Leak Locate 320</strong></td>
<td>✓</td>
<td>✓</td>
<td>Manual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Up to 250 °C</td>
<td>Outside: Zone 22</td>
</tr>
<tr>
<td><strong>Leak Locate 662</strong></td>
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<td>✓</td>
<td>Manual</td>
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<td></td>
<td></td>
<td></td>
<td>Up to 250 °C</td>
<td>Outside: Zone 22</td>
</tr>
<tr>
<td><strong>Leak Alert 65-02</strong></td>
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<td>Optional</td>
<td>Optional</td>
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<td></td>
<td></td>
<td>Up to 400 °C</td>
<td>Inside: Zone 2, Outside: Zone 22</td>
</tr>
<tr>
<td><strong>Leak Alert 73, 75, 80</strong></td>
<td></td>
<td>Optional</td>
<td>Optional</td>
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<td></td>
<td></td>
<td>Up to 400 °C</td>
<td>Outside: Zone 20</td>
</tr>
<tr>
<td><strong>ProSens</strong></td>
<td></td>
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<td></td>
<td></td>
<td>Up to 500 °C</td>
<td>Inside: Zone 1, Outside: Zone 2</td>
</tr>
<tr>
<td><strong>Dust Alarm 40</strong></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td>Up to 250 °C</td>
<td>Inside: Zone 2, Outside: Zone 22</td>
</tr>
<tr>
<td><strong>Dusty C</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Up to 140 °C</td>
<td>Zone 2 Zone 22</td>
</tr>
<tr>
<td><strong>Dusty</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>Up to 140 °C</td>
<td>Zone 2 Zone 22</td>
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</tbody>
</table>
### Gas

<table>
<thead>
<tr>
<th>MIR 9000P (mg/m³)</th>
<th>HCl</th>
<th>HF</th>
<th>NO</th>
<th>NO₂</th>
<th>NOₓ</th>
<th>SO₂</th>
<th>CO</th>
<th>CH₄</th>
<th>N₂O</th>
<th>VOC</th>
<th>NH₃</th>
<th>Hg</th>
<th>H₂O (%)</th>
<th>CO₂ (%)</th>
<th>O₂ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-100/1500/5000</td>
<td>0-110/3000/5000</td>
<td>as NO/NO₂</td>
<td>0-141/410/8500</td>
<td>0-60/3000/8000</td>
<td>0-70/700</td>
<td>0-1000</td>
<td>0-2</td>
<td>0-20/30</td>
<td>0-10/25</td>
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</table>

<table>
<thead>
<tr>
<th>GRAPHITE S2M (ppm)</th>
<th>CO2</th>
<th>O2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MIR 9000e (mg/m³)</th>
<th>CO</th>
<th>NO₂</th>
<th>O₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MIR 9000ASD (mg/m³)</th>
<th>CO</th>
<th>NO₂</th>
<th>O₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LAS 300 XD (ppm)</th>
<th>CO</th>
<th>NO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIR 9000H (mg/m³)</th>
<th>CO</th>
<th>NO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>MIR IS (mg/m³)</th>
<th>CO</th>
<th>NO₂</th>
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<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>AC32e (ppm)</th>
<th>CO</th>
<th>NO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CO12e (ppm)</th>
<th>CO</th>
<th>NO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>AF22e (ppm)</th>
<th>CO</th>
<th>NO₂</th>
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</thead>
<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>SM-4 (mg/m³)</th>
<th>CO</th>
<th>NO₂</th>
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</thead>
<tbody>
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### Flue-gas flow

<table>
<thead>
<tr>
<th>StackFlow 100</th>
<th>T &lt; 250 °C</th>
<th>T &lt; 500 °C</th>
<th>Velocity m/s</th>
<th>Water droplets</th>
<th>Baghouse</th>
<th>Cartridge filter</th>
<th>ESP</th>
<th>WESP</th>
<th>Scrubber</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>5-30</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>StackFlow 200</th>
<th>T &lt; 250 °C</th>
<th>T &lt; 500 °C</th>
<th>Velocity m/s</th>
<th>Water droplets</th>
<th>Baghouse</th>
<th>Cartridge filter</th>
<th>ESP</th>
<th>WESP</th>
<th>Scrubber</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td></td>
<td>3-50</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>StackFlow 400</th>
<th>T &lt; 250 °C</th>
<th>T &lt; 500 °C</th>
<th>Velocity m/s</th>
<th>Water droplets</th>
<th>Baghouse</th>
<th>Cartridge filter</th>
<th>ESP</th>
<th>WESP</th>
<th>Scrubber</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td></td>
<td>0-50</td>
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### Ambient air

<table>
<thead>
<tr>
<th>PM</th>
<th>O₃</th>
<th>CO</th>
<th>CO₂</th>
<th>SO₂</th>
<th>Hg</th>
<th>NO₂</th>
<th>VOC</th>
<th>HCl</th>
<th>HF</th>
<th>NH₃</th>
<th>H₂S - CH₄</th>
<th>CH₂O / organic solvents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Airsafe 2</th>
<th>PM</th>
<th>O₃</th>
<th>CO</th>
<th>CO₂</th>
<th>SO₂</th>
<th>Hg</th>
<th>NO₂</th>
<th>VOC</th>
<th>HCl</th>
<th>HF</th>
<th>NH₃</th>
<th>H₂S - CH₄</th>
<th>CH₂O / organic solvents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Cairnet</th>
<th>PM</th>
<th>O₃</th>
<th>CO</th>
<th>CO₂</th>
<th>SO₂</th>
<th>Hg</th>
<th>NO₂</th>
<th>VOC</th>
<th>HCl</th>
<th>HF</th>
<th>NH₃</th>
<th>H₂S - CH₄</th>
<th>CH₂O / organic solvents</th>
</tr>
</thead>
<tbody>
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<td></td>
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<table>
<thead>
<tr>
<th>Tracker 3000 XS</th>
<th>PM</th>
<th>O₃</th>
<th>CO</th>
<th>CO₂</th>
<th>SO₂</th>
<th>Hg</th>
<th>NO₂</th>
<th>VOC</th>
<th>HCl</th>
<th>HF</th>
<th>NH₃</th>
<th>H₂S - CH₄</th>
<th>CH₂O / organic solvents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>LAS 300 RK</th>
<th>PM</th>
<th>O₃</th>
<th>CO</th>
<th>CO₂</th>
<th>SO₂</th>
<th>Hg</th>
<th>NO₂</th>
<th>VOC</th>
<th>HCl</th>
<th>HF</th>
<th>NH₃</th>
<th>H₂S - CH₄</th>
<th>CH₂O / organic solvents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>VOCC72e</th>
<th>PM</th>
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<th>CO</th>
<th>CO₂</th>
<th>SO₂</th>
<th>Hg</th>
<th>NO₂</th>
<th>VOC</th>
<th>HCl</th>
<th>HF</th>
<th>NH₃</th>
<th>H₂S - CH₄</th>
<th>CH₂O / organic solvents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>HC51M</th>
<th>PM</th>
<th>O₃</th>
<th>CO</th>
<th>CO₂</th>
<th>SO₂</th>
<th>Hg</th>
<th>NO₂</th>
<th>VOC</th>
<th>HCl</th>
<th>HF</th>
<th>NH₃</th>
<th>H₂S - CH₄</th>
<th>CH₂O / organic solvents</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

Lowest / highest monitoring ranges, expressed in ppm, mg/m³ or % when indicated. Other ranges available on request.
ENVEA is a leading manufacturer of cutting-edge on-line monitoring solutions for industry, laboratory and local & government institutions.

Faithful to the principles on which it was founded – innovation & quality, ethics & social responsibility, shared values & transparency – the group is committed to providing you with solutions and assistance at the highest standards in order to comply with applicable regulations; as well as the optimization of industrial processes for an improved efficiency, significant savings of raw materials & energy and the reduction of environmental impact.

Our worldwide references guarantee a perfect understanding of your needs and ability to manage a vast range of applications:

More than 40,000 air quality monitors are measuring the pollution of cities worldwide: Barcelona, Seoul, Rio de Janeiro, Istanbul, Mecca, New Delhi, Moscow, Paris, Budapest, Abu Dhabi, Bangkok, Beijing...

Over 30,000 processes & emission sources are monitored worldwide across a broad range of industries such as: chemical, minerals, metal, waste to energy, incineration, food and pharma, engine manufacturers, or wood industry.

Process - Emissions - Ambient Monitoring solutions