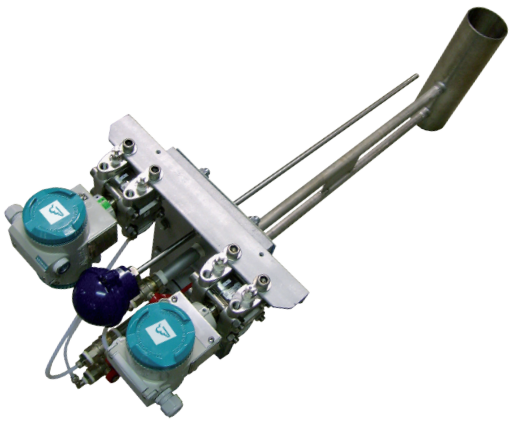
STACKFLOW 100™

Micro-venturi flue gas velocity CEM

PROCESS & EMISSIONS MONITORING SYSTEMS

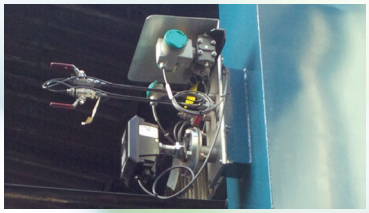
The **STACKFLOW 100**™ is a compact flowmeter for continuous measurement of velocity, temperature and static pressure in exhaust gas ducts (stacks or flue gas ducts) using the Micro-Venturi technology. From these measurements, StackFlow 100™ allows to determine the flue gas volume flow rate via an additional calculation element which is either performed by an ENVEA controller or directly by the CEMS cabinet's data acquisition station. This data is used to calculate the mass flows of the pollutants released (dust, SO_2, NOx...)



SPECIFIC FEATURES:

- Highly accurate and continuous measurement of gas velocity, temperature and pressure
- Clogging with no effect on the measurement, no need for backflushing
- All in one, compact solution with integrated pressure and temperature sensors
- Robust construction, resistant to harsh industrial environments. Handles stack temperatures up to 400°C
- Measuring range: 2-30m/s with an accuracy of less than 10% above 8m/s
- Can be used for stack diameters >300mm
- A single connection port integrated into the NFX flange of the gas sampling ENVEA LCPD Box
- Optional inbuilt gas sampling port for CEMS integration
- Different probe lengths for improved sample representativity & to fit the application
- Standalone sensor or combined with single/multi-channel controllers for enhanced user interface, cost-effective & ease of integration

StackFlow 100™ in usage



Installed in a stack

MAIN APPLICATIONS:

› Flue gas flow monitoring before or after fume treatment
› CEMS in all type of industry
› Process measurements in metallurgy, mineral or chemical industry (refinery / rubber), power generation plants (eg coal / biomass), urban heating networks, etc.

COMPLIANCE WITH:

Compliance with the MCP directive

Micro-venturi flue gas velocity CEM **StackFlow 100™**

PRINCIPLE OF OPERATION:

The **StackFlow 100**™ is a compact device for continuous measurement of velocity, temperature and static pressure in exhaust gas ducts (chimneys or flue pipes) using the Micro-Venturi principle.

Based on these measurements, the StackFlow 100™ can be used to determine the **flue gas volume flow rate** via differential pressure measurement.

This smoke flowmeter uses technology that has been proven in more than 200 installations equipped with devices. It is installed directly on a duct with a diameter of **more than 300 mm** and consists of :

- a probe integrating:
  - a micro-venturi tube
  - a temperature sensor
- a measurement box integrating the sensors of:
  - a static gas pressure
  - a differential gas pressure

All these measuring means are installed on a plate compatible with **NFX 44-052 standard flanges**, with on one hand the flow measurement StackFlow 100™ and on the other hand another flange in DN50 to install another probe such as a dust analyser of the **Electrodynamic**® type or a gas sampling box.

StackFlow 100™ Operating Principle

DTP flange part

LCPD Box flange part

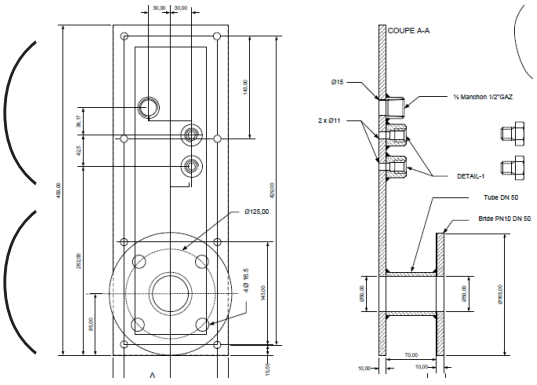


Photo of the venturi alone

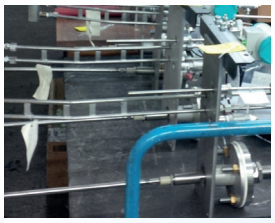


Photo of the board with the sensors and a dust sensor

TECHNICAL SPECIFICATIONS

Measurement Range	3 - 30 m/s
Resolution	0.2 m/s
Units	m/s or ft/s (speed), Nm^3/h
Minimum detectable	2 m/s
Response time	1 second
Linearity deviation	<0.5 m/s from 0 to 30 m/s < 1.5 m/s from 30 to 50 m/s
Zero point drift	0.1 m/s over 30 days
Scale point drift	< 0.3 m/s over 30 days
Probe type	Venturi
Pressure sensors	0-2 bar for absolute measurement 0-25 mbar for relative measurement
Type of temperature sensor	Pt 100 Ω
Maximum smoke temperature	400°C
Maximum dust concentration allowed in the fumes	100 mg/m^3
Standard operating temperature	-20°C to +55°C
Analogue outputs	3 outputs 4-20 mA not galvanically isolated, 24 Vdc power supply in the loop

envea
KNOWLEDGE IN ACTION

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