

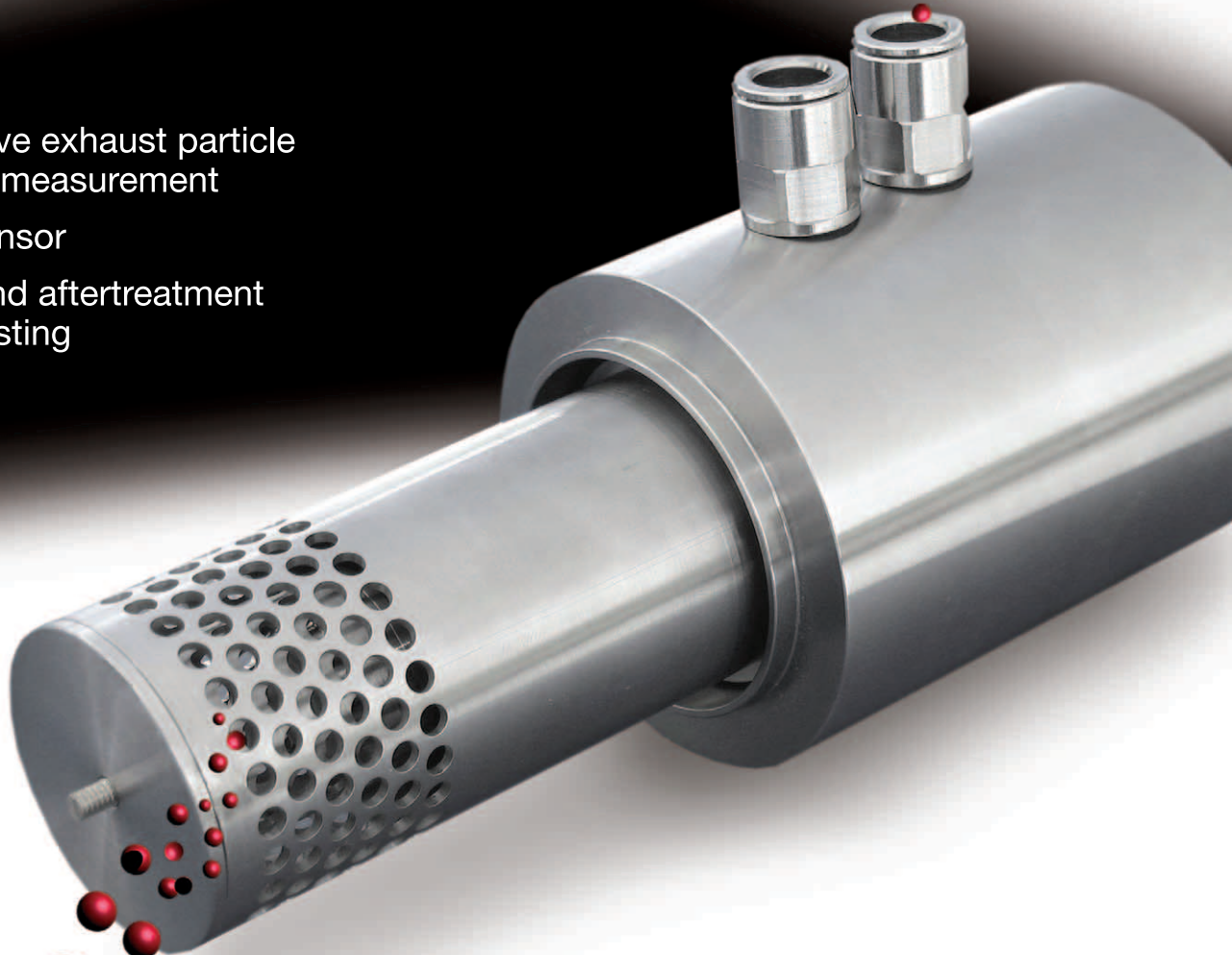
DEKATI ETaPS

Electrical Tailpipe PM Sensor

Automotive exhaust particle
emission measurement

In-situ sensor

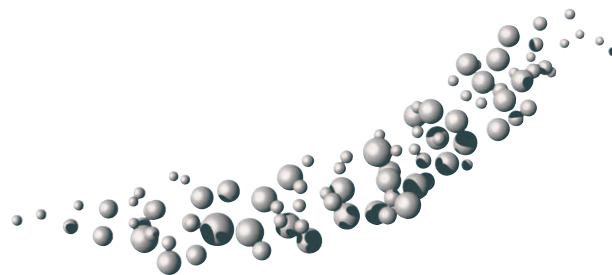
Engine and aftertreatment
device testing



Excellence in Particle Measurements

DEKATI ETaPS

Electrical Tailpipe PM Sensor



Dekati's ETaPS™, Electrical Tailpipe PM Sensor, is an in-situ flow-through particulate matter (PM) sensor for diesel and gasoline engine PM measurements and for monitoring applications.

The sensor is capable of detecting the amount of PM emitted by a diesel or gasoline engine under both steady state and transient conditions. Applications for ETaPS include development and quality control of engines and exhaust aftertreatment devices as well as in-use testing.

ETaPS unique in-situ measurement technology eliminates the need for complex PM sampling and dilution equipment. The resulting benefits include lower costs, minimal power consumption and easy installation for both passenger cars and heavy-duty vehicles.

Operating principle

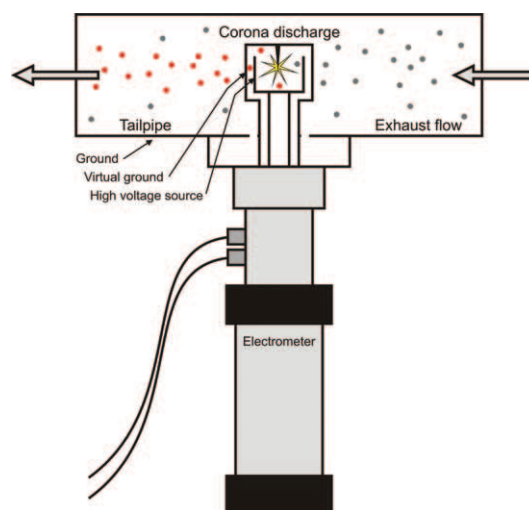
ETaPS is based on the principle of particle charging and electrical detection. When exhaust flow passes through the inner charging chamber, a known amount of charge is attached to all solid and volatile particles. The charge carried by particles leaving the outer charging cage is then measured with a sensitive electrometer. This signal is proportional to the amount of particles emitted by the engine.

This technology provides a rapid response and extremely wide dynamic range, from DPF (diesel particulate filter) equipped vehicles up to high emission levels of old heavy-duty diesel engines. In addition, ETaPS non-collecting flow-through technology results in greatly reduced sensor maintenance and cleaning.

Technical specifications

Operating conditions

Exhaust flow rate	3-60 m/s
Max. temperature	500 °C
Max. absolute pressure	1200 mbar



Installation

Installation pipe diameter	60 and 100 mm adapters provided
Power consumption	12-18V, 500 mA
Output signal	0-10V

Characteristics

Response time (10-90%)	< 0.5 s
Min emission level	0.1 mg/m ³ *)
Max emission level	100 mg/m ³ *)
Sheath air flow	30 lpm
	Pump and flow control not included

*) Depending on the engine and tailpipe size

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Dekati Ltd. is specialized in the design and manufacture of innovative fine particle measuring and sampling devices. Since its founding in 1994, Dekati has become the technological market leader in producing fine particle measurement instrumentation for various applications and hundreds of customers. ●