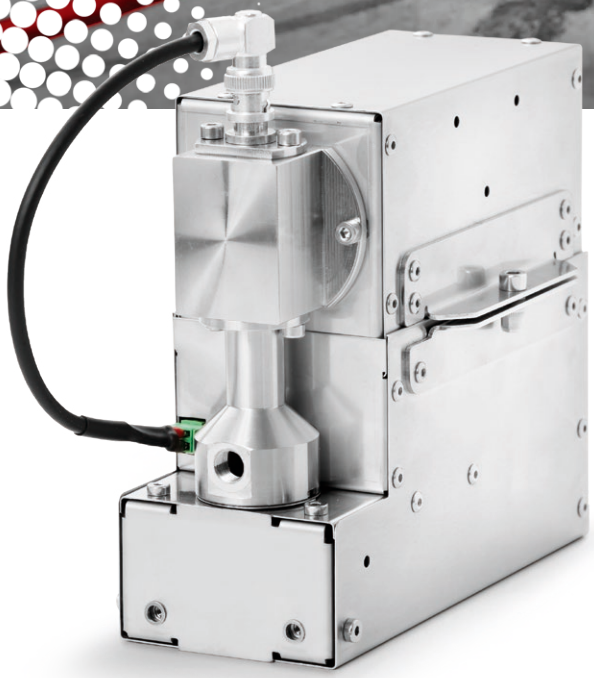
DEKATI
TECHNOLOGIES

Innovations for Industrial Particle Measurements



Dekati® ePNC™

Compact particle number sensor
for regulatory PTI testing

Various integration options

Robust design with consistent performance

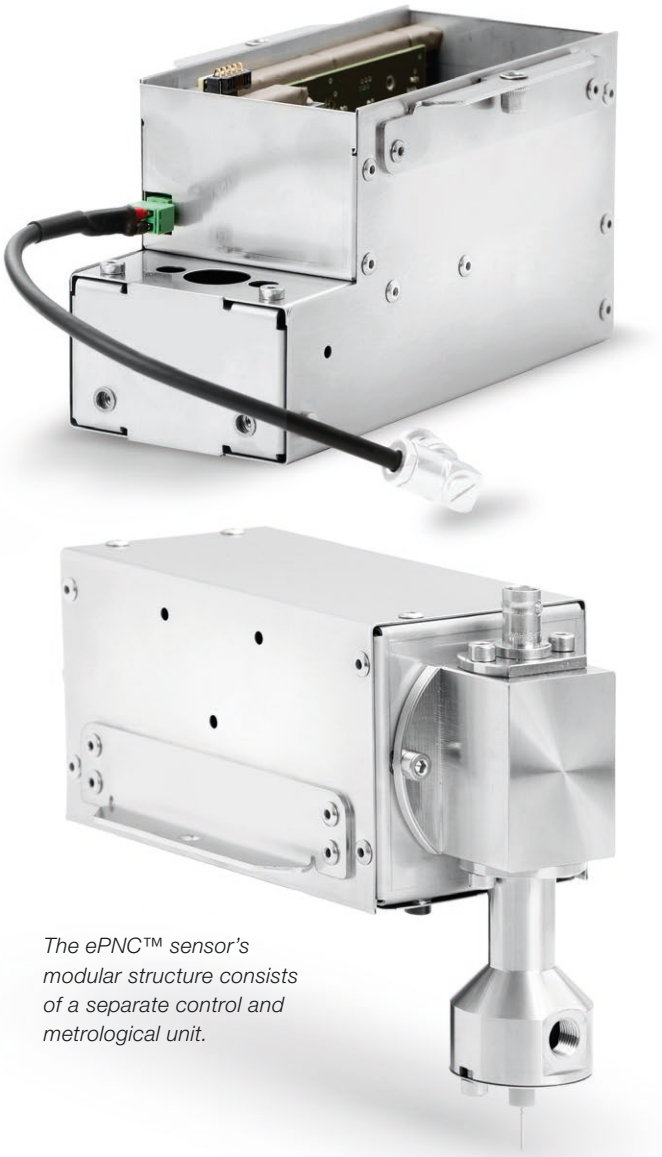
Dekati® ePNC™

The **Dekati® ePNC™** is an innovative particle counter sensor designed specifically for easy integration in Periodic Testing and Inspection (PTI) devices. The sensor fulfils the metrological requirements of Real Driving Emission (RDE) Regulation (EU) 2017/1154, and is thus fully in line with the upcoming requirements for PTI testing in Europe, including requirements set in the Netherlands. The Dekati® ePNC™'s unique design is the result of Dekati Ltd's 25 years of experience in developing instruments for fine particle measurements.

Construction and operation

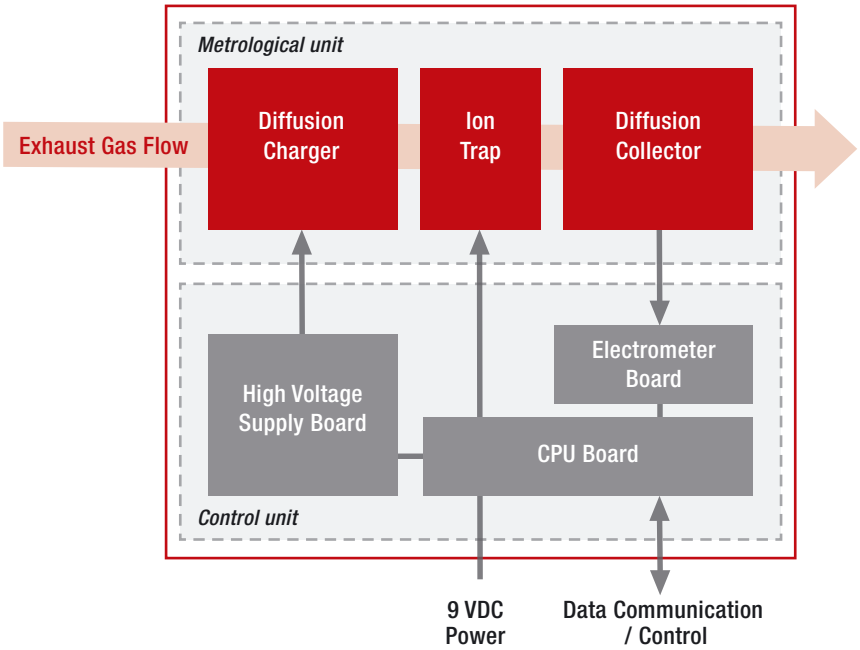
The ePNC™ sensor's compact structure makes device integration simple and straightforward. Its modular structure consists of a separate control and metrological unit. The control unit takes care of the control systems and data communications, whereas the replaceable metrological unit contains the particle measurement system, making service and maintenance easy and cost effective. The ePNC™ sensor performance is consistent and repeatable, even in harsh workshop environments.

The particle counting technology of the Dekati® ePNC™ sensor is based on diffusion charging, diffusion particle collection and electrical detection of collected particles. Its unique, patent-pending low-pressure operation provides an electrical current signal that is directly proportional to the particle number (PN) concentration. For use as a complete PTI particle counter system, the Dekati® ePNC™ is combined with a dedicated sample conditioning system that is designed by Dekati experts to ensure consistent performance in accordance with applicable legislation. Due to its advanced technology and innovative design, the Dekati® ePNC™ sensor is future-proof and can be easily upgraded to comply with forthcoming stricter metrological requirements.



The ePNC™ sensor's modular structure consists of a separate control and metrological unit.

Dekati® ePNC™ sensor module



Construction and operating principle of the Dekati® ePNC™.

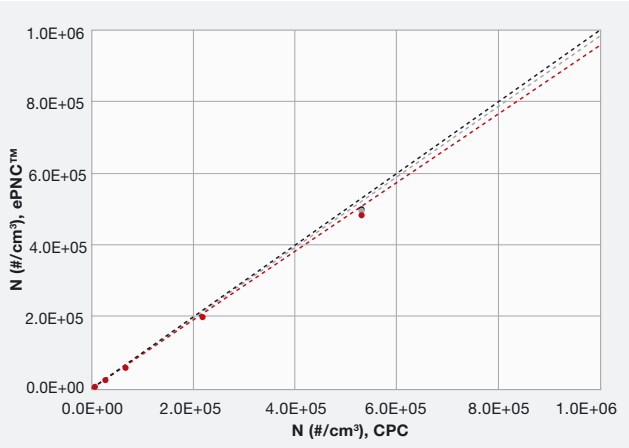
Features

- Particle number sensor for regulatory PTI measurements
- Real-time particle number concentration measurement according to RDE Regulation (EU) 2017/1154
- Direct, transparent measurement of number concentration
- Calibration as per JRC 2018 recommendation EUR 29036 EN
- Innovative, modular design optimized for easy maintenance and low cost of ownership
- Separate units for particle detection and sensor control
- Replaceable pre-calibrated metrological unit reduces annual service down-time
- Accurate and repeatable performance confirmed during extensive lab and field testing
- Consistent operation in long term use
- Low power consumption, ideal for battery-powered devices
- Robust and durable construction for long-term use in workshop environments
- Simple integration into PTI measurement systems
- Easy to customize according specific integration requirements
- Dedicated sample conditioning modules available for complete PTI particle measurement systems

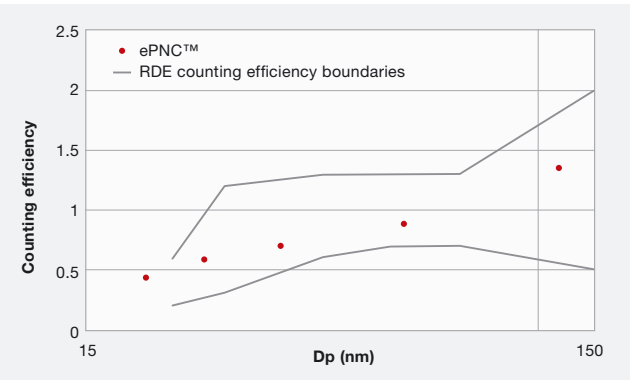
Performance

The Dekati® ePNC™ sensor fulfills all requirements set in the RDE Regulation (EU) 2017/1154 regulation for particle number concentration measurements.

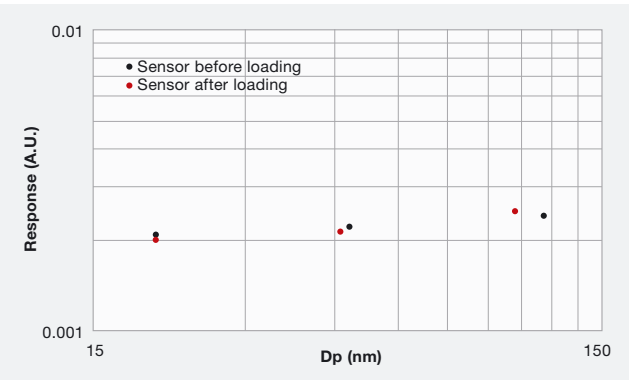
The innovative design of the sensor guarantees minimal effect of particle size on the instrument response and linearity over a wide particle concentration range.



Sensor response vs. CPC number concentration for three different ePNC™ units.

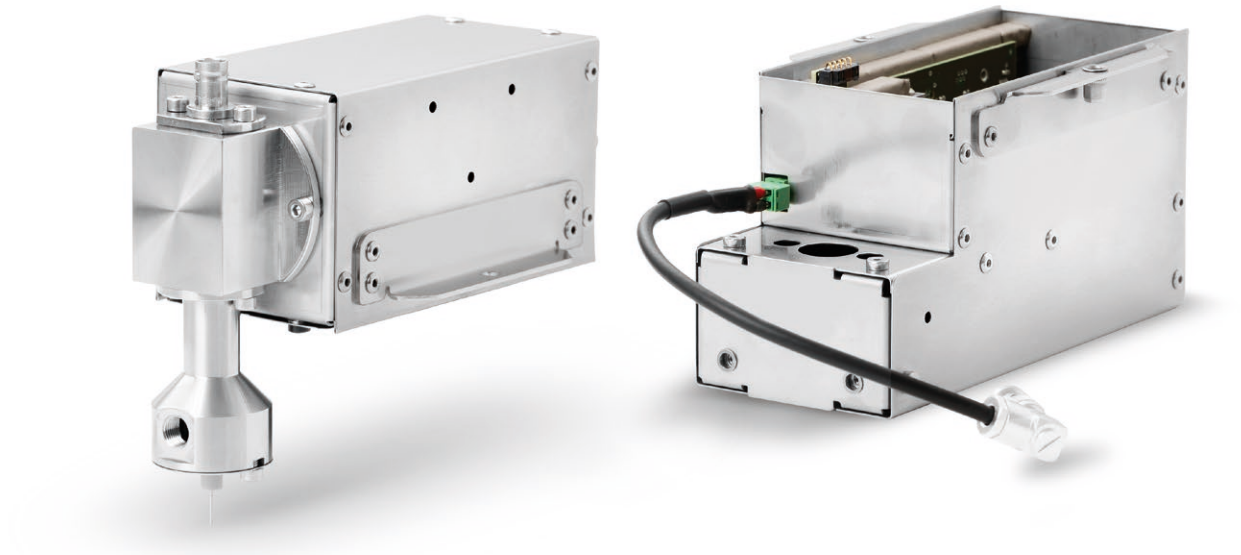


ePNC™ counting efficiency is well within the requirements of the RDE regulation.



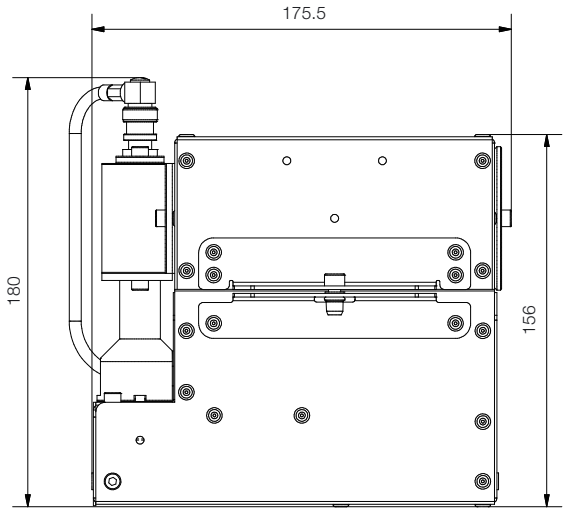
The ePNC™ sensor response stays stable even after continuous long term loading with high concentrations of soot particles.

Dekati® ePNC™

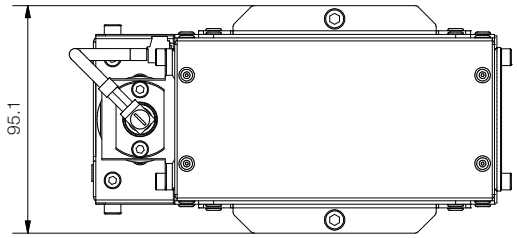


Specifications ePNC-10DN

Sensitivity	1000 #/cm^3
Maximum concentration	1.5 e7 #/cm^3
Sampling interval	1 s
Sample flow rate	1.8 slpm
Counting efficiency	In compliance with RDE Regulation (EU) 2017/1154
Operating conditions	10-50 °C
Weight	2.15 kg
Power consumption	2 W
Operating voltage	9 VDC
Calibration	According to JRC Real Driving Emissions (RDE) technical report EUR 29036 EN
Data communication	RS-232 Serial communication as standard, customized communication protocols available on request



Dimensions in millimeters



DEKATI TECHNOLOGIES

Dekati Technologies is a brand division of Dekati Ltd. specifically focused on particle sensors and particle measurements systems for industrial applications. Dekati's 25-year expertise in particle measurement technologies is used in designing sensors and systems that are reliable, accurate, robust yet cost effective for large scale particle monitoring needs. All systems are designed with various integration options specifically for industrial applications and into customer specific systems.

ISO 9001 BUREAU VERITAS Certification
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