TECH SKANDA
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Model : SSN-SM-1

ARAI APPROVED

SSN TECHNOLOGIES

An ISO 9001 : 2015 Certified Company

[Manufactures of Vehicle Pollution Testing Machine, Speed Governor & Vehicle Location Tracking Device (AIS:140, IRNSS Method)]

DIESEL SMOKE METER
Operating principle

SSN Technologies, Tech Skanda brand, Smoke Meter model SSN-SM-1 is based on the principle, Smoke opacity instruments measure optical properties of diesel smoke, providing an indirect way of measuring of diesel particulate emissions. Smoke opacity meters are instruments measuring the optical properties of diesel exhaust. It can measure the complete opacity spectrum from 0-99% in either continuous or free acceleration test mode.

Diesel Smoke meters, also referred to as opacity meters, detect and measure the amount of light blocked in smoke emitted by diesel engines from vehicles. The smoke meter readout displays the smoke density giving a measure of the efficiency of combustion. To ensure proper maintenance of diesel engines for improved fuel economy and protection of the environment.

Smoke meters measuring the optical properties of diesel exhaust. These instruments have been designed to quantify the visible black smoke emission utilizing such physical phenomena as the extinction of a light beam by scattering and absorption. In general, smoke and opacity meters are much simpler (some of them very simple) and less costly in comparison to most other instruments used for PM measurement. In fact, the smoke opacity measurement is the only relatively low-cost and widely available method to measure a PM-related emission parameter in the field.

Diesel Smoke Meters should measure diesel emissions in Opacity and Smoke Density.

Opacity means - the degree to which smoke blocks light, and the basis for measuring the amount of smoke coming from a diesel vehicle. Poorly maintained or malfunctioning engines are sometimes the cause of excessive smoke. Opacity is a measure of the amount of light obscured by the particulate matter (PM) in the exhaust from diesel engines, measured under normal operating conditions.

Smoke Density means-the terms represent the exponential light loss sensitive per unit length of the smoke column. Light Absorption Coefficient of quantifying the ability of a smoke containing gas sample to LED. The smoke density is a function by having a beam of light of known intensity a given distance away and measuring how much light gets through.

Note: In case of diesel vehicles, the smoke density is checked. If density of smoke emitted by the vehicle is less than 65 Hartridge Smoke Unit (HSU), the vehicle is certified as non-polluting. While '0' HSU means smoke is invisible, 100 HSU means smoke is thick and opaque.

It also complies with the Indian Standard CMVR/TAP-115/116 issued by Ministry of Road Transport & Highways, New Delhi.

KEY FEATURES :

- Microcontroller based design.
- LCD screen and keypad for easier setting & operation.
- Equipped with USB &RS-232 digital serial interface and PC software.
- Auto zero Facility.
- It Operate with both AC & DC supply.
- RPM & Oil Temperature Measurement facility.
- Wireless and Wired Remote (Optional).
- Wireless and Wired RPM Measurement unit.
- Wireless Dot Matrix Printer (Optional).
- Suitable Indian Voltage Condition
- Smoke Measurement in %opacity & K value
- Low voltage detection or Cutoff circuit.
- Manual Fan ON facility

TECHNICAL SPECIFICATION :

Measurement of principle :
Opacity (HSU) & Absorption Coefficient (K)
Absorption Coefficient Range (K) &

Resolution	: 0-21.439 k/m & 0.001/m
Type of smoke meter	: Partial Flow
Display & Indication	: LCD & Opacity (HSU) & Absorption Coefficient (K)
RPM	: Vibration based (0-6000rpm)

Opacity Resolution &

Range (HSU)	: 0.01% & 0-99.99%
Linearity	: ±0.1/m,
Drift	: ±0.1/m
Scale Resolution	: 1^0C
Warm-up time	: <1minute
Response Time	: < 10 Seconds
Oil Temperature	: 0 - 150^0C
Accuracy	: ±3%
Operating Temperature	: 0 - 50^0C
Light Source Details	: 560nm Wavelength
Power Supply	: 12V DC
Power	: < 75W
Dimension	: 270X270X450mm
Weight	: 10kg (approx)

STANDARD ACCESSORIES :

Diesel Smoke Meter, Model: SSN-SM-1
Sampling Probe & Tube 7M length
Power Supply Adapter
Operational Manual (Soft Copy)
RS232 & USB Cable
Oil Temperature Probe
Remote Display

OPTIONAL ACCESSORIES:

Printer
RPM Measurement
(Battery / Magnetic / Cigar Lighter)

Our Company policy is continuous development of this product.