General Specifications of MEXA-600S

1. About opacity smoke-meter MEXA-600S

The MEXA-600S measures smoke in the exhaust gas emitted from diesel engines by the opacity method. It can measure low-concentration smoke with more precise repeatability and accuracy, being compared with conventional smoke-meters of light reflection type. The analyzer conforms to International Standard (ISO 11614). Compact enough and can be easily operated, it is most suitable for auto repairs, inspection and safety checks, and R&D purposes.

2. Outline

Model	MEXA-600S
Conformed standards *1	ISO 11614
Application	Measurement of diesel engine smoke emission under free-acceleration mode
Principle	Opacity method
Measurement range	- Opacity: 0.0 to 99.9 % - Light absorption coefficient: 0.000 to 9.999 m^{-1}
Display resolution	- Opacity: 0.1 % - Light absorption coefficient: 0.001 m^{-1}
Display	Liquid crystal display
Printer	Built-in type (parallel)
Inputs/outputs	- Host communication: RS-232C - Analog output: 0 - 1 V (optional)
Sampling method	Use of pressure difference between engine exhaust and atmospheric condition
Sample cell inside pressure	Within ± 0.75 kPa

3. Configuration/condition

Configuration	- Control unit: with a built-in printer and a remote control unit with 10 m cable - Detector unit: with 7 m signal/power cable Detector: Photo sensor Light source: 560 nm (green LED) Optical path length: 364 mm Cell I.D.: I.D. 20 mm Cell temperature: 75 °C
Sample gas probe	Dedicated probe (included),

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	2.5 m in length, I.D. 10.8 mm
Power supply	100 / 115 / 230 V (85 % to 110 %, max. 250 V) AC, 50/60 Hz (±1 Hz), single phase
Power requirements	Approx. 200 VA
Dimensions	- Control unit: 260(W) mm×335(D) mm×157(H)mm - Detector unit: 472(W) mm×258(D) mm×395(H)mm (including frame)
Mass	- Control unit: Approx. 3.5 kg - Detector unit: Approx. 6.5 kg (including frame)
Environment	- Ambient temperature: 5 °C to 40 °C - Sample gas temperature: 200 °C or less (at probe inlet) 150 °C or less (at detector unit inlet) - Humidity: 90 % or less (as relative humidity) - Ambient pollution level: 2 % or less (as opacity)

4. Function and performance

Repeatability	Within ±0.02 m^{-1} (maximum deviation from mean value of 4 times measurement, using 1.7 m^{-1} ND filter)
Accuracy	Within ±0.15 m^{-1} (for ND filter of 1.7 m^{-1} ± 0.05 m^{-1})
Drift	Within ±0.025 m^{-1}/ 1 hour (for zero point)
Warm-up time	Within 15 minutes
Influence of power supply voltage	Within ±0.01 m^{-1} (when power supply voltage is varied in the range of specification, using 1.7m^{-1} ND filter)

5. Options

RS-232C cable	For host communication,2.5 / 5 / 10 m in length
Analog output PCB	For output range of 0 - 1 V
Analog output cable	3/5 m in length
Engine speed sensor (Battery sensor or Magnetic sensor)	Type: MGT-300/ST Range: 0 to 9990 rpm Display resolution: 10 rpm Accuracy: within ±10 rpm (for 0 to 1000 rpm), within ±1 % of reading (for 1010 to 9990 rpm) Power supply: from 11 to 45 V DC
Engine speed sensor (Battery sensor)	Type: CAP-8500 Range: 400 to 9900 rpm Display resolution: 10 rpm

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	Accuracy: Power supply:	within ±20 rpm (for 400 to 2000 rpm), within ±1 % of reading (for 2001 to 9999 rpm) from 9 to 15V DC
Oil temperature sensor	Range: Display resolution: Accuracy:	0 to 150 °C 1 °C within ±2 °C
Reference filter (ND filter)	For checking accuracy	

Remarks

*1 MEXA-600S does not confirm to neither EU EC-marking nor US FCC.