

DewTrak II-MO

Water Vapor & Barometric Pressure Measurement for Motor Octane Testing

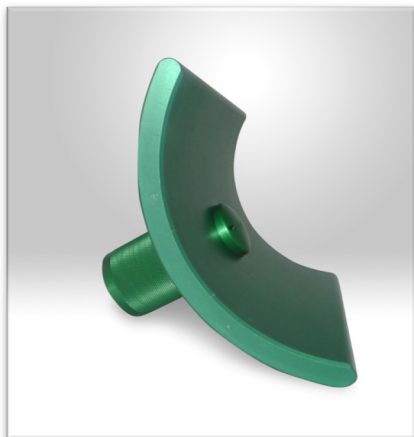
The DewTrak II-MO is specifically designed to measure conditions required for Motor Octane Number (MON) and Research Octane Number (RON). It uses the primary method chilled mirror dew/frost point temperature condensation principle to determine the water vapor concentration and a pressure sensor to measure barometric pressure of the motor intake air/fuel mixture.

The DewTrak II chilled mirror hygrometer has been adapted for motor octane testing per ASTM Standards D2699, D2700 and D2885, where the water vapor content in grains/lb. of dry air is measured and controlled so an accurate determination of octane rating of fuels can be made.

Chilled mirror hygrometry is an excellent technology for this application due to its NIST traceability, inherent stability and repeatability. To make the system compliant with ASTM Standards, the DewTrak II-MO also features a sensor that continuously measures the barometric pressure in inches of mercury.

The DewTrak II-MO hygrometer probe is inserted into a specially designed, robust metal manifold that fits onto the engine air intake duct. The probe forms an air tight seal with the duct. The manifold has been designed so just a minimal amount of the probe is in the airflow. It does not change any aspect of air delivery to the engine. Each manifold is fitted with a removable, air tight plug so individual probes can be shuttled between engine test stands for optimum versatility of measurement. Probes can also be remotely mounted.

All Edgetech Instruments water content analyzers are manufactured and supported in the USA in a modern, ISO 9001:2015 registered facility with ISO/IEC 17025:2005 accredited calibration laboratory. The DewTrak II-MO is delivered with a NIST traceability certificate.



The DewTrak II-MO Manifold Mount



The DewTrak II-MO System is Available in Two Versions, for Duct or Remote Sensor Mounting

Features:

- Primary method chilled mirror measurement of dew/frost point
- ± 0.5 gr/lb. water content accuracy
- ± 0.044 inches of Hg barometric pressure accuracy
- Long term stability and repeatability
- Electronics housed in IP65 enclosure
- Manifold mount assembly kit included

Options:

- Data logging
- Spare manifold plug
- Remotely mounted sensor

Applications:

- MON analysis
- RON analysis
- Fuel and emissions testing in combustion engines



 **Edgetech Instruments**

ISO/IEC 17025:2005 Accredited
ISO 9001:2015 Registered

Technical Specifications

Sensor Types:

Primary method chilled mirror dew/frost point sensor with two stage thermoelectric cooling

Barometric pressure sensor

Mirror:

Standard: chrome plated

Measurement Range:

Water content:

0.56 gr/lb. to 1070 gr/lb.

Barometric Pressure:

0 to 30 in of Hg

Depression:

60°C

Accuracy:

Water content:

± 0.5 gr/lb.

Barometric pressure:

± 0.044 in of Hg

Repeatability:

±0.1 gr/lb.

Response:

2.7 gr/lb./sec not including settling time

Hysteresis:

Negligible

Display Parameters:

Dew/frost point, pressure, grains/pound

Flow Rate:

Static to 3,000 linear ft./min.

Operating Pressure:

Standard: 100 psig maximum

Higher pressure available on special order

Analog Outputs:

2 analog outputs:

4 to 20 mA or 0-5 Vdc to 0-10 Vdc selectable

Load:

4 to 20 mA: 0 to 250 ohms

0 to 5/10 Vdc: 1 K ohm or higher

Serial Output:

RS232 bi-directional

Relay Outputs:

2 programmable alarm relays:

K1: Clean mirror/Alarm 1

K2: Servolock/Alarm 2

Contact Rating:

Normally open (NO):

3 A at 25 Vac, or 30 Vdc

Remote Cable Configuration:

0 ft. standard, 50 ft. maximum

Power Supply:

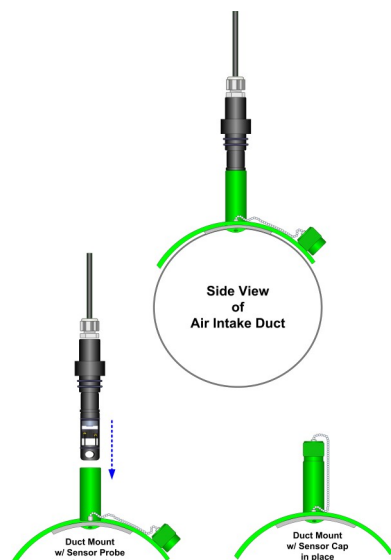
24 Vdc ± 20%, 1 A maximum

Enclosure:

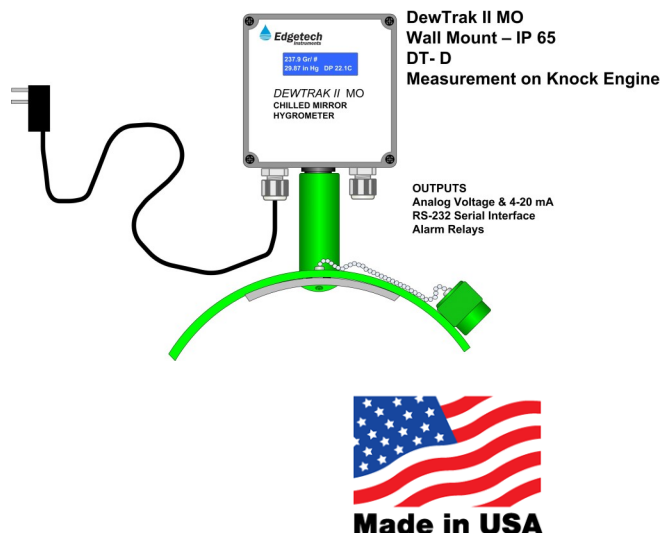
Plastic IP65 rated

Weight:

3 lbs. or 1.4 kg



DewTrak II-MO Remotely Mounted Probe



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