Model 137

Aircraft Hygrometer

Model 137 Vigilant Aircraft Hygrometer

The EdgeTech Model 137 Vigilant Aircraft Hygrometer is a rugged, shock mounted military qualified instrument used for the primary measurement of dew point in flight or in installations with existing flow, such as wind tunnels.

It features a miniature remote dew point sensor employing a platinum resistance thermometer, and has 15 feet of interconnecting cable to the control unit. Precision calibration units for the linear analog outputs are included.

The specially designed dew point sensor is mounted through the skin of the aircraft and is mounted to either the left or right side of the aircraft.

The dew point is detected by using chill mirror technology assuring precision accuracy, repeatability and reliability.

How to Order a Model 137 Vigilant:

137 Electronic control unit

Dew Point Sensor (required to select one):

A1 Single stage dew point sensor (45°C depression)
A3 Three stage dew point sensor (65°C depression)

Mounting Configuration (select one):

AS/L Aircraft sampling module, Left side to pilot perspective
AS/R Aircraft sampling module, Right side to pilot perspective

Options:

CBL Additional sensor cable over 15 feet

Example:

137-A3-AS/L-CBL (25FT)

EdgeTech Moisture & Humidity Systems

Model 137

SPECIFICATIONS

Dew/Frost Point Range

-40° to +60°C (-40° to +140°F) A1 Sensor
-50° to +90°C (-58° to +200°F) A3 Sensor

Dew/Frost Point Accuracy

±0.20°C (±0.36°F) nominal

Dew/Frost Point Sensor

3-wire Platinum Resistance Thermometer (PRT), 100 ohms at 0°C, nominal

Depression

45°C (81°F), nominal, A1 Sensor
65°C (117°F), nominal, A3 Sensor

Sensor Materials

Chromium, glass, epoxy, anodized aluminum

Slew Rate

1.5°C (2.7°F)/second max, above 0°C

Repeatability

±0.05°C (0.09°F)

Hysteresis

Negligible

Precision Resolution

0.1 degrees C or F

Sample Flow Rate

0.25-2.5 liters/minute (0.5-5.0 SCFH)

Operating Temperature

Control Unit: 0° to +50°C (+32° to +122°F)
A1 Sensor: -40° to +60°C (-40° to 110°F)
A3 Sensor: -50° to +100°C (-58° to 212°F)

Display

LCD graphics backlit display
0.25-in. high digits

Analog Output

Voltage

0 to 5 VDC, scalable from -75° to +100ºC (-103° to +212ºF)
1 K ohms minimum load resistance

Current

4 to 20 mA, scalable from -75° to +100ºC (-103° to +212ºF)
1000 ohms maximum loop resistance

Serial Digital Communication

RS-232C compatible
9-pin D sub-miniature connector (female)
Baud Rates: 1200/2400/4800/9600/19200 Protocol: N81
Output of time, date and dew/frost point at timed Intervals
Programming of most keypad functions

Auto Balance Control:

Manual initiation of ABC at any time
Automatic ABC with start time and interval programmable from keypad or RS-232 port
Outputs programmable for Track or Hold during ABC

Physical:

Shipping weight:
11 pounds (5 kg) with sensor
Dimensions:
Less shock mount base (LxWxH): 13 x 7.6 x 4.9 inches (33 x 19.2 x 12.4 cm)
With shock mount base (LxWxH): 13.1 x 7.6 x 5.8 inches (33 x 19 x 14.6 cm)

Power Requirements:

90 to 240 VAC, 50-60 Hz
75 watts maximum

Fuses:

90 - 150 VAC Operation: 1A, 3 AG, 250 VAC, Slo-Blo
160 - 240 VAC Operation: 1A, 3 AG, 250 VAC, Slo-Blo

Keypad

Five soft keys for setup and operation: Displayed parameter selection: °C/°F toggle: View/change time, date: digital averaging: baud rate: Manual Auto Balance Cycle initiate: Program Auto Balance Cycle for start time, interval, output Track/Hold: Maximum Heat toggle: Maximum Cool toggle: View/change high and low limits for analog outputs: View/change Alarm parameters, high/low limits, high or low alarms, latched or unlatched relays, Reset front panel Alarm indicators (latched only).

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