



Humidity and Temperature Probe



Product Overview

The Qualimetrics Model 5140 Humidity and Temperature Probe provides accurate temperature and relative humidity measurements using a state-of-the-art design.

This versatile probe is used to measure ambient temperature and humidity in Q-Net systems, where its output is combined with those of other sensors to provide an integrated weather picture.

For relative humidity measurement, the probe features a rugged polymer capacitive humidity sensor constructed directly onto a monolithic interface circuit.

Temperature measurement is provided by a precision thin-film platinum 1,000 ohm RTD, whose resistance changes in response to temperature changes.

Solid state electronic circuits are built into each probe to produce a buffered 0.4 to 2 Vdc output (nominal) corresponding to 0 to 100% relative humidity. The slight temperature dependence of the polymer sensor is compensated over the temperature range of -40 to +55°C by means of proprietary algorithms designed into the Q-Net system.

Each probe is delivered with three calibration values. When the probe is installed into a Q-Net system, these calibration values are entered via the Q-Net keypad or via a computer running the QSoft PC software. The calibration values are then stored in battery-backed memory and used by the Q-Net system to calculate accurate RH, temperature, and dew point values.

The Model 5140 normally mounts within a self-aspirated radiation shield (SARS), such as the Model 8141-A. For optimum temperature measurement, the sensor can instead be mounted in a motor-aspirated radiation shield (MARS), such as the Model 8152-A. Neither radiation shield is included as part of the 5140, and must be ordered separately.

The sensor elements are protected from environmental contaminants by a removable sintered filter, and the sensor electronics are housed within a rugged, O-ring sealed metal case. The probe comes standard with 20 feet of attached cable.

SYSTEMS

Specifications

Humidity and Temperature Probe

Operating Temperature: -55° to + 55° C
Excitation Voltage: 8–12 Vdc
Current Consumption: 4 mA
Size: 0.75" dia x 8.5" L (19 x 216 mm)
Weight/Shipping: 0.5 lb/1 lb

Humidity

Sensing Element: Thin film capacitor
Measuring Range: 0-100% RH
Output: 0.4-2.0 Vdc
Accuracy: +/-3% between 0% and 90% RH
+/- 4% between 90% and 100% RH
Response Time: 3 minutes between 0% and 90% RH
Hysteresis: +/- 0.5% RH

Temperature

Sensing Element: Thin film platinum RTD
Measuring Range: -55° to +55° C
Accuracy: +/- 0.2° C

Ordering Information

Humidity and Temperature Probe

5140	Humidity and Temperature Probe, includes 51140 sintered filter and 20' cable
51140	Sintered filter, 40 micron



Qualimetrics, Inc.
1165 National Drive
Sacramento, CA 95834

Phone: 916 928-1000
USA Toll Free: 800 824-5873
Fax: 916 928-1165
www.qualimetrics.com