



Electronic Humidity Sensor (RH40)

Features

- Fully interchangeable tip
- Linear output frequency
- Robust construction
- Reliable humidity measurements

Applications

- Meteorology
- Crop studies
- Pest management
- Ecology
- Environmental studies

The RH40 series relative humidity sensor features a field-interchangeable tip that requires no field re-calibration. State-of-the-art microprocessor technology is employed, together with a capacitive polymer sensing element that changes di-electric constant with atmospheric relative humidity and a band-gap temperature sensor for thermal compensation. Both are coupled to a 14 bit analogue to digital converter and processed digitally.

This results in a linear output change as a function of relative humidity. Response time is 1 to 2 minutes.

At extremely high relative humidity levels condensation (dew) occurs - condensation on the sensing element itself will give readings of 100 %.



Correct readings will return when the moisture has evaporated, and no permanent damage is done to the tip.

Mechanical protection from insects etc. and particulate contamination is provided by a series of filters.

NB The standard Environdata warranty does not extend to relative humidity sensor tips and their replacement, as these are consumable items.

The average life of the sensing tip is approximately 30 months. However in environments with higher levels of airborne contaminants, the life expectancy might be shorter.

Electronic relative humidity sensors are not recommended for accurate measurements below 5% and above 95% relative humidity, or for polluted environments.

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Specifications (typical)

Sensing element:

Capacitive Polymer Integrated Circuit

Measurement units:

Percent (%) relative humidity

Humidity range:

0 % to 100 % RH

Resolution:

±0.1 % RH

Hysteresis:

±1.0 % RH

Linearity:

< 1% RH

Repeatability:

±0.1 % RH

Total Accuracy:

±2 % RH (10%-90% RH)

±4 % RH (<10% or >90% RH)

Interchangeability:

Fully interchangeable

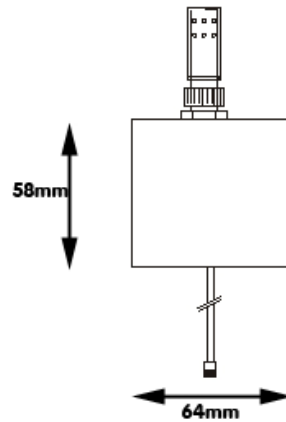
Long Term Stability:

< 0.5 % RH per year

Calibration Method:

Individually calibrated in precision humidity chamber.

Dimensions (mm)



Electronic housing:

Grey - high impact PVC

Sensing Tip housing:

Machined black delron

Operating conditions:

Temperature: -40°C to +80°C

Humidity: 0% to 100%

Sensor Mounting:

Inside a weather shield that protects it from direct exposure to the elements. Airflow should not be obstructed.

Supply Voltage: 5.5 to 15 Volts DC

Current Drain: 2 mA.

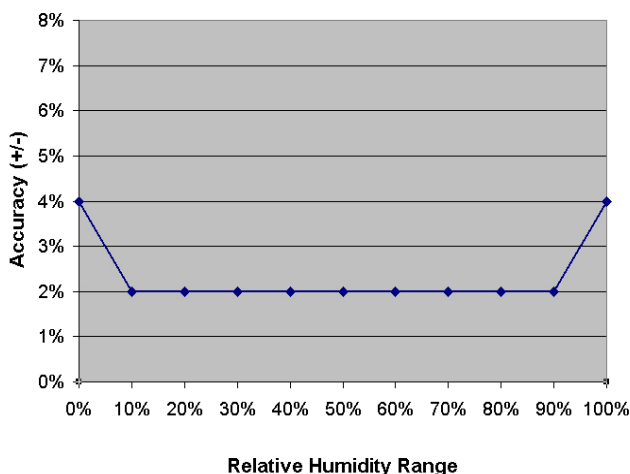
Output: +5 Volt pulse

Configurations:

<i>Model</i>	RH40
Range 1% to 100% RH	10-20Hz
Resolution	0.1%
EasiData Compatibility	Mk4
Cable Type:	3 core shielded
Cable Length:	0.75m

Other output frequency ranges are available on request.

RH 40 Accuracy



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