Relative Humidity and Temperature Sensor RHRx

Description

This type of relative humidity and temperature sensors utilize state-of-the-art single chip multi-sensor module comprising a calibrated digital output to enable stability and immunity to interference. Application of CMOS processes with patented micro-machining ensures highest reliability and excellent long-term stability. The device includes a capacitive polymer sensing element for RH and a bandgap temperature sensor. Both are seamlessly coupled to a 14 bit analog to digital converter, and a serial interface circuit on the same chip. Due to its integrated sensing and D/A conversion, it enables high signal quality, fast response time and immunity to external disturbance.

Features

- High Noise immunity for stability by digitized signals
- Convenient to use, both RH and Temperature are with selectable linear output
- No loss of accuracy up to 100% RH
- Wide temperature range
- 24V AC/DC supply
- Direct Thermistor Option

"Designed and manufactured exclusively for E. C. Products Limited by Dura Controls UK Limited"

Technical Specification

Humidity: RH sensor: capacitive polymer
Accuracy: +/- 3% or +/-2% @ 25 °C
Response time: < 8 sec
Long term stability < 2% RH per year
Hysteresis :+/- 1% RH
Output: 0-100%RH

Temperature: Bandgap temperature sensor
Accuracy: ±0.5°C at 25°C
Response time < 8 sec
Default Output: 0~°C (selectable)

Housing material: ABS

Ambient range: -20 °C to +50°C

Power Supply: 24Vdc/ac(<500 ohms)

Connection: 0.5-1.5 mm cable.

Dimensions: 85 x 85 x 28 mm

Order Codes

RHR3 Room RH & Temperature Sensor 3%

RHR2 Room RH & Temperature Sensor 2%

For direct thermistor specify type or BMS controller

Installation

1. Select a location in the space where contaminants are a minimum.
2. Mark holes on the wall using the base of the housing and mount onto the wall. Alternatively a suitable mounting box can be used. Take care do not contaminate the transmitter with dust, dirt and static.
3. Connect wiring to the terminal block. Make connections to the transmitter only after all other electrical installation and test work has been completed.
4. Ensure the supply voltage is within specification.
5. It is recommended that screened cable be used and that the screen should be earthed at the controller. Control cable should not be run next to power and other cables which may produce significant magnetic noises.
6. Allow 3-5 minutes before functional check.
7. Allow 30 minutes before carrying out pre-commissioning checks.

Commissioning

To perform an accurate comparison between a transmitter output and a portable reference, it is essential that the two probes are held adjacent for a minimum of 30 minutes in a stable RH environment. It is not uncommon for test instruments and transmitters to disagree by 10% RH or more when sites measurements are taken incorrectly. "Slings" or other mechanical hygrometer should not be used as reference.

DIP Switch Settings

Temp. range		DIP			
Low °C	High °C	1	2	3	4
0	40	OFF	OFF	OFF	OFF
0	50	OFF	OFF	OFF	ON
-10	50	OFF	OFF	ON	OFF
-20	50	OFF	OFF	ON	ON
-30	50	OFF	ON	OFF	OFF
-40	50	OFF	ON	OFF	ON
0	80	OFF	ON	ON	OFF
-10	80	OFF	ON	ON	ON
-20	80	ON	OFF	OFF	OFF
-30	80	ON	OFF	OFF	ON
-40	80	ON	OFF	ON	OFF
0	100	ON	OFF	ON	ON
-20	100	ON	ON	OFF	OFF
0	120	ON	ON	OFF	ON
-20	120	ON	ON	ON	OFF
-40	120	ON	ON	ON	ON

E.C. Products Limited - Head Office
EC House, Amberley Way, Hounslow
Middlesex, TW4 6BH, United Kingdom
Tel: +44 (0)20 8569 4100 **Fax:** +44 (0)20 8569 4111

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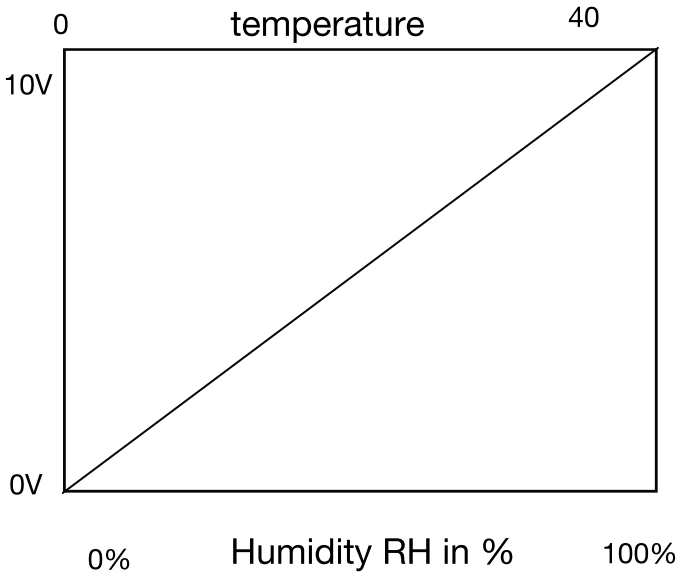
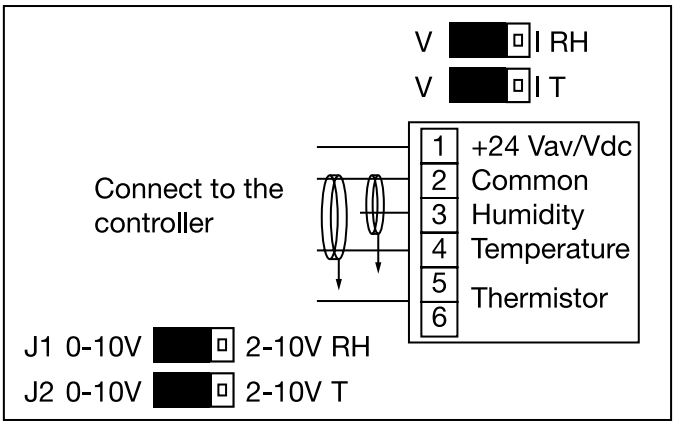
Sensing range (factory set default)



Wiring/Jumper Settings



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