Solidyne

TECH/DATA SHEET

DTS-10K-RH
Installation Document
Revision 1 9/2005

DTS-10K-RH Duct Air Temperature Sensor w/ Humidity

The DTS-10K-RH temperature and humidity sensor is a Relative Humidity transmitter that can be powered with either a +8 to 36 VDC or 24 VAC supply voltage. The DTS-10K-RH converts resistance to a linear 0 to 10 VDC output for reading relative humidity. The DTS-10K-RH uses a half-wave bridge rectifier to convert the AC power to a useable DC voltage. Caution: When using a 24 VAC transformer, Solidyne recommends that you use an isolated transformer. If sharing the transformer with your controller, valve, actuator, or any other device, be sure to connect all of the devices with the proper polarity, since most devices are earth grounded. Failure to do so may result in damage to the DTS-10K-RH, your controller, or any other devices that are attached due to a ground loop problem. Accuracy is maintained over the operating range, using a thermistor for temperature compensation. Precision production tolerances maintain sensor interchangeability to within +/- 3% nominal without recalibration. Each DTS-10K-RH Series humidity transmitters are calibrated at 3 different points, using an NIST Traceable Temperature/Humidity chamber. The temperature sensor in the DTS-10K-RH is a 10k thermistor.

All of the units come with a two year factory warranty.

Specifications

Input: 5 wire (3 for 0-10VDC, 2 for 10k thermistor)
Supply Voltage: +8 to 35VDC or 24VAC
Current Draw: Less than 4mA
Life Expectancy: 100,000 hours or 11.5 years
Enclosure Material: Beige ABS plastic

Wiring Connections

5 wires must be pulled for the DTS-10K-RH to work properly. Solidyne recommends the use of 18 to 22 AWG twisted pair wires or shielded cable for all sensor installations.

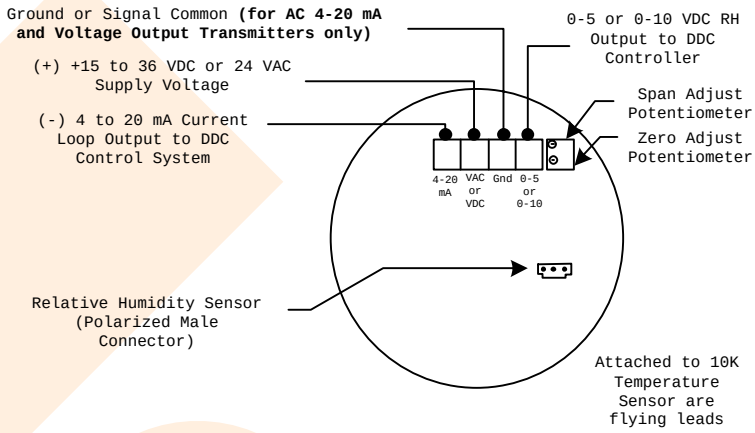
Mounting Instructions

Duct Mounting Configuration:
The RH transmitter should be placed away from areas of excessive moisture, corrosive fumes, vibration, or extremely high temperatures. All of the RH sensors have a +/- 3% interchangeabilty. It is recommended to do a single point calibration for a higher accuracy.
1) Drill a ¾" diameter hole in the duct where the sensor is to be mounted.
2) Now insert the stainless steel probe into the hole until the foam is in direct contact with the duct and attach the RH transmitter by using the (2) #8 x ¾" self tapping TEK screws that are included with the installation instruction.

Mounting Instructions Cont'd

3) Remove the cover and install your conduit connectors or watertight fittings. The outer ring should be used when using a ½" NPT conduit fitting. ***Please note that the inner ring will knockout first and then the outer ring should be tapped in (1) or (2) locations with a screwdriver before it can be peeled out. The cover will be connected to the housing by the RH sensor leads.***
4) Next connect all of the wires to the corresponding terminal blocks and/or flying leads as shown below.
5) Now place the cover onto the unit and gently turn until it is tight. **Be careful not to apply too much pressure when tightening.**
6) Finally verify that you are getting a humidity reading on your Building Automation System. ***Please note that it may take ten to twenty minutes for the sensor reading to stabilize upon initial power up.***

Wiring Diagram



Dimensions