- Integrated Temperature and Relative Humidity 4-20 mA Transmitter. Housed in a rugged stainless steel body offering excellent corrosion protection.
- Can be used as temperature only or RH only 4-20 mA transmitter.
- RH Accuracy at 25 C: Model 1235 2% typical / 3% maximum; Model 1235HA 1.8% typical / 2% maximum. Please see graphs under Specifications section for more details.
- Electronics are sealed for environmental durability and reliability. Three additional seals at each of the transition points to further prevent water and air flow through the body of the probe ensuring fast accurate measurement.
- Rugged, removable bronze filter protects sensors while providing excellent heat transfer
- Sensor module contains its own calibration and additional protection. It is replaceable.
- ½" NPT thread at sensor end allows duct mounting using a flange.
- ½" NPT thread at wiring end allows use of standard junction boxes.
- Wiring is via flying leads requiring no special connectors or cable assemblies.

DESCRIPTION

The Model 1235 is a rugged 4-20 mA temperature / humidity transmitter housed in stainless steel. It is microprocessor-controlled and digitally calibrated. The on-board temperature reading is used to compensate the RH reading for temperature effects. Temperature correction occurs whether or not the temperature loop is used. It is essential to maintaining accuracy of RH reading.

Either output or both outputs can be used. This allows usage as temperature only, humidity only, or temperature and humidity.

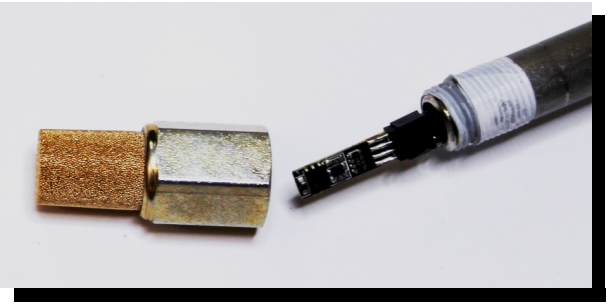
The on-board processor monitors for fault conditions. A fault detected with the temperature or humidity reading will cause that output to be driven to about 22.4 mA to indicate an error condition. Wiring is accomplished via flying leads.

The electronics are environmentally sealed. The ends of the probe are also sealed to prevent moisture from entering the electronics compartment. The unit can be used over a temperature range of –40 to 85C. The RH current output is scaled for 0 to 100% relative humidity. The temperature current output is scaled for –50 to 100 degrees C. Other ranges could be made available.

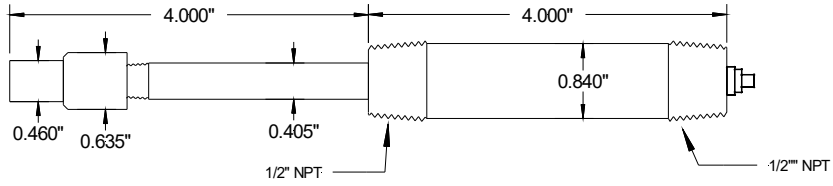
Removable Filter and Replaceable Sensor Module

The bronze filter is removable, has excellent corrosion protection and provides good heat transfer for an accurate measurement.

The sensor module contains a digitally calibrated sensor that is replaceable. The module integrates additional sensor protection to prevent damage in case of reversal while being replaced or serviced.



Wiring and Installation



Features / Dimensions

The Model 1235 may be mounted in a large variety of ways. In its most basic form the entire probe can be simply fastened into any 1/2 inch NPT port with access to the process being measured. The probe can also be used with an optional flange for duct mounting or suspended from a conduit box fastened at the wiring end. In application such as outdoors, where the sensor may be subject to water droplets or severe condensation it must be mounted with the probe tip pointed down. For outdoor applications please consider our Model 40A which is a Rain and Sun Guard.

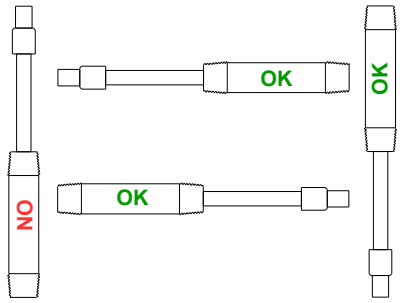
The electrical interface consists of three wires. Please see the wiring diagram below. The loop circuitry is internally fused, transient and reverse voltage protected. The internal fuse does not need to be replaced.

Wire Color	Description
Red	Positive loop supply for both temperature and humidity loops.
Green	Temperature loop output.
Blue	Humidity loop output

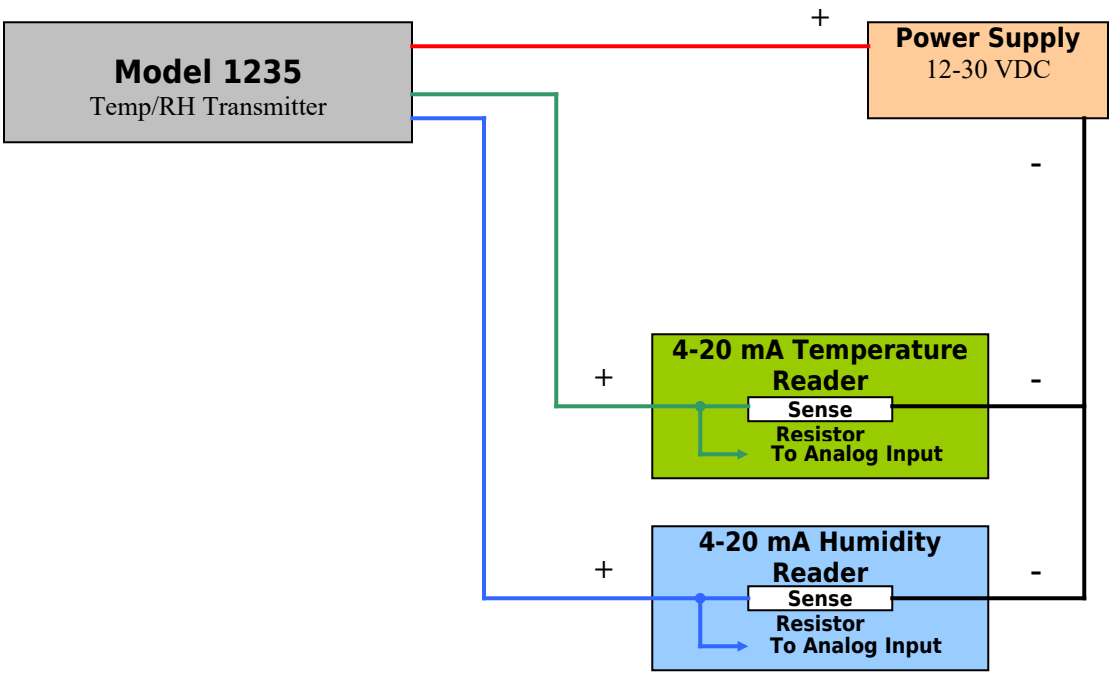
NOTE The unit will operate correctly with one or two loops connected. Can be used as a temperature only or humidity only transmitter if a single loop is connected.

The loop compliance voltage is 9 volts. The maximum current sense resistor depends on the power supply used. The maximum loop sense resistor can be calculated as: Rmax = Supply-9/0.0224. For a 24 VDC supply it is it is 670 Ohms. This is calculated using a maximum current of 22.4 m, which indicates a fault condition. Using 20 mA, Rmax is actually more like 750 Ohms.

NOTE



Mounting orientation could affect accuracy. Avoid mounting with sensor tip up.

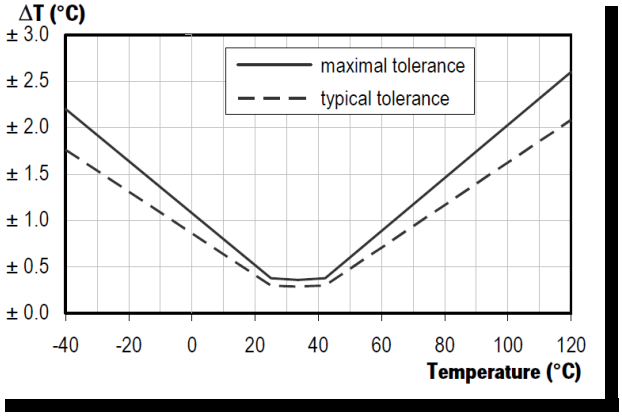
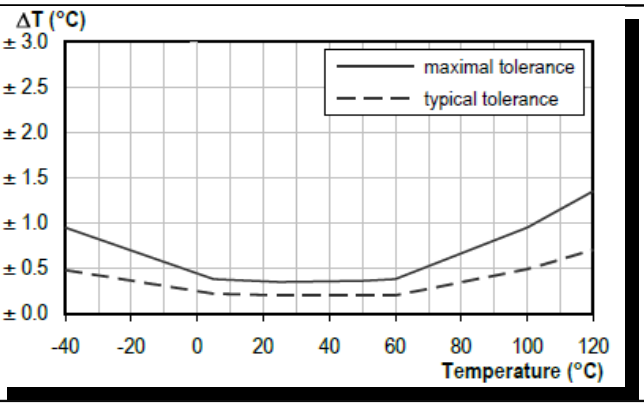


The current output is scaled as follows for each loop

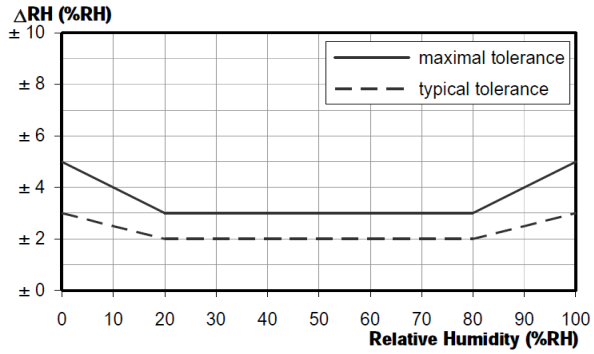
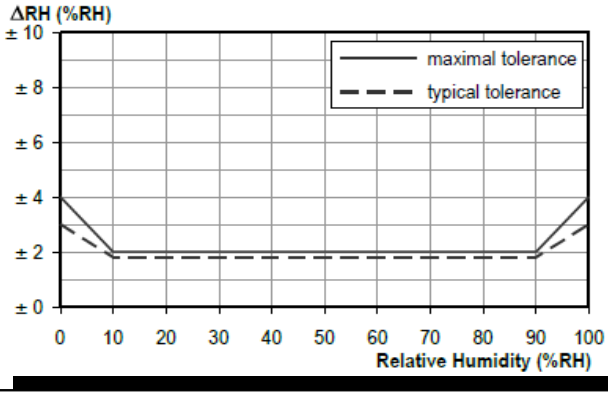
Output	Temperature	Humidity	Description
4 mA	-50 C	0%	4 mA represents the minimum value
20 mA	100 C	100%	20 mA represents the maximum value
22.4 mA	Fault	Fault	22.4 mA represent a fault condition that has been detected by the on-board processor.

SPECIFICATIONS

Temperature

Sensing Element	Solid state
Model 1235 Standard Accuracy	
Model 1235HA, High Accuracy	
Temperature Range	-40 to 85C
Resolution	0.06 C

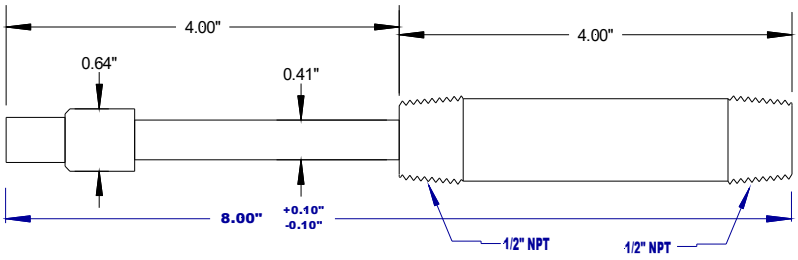
Relative Humidity

Model 1235 Standard Accuracy at 25C	
Model 1235HA, High Accuracy at 25 C	
Resolution	0.05%
Maintenance	No routine maintenance required Bronze filter is removable for cleaning Sensor Module is field replaceable.
Sensor Stability	<0.5% RH typical per year (See notes 1 &2)
Notes	1. Sensor drift and inaccuracies maybe higher if sensor is exposed to high contents of volatile organic compounds. 2. Long term exposure to >80% RH may temporarily offset RH by up to 3% after 60 hours. This recoverable after return to lower RH levels.

Electronics

Operating Environment	-40 to 85C, 0-95% RH non-condensing
Input Power	12 to 30 VDC at 22.4 mA maximum
Input Protection	Input power is fused; outputs are reverse voltage protected and transient protected. (Fuses do not need to be replaced)
Current output resolution	4 uA or 0.025%

Dimension and Materials

Housing Material	Body and extension tube is 304 stainless steel Filter is Bronze
Duct Mounting Insertion Depth	4 inches
Dimension	

ORDERING INFORMATION

1235	**Model 1235 4-20 mA Temp / Rh Transmitter (Standard Accuracy, -50 to 100 C temperature output range)**
1235HA	**Model 1235HA 4-20 mA Temp / Rh Transmitter (High Accuracy, -50 to 100 C temperature output range)**

****Contact factory for custom ranges**