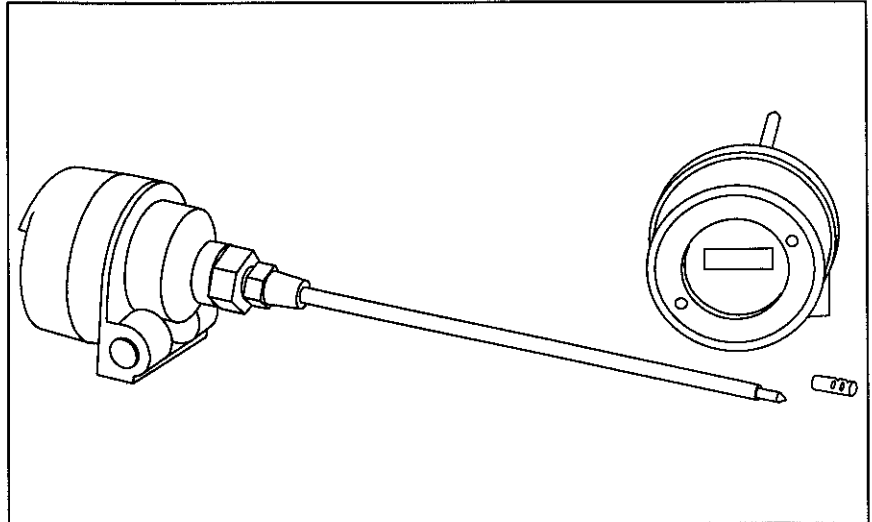


4111 Temperature Compensated Humidity Transmitter

Specification

Overview

The Honeywell Temperature Compensated Humidity Transmitter is a premium system designed for high temperature industrial humidity measurements. The packaging is extremely rugged and can be installed in the process, or mounted to a wall or pipe. Whether used as a rugged industrial humidity transmitter or in hazardous areas, the 4111 is designed to provide premium performance using sensors proven to perform in hostile environments.



Features/Benefits

- Temperature Compensated
- Operation up to 176°F
- Contamination Resistant
- External Non-Interactive Adjustments
- One-Point Field Calibration
- Interchangeable Sensor

Description

Temperature Compensated - A patented ULTRA-7™ thin film platinum RTD is mounted directly on the back of the humidity sensor to monitor its temperature. Output is automatically corrected over the full range of relative humidity and operating temperatures.

176°F Operation - The 4111 is designed to perform in elevated temperature applications. The sensor is fully compensated for accurate humidity measurements in atmospheric pressure environments up to 176°F. This unique temperature compensation and high temperature capability opens the door to elevated temperature drying applications as well as industrial inline process control.

Contamination Resistant - The Honeywell 4111 incorporates the new ULTRA-H II™ sensor. This sensor has superior contamination resistance. Common solvents, dirt, oil and other pollutants do not affect the stability or accuracy of the sensor. The sensor's polymer coating has excellent contamination resistance even in ammonia or chlorine environments. A porous platinum layer over the sensing polymer layer eliminates sensing external contamination and a final polymer topcoat protects the sensor. The sensor connections are potted in a custom molded plug to exclude contamination. Response time may be slowed by heavy contaminant layers, but accuracy is unaffected. The protective shield is removable for cleaning the thin film chip sensor. This rugged sensor is unique in that it may be washed. If physical damage occurs a new dual sensor may be plugged in and the system recalibrated.

External Non-Interactive Adjustment - The zero and span adjustments are located on the outside of the enclosure. Therefore, during normal maintenance, the environmental seal is not violated.

This allows for adjustments on-site yet retains the extra level of safety needed in potentially explosive environments. The circuit board is protected in a dual compartment housing adding an extra measure of protection from condensation.

Unique, fully independent zero and span adjustments cut calibration time and provide easy field adjustment.

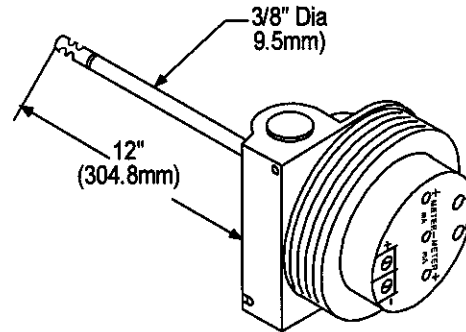
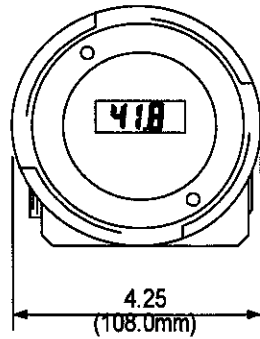
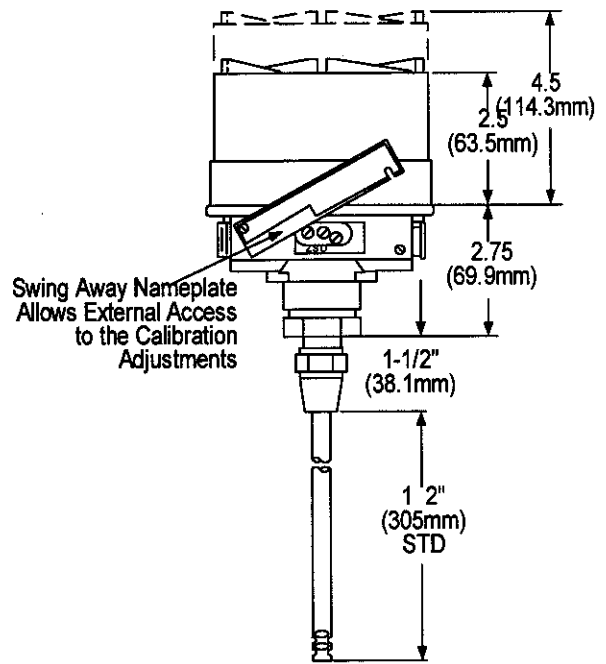
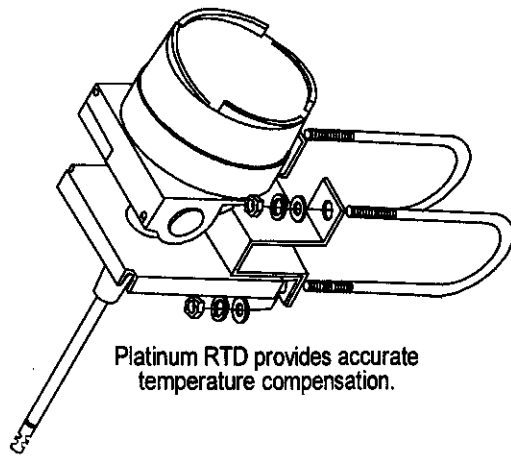
One-Point Field Calibration - Calibration is simple: one-pot, one-point, one-adjustment. Only the zero setting needs adjusting for routine field calibration. The sensor can be calibrated on-line in most instances.

Interchangeable Sensor - The ULTRA-H II™ humidity sensor is linear and interchangeable with only a zero adjustment. The ULTRA-7™ platinum RTD, built in the humidity sensor, is fully interchangeable with no adjustment necessary.

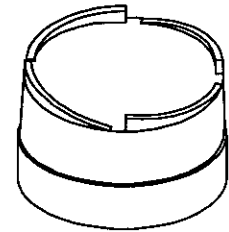
Specifications

Transmitter Output	4-20 mA (Corresponding to 0 to 100% RH)
Calibrated Humidity Range	0 to 100% RH
Calibration	NBS traceable data available
Sensing Element	ULTRA-H II™ thin film capacitive element with an ULTRA-7™ thin film platinum RTD for temperature compensation
Accuracy	±2.5% RH at 15°C to 40°C (59°F to 104°F) or ±3.5% RH at 10°C to 80°C (41°F to 176°F); from 0 to 93.8% RH at 1 Atm; ±1% RH to user setpoint held ±10% RH and ±5°C (Includes temperature, linearity, hysteresis and repeatability)
Repeatability	±0.5% RH
Linearity	±1% RH
Hysteresis	±1% of operating humidity span
Temperature Effect	±0.03% RH/°C ±1% RH at 10°C to 80°C (41°F to 176°F);
Operating Temperature	-40°C to 80°C (-40°F to 176°F)
Storage Temperature	-55°C to 85°C (-67°F to 185°F)
Time Constant	16 seconds in slow moving air at 25°C
Stability	Within 0.5% RH up to 80% RH; at 93.8% RH increases to +3% FH with 16 hours at 25°C
Washability	Washable in detergent solution with a water rinse
Sensor Interchangeability	Plug-in and recalibrate transmitter to original specifications
RFI Susceptibility	Per SAMA PMC 33.1
Input Voltage Effect	±0.002% RH/Volt from 12 V to 45 V
Power Requirement	12 Vdc +(R _{load} x 0.02 A) min to 45 Vdc maximum unregulated
Recommended R_{load}	250 ohms ±0.1% maximum at 17 Vdc min. 500 ohms ±0.1% maximum at 22 Vdc min. 750 ohms ±0.1% maximum at 27 Vdc min.
Zero and Span Adjust	Adjustable for calibration, non-interacting
Break Indication	Upscale to 20 mA except shorted RTD sensor downscale to 4 mA
Polarity Protection	Diode protected
Pressure Rating	0 - 50 psi
Sensor Housing	Stainless steel probe; fluted shield, (standard); porous stainless steel filter, (optional)
Transmitter Housing	NEMA 4X, cast low copper aluminum, fully anodized with aliphatic urethane finish. Weight of standard unit 3.2 lb. (1.5 kg). Weight with extended dome cover approximately 4.4 lb. (2.0 kg)
Sensor connections	Coaxial jack and 2 pin connector; Sensor cables plug into transmitter module; Cable allows sensor tip extension up to 36" from transmitter
Signal Connection	Power/signal leads to terminals under outer cover
System Test	Disconnected humidity cable provides 4.0 ±0.01 mA output; Disconnected RTD cable or removed sensor provides 20 ±0.01 mA output

Insert Dimensional Drawing Here



Industrial dual compartment contamination resistant housing.



Mounting Dimensions

Distributor :

Industrial Automation and Control

Honeywell Inc.

In the U.S.A.: Honeywell Industrial Automation and Control, 16404 North Black Canyon HWY., Phoenix, AZ 85023, (800) 343-0228

In Europe: Honeywell S.A., 80084 Amiens Cedex 2, (33) 22.54.56.56

Honeywell Control System Ltd., Honeywell House, Bracknell, UK-RG 12 1 EB, (44) 1344 826000

In Japan: Yamatake-Honeywell Co. Ltd., Nagai Int'l Bldg., 2 - 12 - 19 Shibuya-Ku, Tokyo 150 Japan, 81-3-3486-2051

In Asia: Honeywell Asia Pacific Inc., Room 3213-3225, Sun Hung kai Centre, No. 30 Harbor Road, Wanchai, Hong Kong, (852) 829-8298

In the Mediterranean: Africa and Middle East Region, Honeywell SpA, Via Vittor Pisani 13, 20124 Milano, Italy (39-2) 67731

Honeywell Pacific Division: Honeywell Pty Ltd., 5 Thomas Holt Drive, North Ryde Sydney, NSW Australia 2113, (61-2) 353 7000

In Canada: The Honeywell Centre, 155 Gordon Baker Road, Ontario M2H 3N7, 1-800-461-0013

In Latin America: Honeywell Inc., 14505 Commerce Way, Suite 500, Miami Lakes, Florida 33016-1556, (305) 364-2300