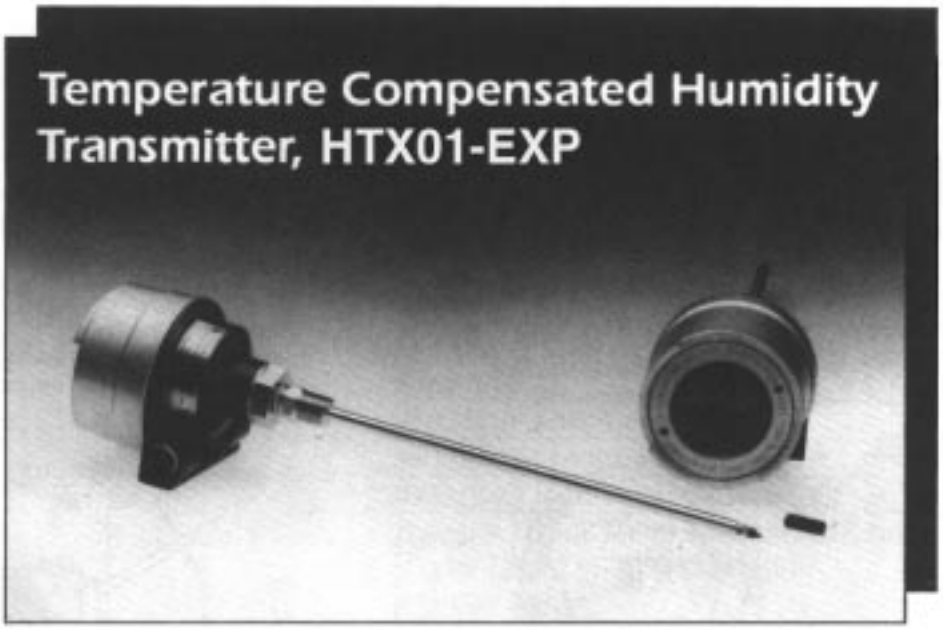
- ❑ **Temperature Compensated**
- ❑ **FM Approved for Hazardous Locations**
- ❑ **365°F Operation**
- ❑ **Contamination Resistant**
- ❑ **External Non-Interactive Adjustments**
- ❑ **One-Point Field Calibration**
- ❑ **Interchangeable Sensor**



HTX01-EXP is a premium system designed for high temperature industrial humidity measurements. It is approved by Factory Mutual for use in hazardous environments. 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 HTX01-EXP is designed to provide premium performance using sensors proven to perform in hostile environments.

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.

FM Approved for All Hazardous Locations

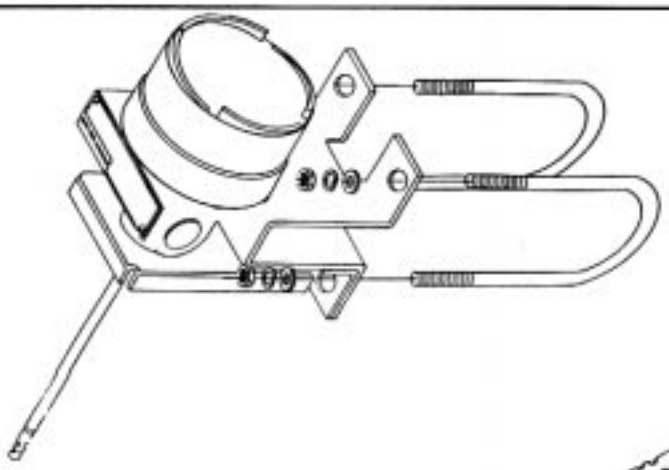
A unique quality of the FM approved Platinum Line Transmitters is - no user installed safety barriers are required for operation in hazardous environments. This saves time and money and makes installation less complicated. All standard options are also FM approved, so local indication, differential readings, or an internal power supply are still viable options for use in hazardous areas.

365°F Operation

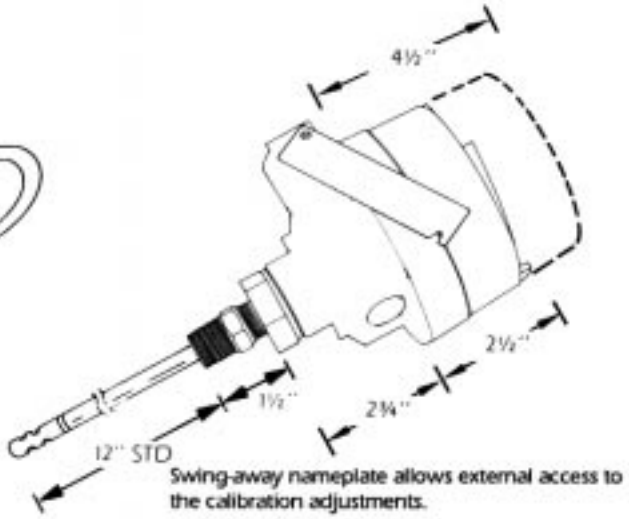
The HTX01-EXP is designed to perform in high temperature applications. The sensor is fully compensated for accurate humidity measurements in atmospheric pressure environments up to 365°F. This unique temperature compensation and high temperature capability opens the door to elevated temperature drying applications as well as industrial in-line process control.

Contamination Resistant

The HTX01-EXP 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 new polymer coating on the sensor has excellent contamination resistance even in ammonia or chlorine environments. A porous plati-

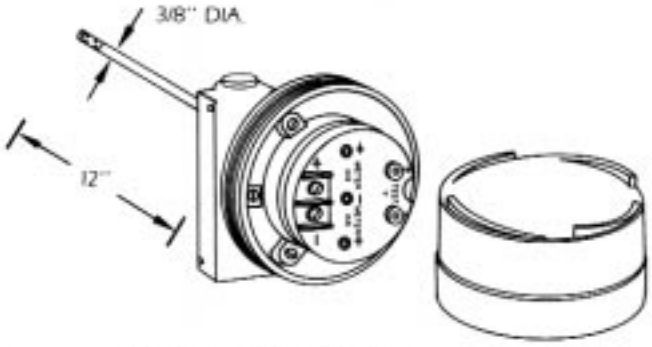


Platinum RTD provides accurate temperature compensation.



Swing-away nameplate allows external access to the calibration adjustments.

Optional meter for local indication.



Industrial dual compartment contamination resistant housing.

num 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

External Non-Interactive Adjustments

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 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

Ordering Information

Temperature Compensated Humidity Transmitter

Basic Model	Description
HTX01-EXP	FM Approved Temperature Compensated Platinum Line Humidity Transmitter
HTX01-EXP T1	Temperature Compensated Platinum Line Humidity Transmitter

Code 1	Sensor Type
H	ULTRA-H II™ Thin Film Humidity Sensor/ULTRA-7™ RTD (Sensors Included)

Code 2	Probe Length
12	12" Standard
	Non-Standard Probe Length; Specify in Inches, Min. 2", Max. 32"

Code 3	Range
(0-100%)	0-100% RH over 4-20 mA output

Code 4	Options
X52	PVC Solar Shield over Probe
X53	Sintered Stainless Steel Filter over Sensor
X59	Pipe/Wall Mounting Hardware Kit
X61	Integral Digital Meter & Extended Dome Cover (-20°C to 70°C Operating Temperature)
M2	Aluminum Tag, Machine Stamped, 15 Characters
M3	SS Electroetched 25 Characters Maximum on Each of Three Lines
433-0173	Replacement Humidity Chip Assembly
433-0155	Replacement Fluted Shield

General 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 90°C (41°F to 194°F) + 0.03% RH/°C ±1% RH from 90°C to 185°C; 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 90°C (41°F to 194°F); ±0.03% RH/°C ±1% RH from 90°C to 185°C (194°F to 365°F)
Operating Temperature:	-40°C to 80°C (-40°F to 176°F); sensor can operate to 185°C (365°F) for special applications
Storage Temperature:	-55°C to +85°C (-67°F to +185°F)
Time Constant:	16 sec. in slow moving air at 25°C
Stability:	Within 0.5% RH up to 80% RH; at 93.8% RH increases to +3% RH within 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 max. unregulated
Recommended R_{Load}:	250 Ohms ±0.1% max. at 17 Vdc min., 500 Ohms ±0.1% max. at 22 Vdc min., 750 Ohms ±0.1% max. 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:	Burst tested at 50 psi. external pressure
Sensor Housing:	Stainless steel probe; fluted shield, (standard); porous stainless steel filter, (optional)
Factory Mutual Approval:	Model HTX01-EXP is Factory Mutual approved suitable for Class I & II, Division 1, applicable groups B,C,D,E,F,G hazardous locations; Instrinsic safe sensor and explosion proof transmitter housing, explosion proof conduit required
Transmitter Housing:	NEMA 4X, cast low copper aluminum, fully anodized with aliphatic urethane finish. Weight of standard unit 3.2 lbs. (1.5 kg). Weight with extended dome cover approximately 4.4 lbs. (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.