

# Humidity Sensor/Transmitter Assembly

## Humidity & Temperature Transmitter



### Overview

Minco humidity and humidity plus temperature transmitters are designed using an advanced microprocessor. Digital signal processing allows these transmitters to precisely match the characteristics of the humidity sensor to a wide range of RH and temperature values found in the many applications the product serves.

The humidity sensor is comprised of an integrated circuit (IC) with a stable polymer element and platinum RTD that is used for temperature compensation. This sensor offers outstanding resistance to airborne contaminant and chemicals, and is protected by a sintered stainless steel filter which resists condensation.

- Wall/Duct/OSA mounting configurations
- Accuracies of  $\pm 1\%$  or  $\pm 2\%$  RH
- Temperature compensated
- Temperature output option
- Two-point field calibration
- NIST traceable calibrations

### Applications

Building environmental control systems (HVAC), hospitals, food storage, warehouses, clean rooms, pharmaceutical, freezers, drying equipment, and emissions monitoring.

### Specifications

#### Ambient Temperature:

Operating:

Room: -10 to 150°F (-23 to 65°C), non-condensing.

Wall/Duct/OSA: -10 to 185°F (-23 to 85°C), non-condensing.

Storage:

Room: -58 to 150°F (-50 to 65°C), non-condensing.

Wall/Duct/OSA: -58 to 185°F (-50 to 85°C), non-condensing.

**Supply voltage:** 9.5 to 35 VDC, non-polarized.

**Voltage effect:**  $\pm 0.001\%$  of span/volt from 9.5 to 35 VDC.

**Loop resistance:** The maximum allowable resistance of the signal-carrying loop, including extension wires and load resistors, is given by this formula:  $R_{loopmax} = (V_{supply} - 9.5)/0.02$  AMPS. For example, if supply voltage is 24 VDC, the loop resistance must be less than 725  $\Omega$ .

**Adjustments:** Zero and span field adjustments, non-interacting.

**Time Constant:** 50 seconds in slow moving air.

**Connections:** Screw terminals (22-14 AWG wire).

**Weight:**

Room: 0.19 lb (.084 kg).

Wall/Duct/OSA: 1.20 lb (0.55 kg).

**Minimum output current:** 3.5 mA

**Maximum output current:** 23 mA.

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## Humidity Transmitter AH429 and AH439

**Output:** 4-20 mA DC = 0% to 100% RH.

**Sensing Element:** Capacitive monolithic IC.

**Accuracy:** Includes temperature, linearity, hysteresis, and repeatability.

±1% from 10% to 80% RH @ 25 to 35°C or

±2% from 0% to 90% RH @ 25°C

(±3% from 0% to 90% RH @ 15 to 50°C)

(±5% from 0% to 90% RH @ 0 to 82°C)

### Specification options

AH429	<b>Model number:</b> AH429 Humidity Transmitter
D	<b>Enclosure</b> D: Duct mount, 8" probe length O: Outside Air/Wall mount, 4" probe length with shield, weather resistant enclosure S: Space mount W: Wall mount, 4" probe length, weather resistant enclosure
1	<b>Output</b> 4 to 20 mA DC
N10	<b>Calibration accuracy</b> (humidity transmitter) N10: ±1% from 10% to 80% (25 to 35°C) with NIST certificate N20: ±2% from 0% to 90% (25 to 35°C) with NIST certificate S20: ±2% from 0% to 90% (25 to 35°C)
T1	<b>Sensing element cover</b> (omitted on "S" space mount models) T0= Sintered stainless steel; pressed on cover T1= Sintered stainless steel; screw on cover T2= Slotted stainless steel; screw on cover (NA on "O" outside air models)
AH429D1N10T1 = Sample part number	

## Temperature Transmitter AH439 only

**Output:** 4-20 mA DC over the specified temperature range.

**Sensing element:** 1000  $\Omega$  platinum; 2 lead resistance thermometer, .00385 TCR.

**Accuracy:** Includes resistance thermometer tolerance, calibration accuracy, linearity, and ambient temperature effects.

±.75% of Temptran™ span for 32 to 122°F ambient.

±1.50% of Temptran™ span for -13 to 185°F ambient.

### Specification options

AH439	<b>Model number:</b> AH439 Humidity and Temperature Transmitter
D	<b>Enclosure</b> D: Duct mount, 8" probe length O: Outside Air/Wall mount, 4" probe length with shield, weather resistant enclosure S: Space mount W: Wall mount, 4" probe length, weather resistant enclosure
1	<b>Outputs</b> 4 to 20 mA DC
N10	<b>Calibration accuracy</b> (humidity transmitter) N10: ±1% from 10% to 80% (25 to 35°C) with NIST certificate N20: ±2% from 0% to 90% (25 to 35°C) with NIST certificate S20: ±2% from 0% to 90% (25 to 35°C)
S	<b>Temperature transmitter range</b> EN: -20°F to 140°F S: 0°F to 100°F A: 20°F to 120°F Bl: 0°F to 130°F KK: 30°F to 180°F N: 32°F to 122°F H: 40°F to 90°F Consult factory for other possible ranges
T1	<b>Sensing element cover</b> (omitted on "S" space mount models) T0= Sintered stainless steel; pressed on cover T1= Sintered stainless steel; screw on cover T2= Slotted stainless steel; screw on cover (NA on "O" outside air models)
AH439D1N10ST1 = Sample part number	

Specifications subject to change.

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