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Products manufactured in the United States

NEW

Products that are new to the catalog



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Kele

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2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

H_20K SERIES

DESCRIPTION

The **Series H_20K Humidity Transmitters** have been specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 5% to 95% RH with 2% accuracy and produce a two wire 4-20 mA linear output. All are available with an optional passive RTD or thermistor. The duct and OSA versions may also be fitted with a 4-20mA temperature transmitter.



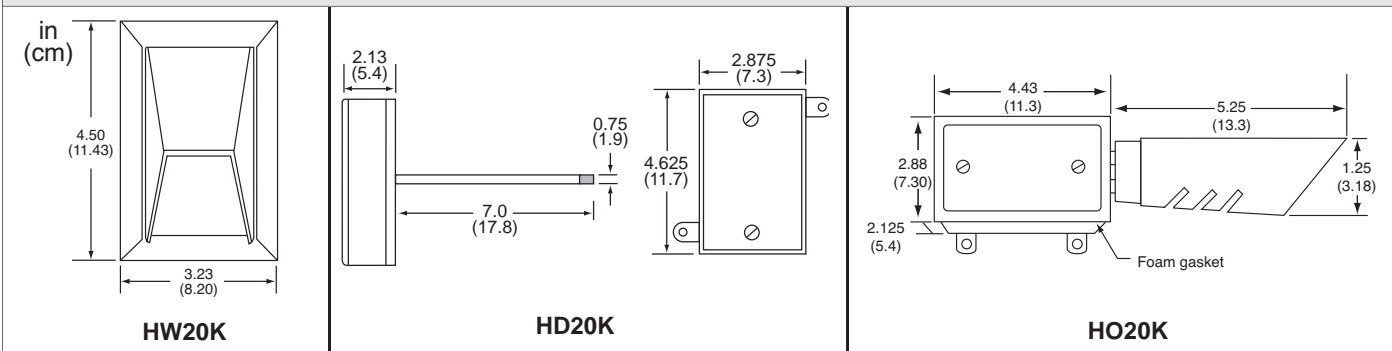
APPLICATION

The temperature compensated circuitry converts the relative humidity into a 4-20 mA signal. The optional temperature sensors, RTDs or thermistors, offer direct connection to most automation systems. On duct and OSA units, an optional 4-20 mA temperature transmitter may also be employed and is rangeable from -30° to 250°F (-34° to 121°C).

FEATURES

- **±2% accuracy (5% to 95%)**
- **Two-wire, 4-20 mA RH output**
- **Optional temperature thermistor**
- **Optional temperature RTD**
- **Optional temperature 4-20mA (duct or OSA)**

DIMENSIONS

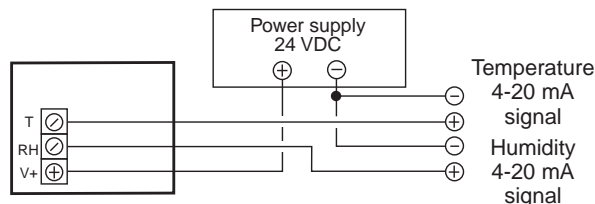
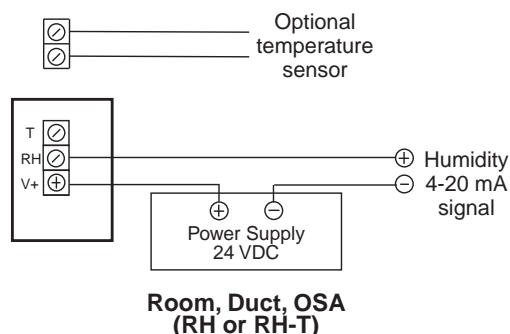


SPECIFICATIONS

Accuracy	±2% RH @ 77°F (25°C) from 5% to 95% RH	Sensor Protection (Duct and OSA)	Sintered filter
Stability	0.5% drift per year	Operating Humidity	0-100% RH non-condensing
Thermal Effect	Temperature compensated with less than 0.005% per °F (0.01% per °C)	Operating Temperature	-22° to 185°F (-30° to 85°C)
Supply Voltage	8.5-28 VDC	Enclosure	
Signal Output	4-20 mA, thermistor, RTD	Room	White plastic
Maximum Output		Duct/OSA	Weather resistant cast aluminum
Impedance	700Ω @ 24VDC (Supply voltage - 10V) / 0.02)	Wiring Terminations	Terminal block (22 to 16 AWG)
Measurement Range		Weight	
RH	0-100%	Room	0.18 lb (0.08kg)
RH Temperature	-20° to 140°F (-29° to 60°C) (See ordering information)	Duct/OSA	1.2 lb (0.55kg)
		Warranty	18 months



WIRING FOR RH ONLY AND "T" TEMPERATURE OPTION WIRING OR RH AND "TT" TEMPERATURE OPTION



MOUNTING ROOM AND DUCT SENSOR

DIAGRAM 1: The transmitter should be mounted so that the 9" (22.86 cm) probe is in the center of the duct. The transmitter should be duct mounted away from fans, corners, heating and cooling coils, and other equipment that will affect the measurement of relative humidity.

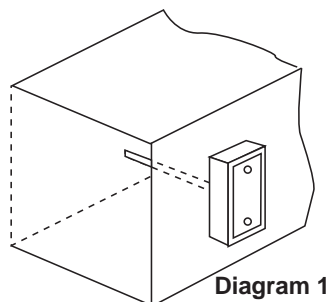


Diagram 1

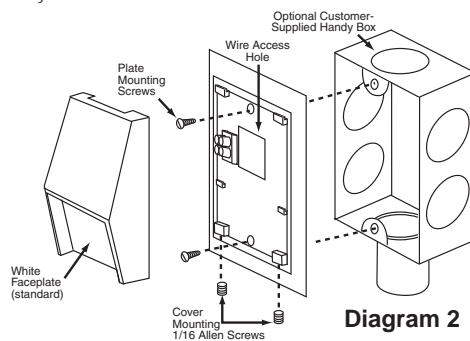
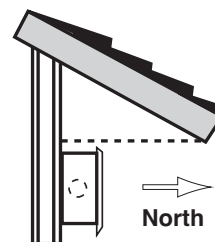


Diagram 2

Diagram 2: The sensor should be mounted approximately 5' (12.7 cm) above the floor, on an interior wall, away from any heating or cooling generating devices. Basic model comes with screw terminal block, two #6-32 screws for handybox mounting, and two #6 x 1" screws for direct wall mounting. Cover screws are #6-32 with a 1/16 allen key head. Precautions should be taken to prevent air infiltration from inside the wall.

MOUNTING OSA SENSOR

The transmitter should be mounted preferably on the north side (Northern Hemisphere) of a building under the eave, not above windows or doors. The transmitter should be mounted horizontally with the sensor slots pointing down.



ORDERING INFORMATION

MODEL	DESCRIPTION
HW20K	2% beige room humidity transmitter, 4-20 mA output
HW21K	2% white room humidity transmitter, 4-20 mA output
HD20K	2% duct-mount humidity transmitter, 4-20 mA output
HO20K	2% OSA-mount humidity transmitter, 4-20 mA output
OPTIONS (Temperature Sensors or Transmitters)	
--	No temperature sensor
T3	10,000Ω thermistor @ 77°F (25°C), Type III
T21	2252Ω thermistor @ 77°F (26°C), Type II
T22	3000Ω thermistor @ 77°F (26°C), Type II
T24	10,000Ω thermistor @ 77°F (25°C), Type II
T27	100,000Ω thermistor @ 77°F (26°C), Type II
T42	20,000Ω thermistor @ 77°F (26°C), Type IV
T63	1000Ω nickel SS flush mounted plate RTD @ 70°F (26°C), Type III (yellow leads)
T71	100Ω SS flush mounted plate RTD @ 32°F (0°C), Type III (blue leads)
T81	100Ω RTD @ 32°F (0°C), 381 platinum curve
T85	1000Ω 385 platinum RTD
T91	1000Ω 375 platinum RTD
TT-2	-20° to 140°F (-29° to 60°C) transmitter, 4-20 mA (duct and OSA only)
TT-3	0° to 100°F (-18° to 38°C) transmitter, 4-20 mA (duct and OSA only)

Example: HD20K-T3 Duct-mount humidity sensor with 10 kΩ Type III temperature sensor



DESCRIPTION

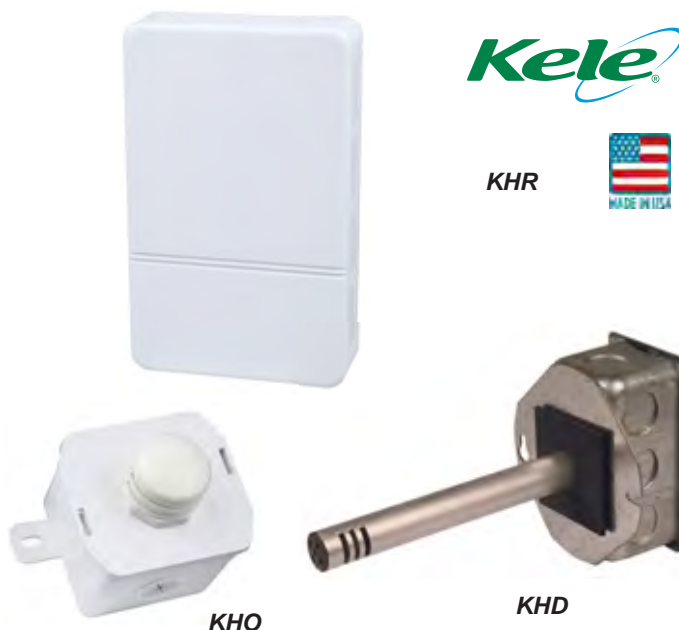
The **KHR, KHD, and KHO Series** humidity transmitters are specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 0% to 100%. The standard two-wire, 4-20 mA output provides low-cost humidity monitoring for building control. The RH transmitters are available with thermistor or RTD temperature sensors. They come in room (KHR), duct (KHD), and OSA (KHO) mounting styles.

OPERATION

The transmitter converts the relative humidity into a 4-20 mA signal with the latest microprocessor capacitive design. Multipoint factory automated calibration improves accuracy and repeatability. The optional temperature sensors, thermistor or RTD, offer direct connections to most automation systems.

FEATURES

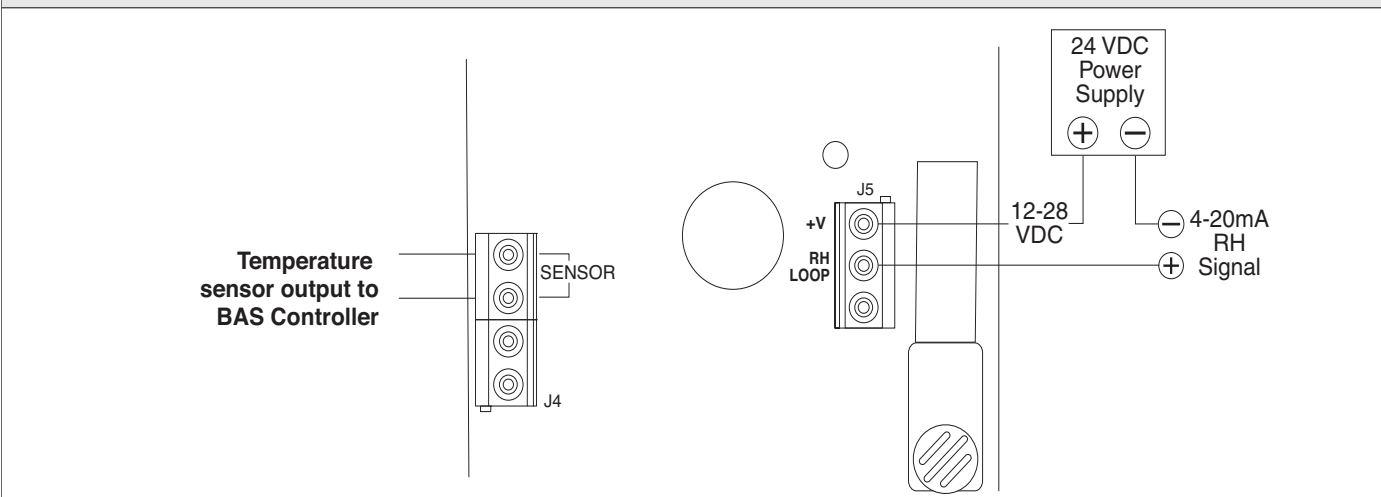
- **Calibration-free interchangeable sensors**
- **Twelve-point computerized calibration**
- **±2% accuracy (5% to 95% RH)**
- **Replaceable sensor probe (no re-calibration)**
- **No need to remove box to replace sensor probe**
- **Attractive room enclosure design**
- **Two-wire, 4-20 mA output, 0% to 100% RH**



SPECIFICATIONS

Accuracy	±3% RH from 0° to 70°C, 5% to 95% RH non-condensing	Enclosure	
Drift	<±0.5% per year	Room	White plastic, UL94HB
Thermal Effect	Temperature compensated with <0.008% RH per °C	Duct	Metal handy box
Supply Voltage	8.5-28 VDC	OSA	NEMA 3R plastic box
Signal Output	4-20 mA two-wire, loop-powered	Probe	
Maximum Output		Duct	Probe: 1/2" aluminum tube with expanded Teflon® filter
Impedance	775Ω @ 24 VDC (Supply voltage - 8.5 VDC) / 0.02,	OSA	Probe: 1/2" aluminum tube with 40 micron stainless steel sintered filter, Screw terminals
Sensing Technology	Precon HS-2000 capacitive	Wiring Terminations	
Operating Temperature	-22° to 185°F (-30° to 85°C)	Weight	
		Room	0.2 lb (.084 kg)
		Duct OSA	1 lb (0.45 kg)
		Warranty	18 months

WIRING



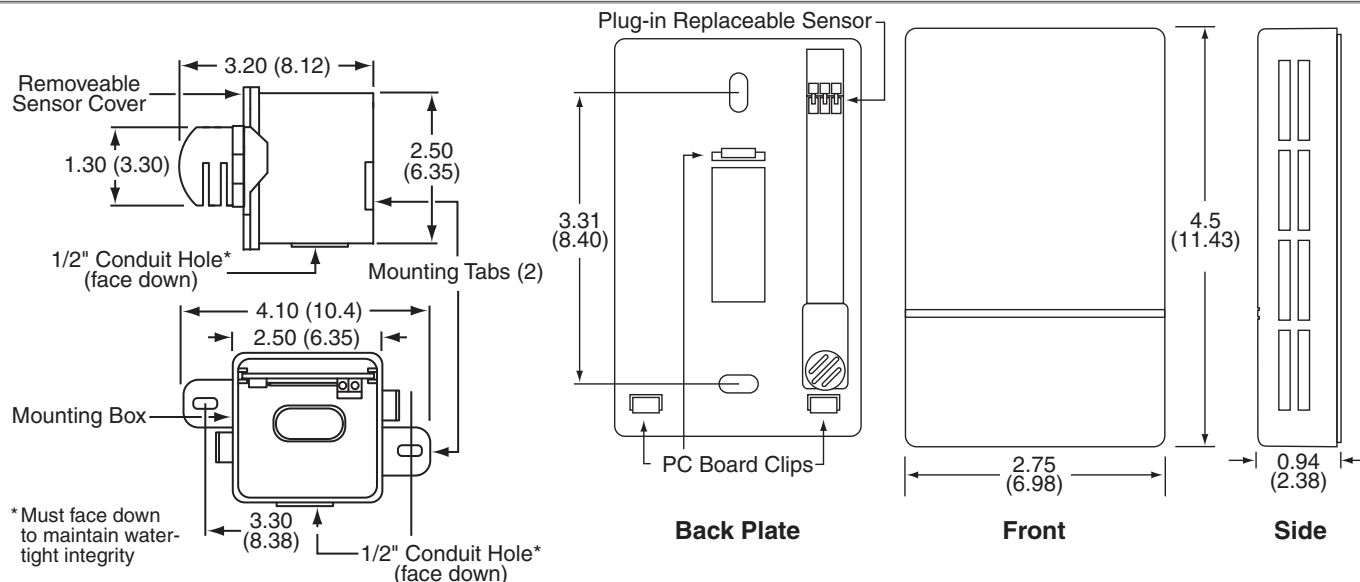


HUMIDITY

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

KH2 SERIES

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
KHD2	Duct mounted 2% humidity transmitter
KHO2	Outside air 2% humidity transmitter
KHR2	Wall mounted room/space 2% humidity transmitter
Optional temperature ranges	
T3	10,000Ω thermistor @ 77°F (26°C), Type III
T21	2252Ω thermistor @ 77°F (26°C), Type II
T22	3000Ω thermistor @ 77°F (26°C), Type II
T24	10,000Ω thermistor @ 77°F (26°C), Type II
T27	100,000Ω thermistor @ 77°F (26°C), Type II
T42	20,000Ω thermistor @ 77°F (26°C), Type IV
T81	100Ω RTD @ 32°F (0°C), 381 platinum curve
T85	1000Ω RTD @ 32°F (0°C), 385 platinum curve
T91	1000Ω RTD @ 32°F (0°C), 375 platinum curve
OPTIONS	
CL1	Custom one color logo, KHR2 only
J1	RJ11 externally-accessible communication jack (CCRJ11AD required), KHR2 only
J2	Internal RJ11 communication jack, KHR2 only
LCD	LCD digital humidity display, KHR2 only
LED	LED indicator lamp 24V AC/DC green, KHR2 only
MB	Momentary pushbutton switch, jumpered across sensor or pot (JP1), KHR2 only
WP	Weatherproof housing, KHD2 only

KHD2 — T3 — WP

Example: KHD2-T3-WP Duct mounted 2% humidity transmitter with 10,000Ω thermistor @ 77°F (26°C), Type III and weatherproof housing

ACCESSORIES

HSR	Replacement 2% humidity sensor for wall
HSD	Replacement 2% humidity sensor
HSO	Replacement 2% humidity sensor



DESCRIPTION

The **Model HS20K-C** Humidity Transmitter has been specifically designed for use with HVAC/BAS applications and, with its unique low-profile design, is perfect for museums, institutions or other architecturally challenging locations. The HS20K will monitor humidity from 5% to 95% with 2% accuracy with an analog current output. Passive temperature sensors are optional.

FEATURES

- **2% accuracy**
- **4-20mA or 0-5 VDC analog outputs**
- **Passive temperature sensors output optional**
- **Stainless steel plate mounted**



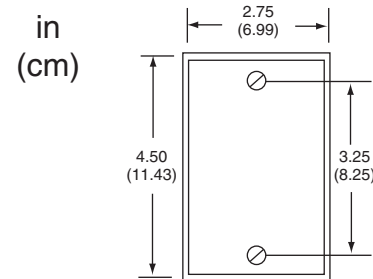
HS20K



SPECIFICATIONS

Accuracy	±2% RH from 5% to 95% RH
Drift	<±0.5% drift per year
Thermal Effect	Temperature compensated with less than 0.014% per °F (0.008% per °C)
Supply Voltage	
HS20K-C	8.5-28 VDC
HS20K-V	5 VDC
Signal Output	
HS20K-C	4-20 mA, two wire loop powered, passive thermistor or RTD
HS20K-V	0 to 5 VDC, passive thermistor or RTD
Maximum Output Impedance	775Ω @ 24VDC (Supply voltage – 8.5V) / 0.02
Sensing Technology	Precon HS-2000 capacitive
Operating Humidity	0-70% RH non-condensing
Operating Temperature	22° to 195°F (-30° to 85°C)
Enclosure	Flush mounted stainless steel plate
Wiring Terminations	Terminal block (22 to 16 AWG)
Weight	3.2 oz (84g)
Warranty	18 months

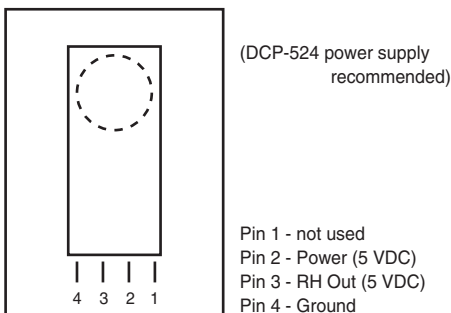
DIMENSIONS



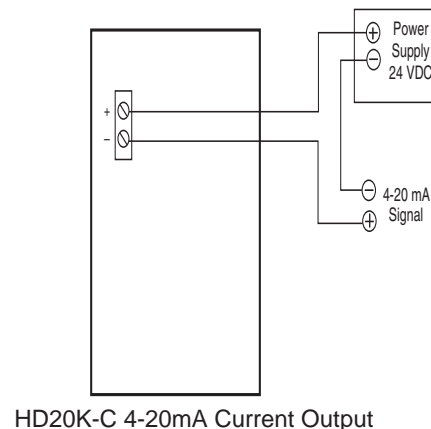
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HUMIDITY

VOLTAGE WIRING



WIRING



NEW!



HUMIDITY

2% ROOM HUMIDITY TRANSMITTER

HS20K SERIES

ORDERING INFORMATION

MODEL	DESCRIPTION
HS-20K-V	Stainless steel flush mounted humidity sensor with 0-5 VDC output
HS-20K-C	Stainless steel flush mounted humidity sensor with 4-20 mA output
OPTIONS	
T3	10,000Ω SS flush mounted plate thermistor @ 77°F (26°C), Type III (gray leads)
T21	2252Ω SS flush mounted plate thermistor @ 77°F (26°C), Type III (green leads)
T22	3000Ω SS flush mounted plate thermistor @ 77°F (26°C), Type III (blue leads)
T24	10,000Ω SS flush mounted plate thermistor @ 77°F (26°C), Type III (yellow leads)
T27	100,000Ω SS flush mounted plate thermistor @ 77°F (26°C), Type III (gray leads)
T42	20,000Ω SS flush mounted plate thermistor @ 77°F (26°C), Type III (green leads)
T63	1000Ω nickel SS flush mounted plate RTD @ 70°F (26°C), Type III (yellow leads)
T71	100Ω SS flush mounted plate RTD @ 32°F (0°C), Type III (blue leads)
T81	100Ω SS flush mounted plate RTD @ 32°F (0°C), Type III (yellow leads)
T85	1000Ω SS flush mounted plate RTD @ 32°F (0°C), Type III (blue leads)
T91	1000Ω SS flush mounted plate RTD @ 32°F (0°C), Type III (green leads)

HS20K-V - T3

Example: HS20K-V-T3 2% SS Flushmount plate humidity transmitter with 0-5 VDC output with Type III 10,000Ω thermistor

	RELATED PRODUCTS	PAGE
DCP-1.5-W-C	Power supply, 24 VAC In to special DC output (Specify output voltage when ordering, 1.5-24 VDC)	837
DCP-524	Power supply, 24 VAC IN to 24 VDC and 5 VDC OUT	839
DCPA-1.2-C	Power supply, 120 VAC In to 24 VAC/ Special DC output (Specify output voltage when ordering, 1.3-27 VDC)	836

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HUMIDITY

NEW!



2% WATERPROOF / WASHDOWN HUMIDITY TRANSMITTER

EHRH



DESCRIPTION

The **EHRH Series** humidity transmitters are specifically designed for washdown areas and condensing atmospheres and offer thermistor or 4 to 20 mA temperature output. The **EHRH Series** measures relative humidity with a 2% resistive sensor and can withstand 100% saturation. It is made to be surface mounted to a single-gang outlet box or mounted directly to the wall. The **EHRH Series** are furnished with a waterproof case, connector, and stainless steel cover with leads for termination inside the wall.

FEATURES

- **Wash down waterproof design**
- **4-20 mA output**
- **Easy one-point field calibration**
- **Rugged metal cover**
- **Temperature output: thermistor or 4 to 20 mA**



APPLICATION

- Swimming pools
- Green houses
- Hospital suites
- Food processing
- Gymnasium

SPECIFICATIONS

Accuracy	
Humidity	2% (30% to 95%)
Temperature (EHRHT)	±0.5°F (±0.3°C)
Supply Voltage	24 VDC ±20% (loop powered)
Signal Output	4-20 mA
Maximum Output	
Impedance	700Ω @ 24 VDC
Measurement Range	
Humidity	0% to 100%
Temperature	-20° to 140°F (-29° to 60°C)
Sensing Technology	
Humidity	Bulk polymer resistive
Temperature	Platinum 1000Ω 385 RTD (EHRHT) Type III 10 kΩ

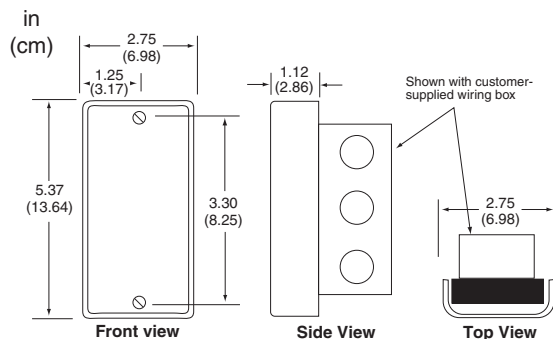
Adjustments

Zero	±20%
Span	±10%
Sensitivity	0.1% RH
Operating Temperature	-4° to 129°F (-20° to 54°C)
Enclosure Rating	Epoxy-hardened waterproof case Cover: Stainless steel
Wiring Terminations	Flying leads
Weight	0.75 lb (0.34 kg)
Warranty	1 year

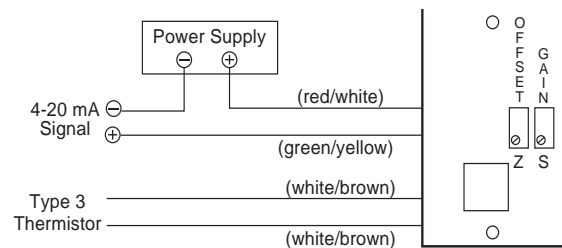
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HUMIDITY

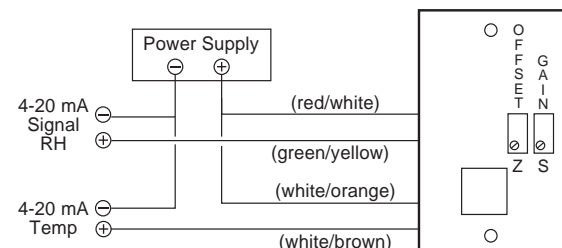
DIMENSIONS



WIRING



EHRH



EHRHT

ORDERING INFORMATION

MODEL	DESCRIPTION
EHRH	Waterproof/Washdown 2% RH transmitter
EHRHT	Waterproof/Washdown 2% RH temperature transmitter



HUMIDITY

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

GEH2 SERIES

DESCRIPTION

Model **GEH2 Series** 2% Accuracy Humidity Transmitters are designed specifically for commercial building automation systems (BAS). The room, duct and OSA transmitters use replaceable sensor tips and switch selectable transmission including 4-20mA, 0-5V or 0-10VDC. The **GEH** also has an optional temperature transmitter output with selectable outputs (RH&T must be the same type). All duct and OSA enclosures are rated for IP42 or NEMA 3R applications.

FEATURES

- **±2% accuracy**
- **Temperature compensated**
- **Field-selectable 4-20 mA, 0-10V, or 0-5V outputs**
- **Replaceable sensor**
- **Optional temperature transmitter**



APPLICATIONS

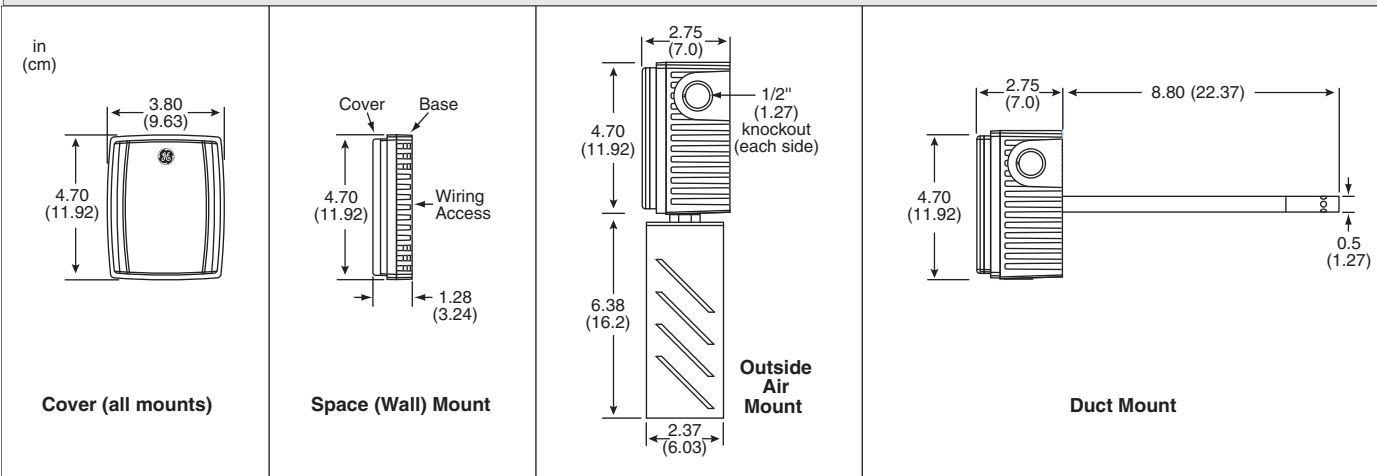
- **HVAC building controls**
- **Hospitals/pharmaceuticals**
- **Clean rooms**
- **Swimming pools**
- **Museums / archives**
- **Animal rooms**

SPECIFICATIONS

Accuracy	2% (10% to 90%)
Supply Voltage	12-30 VDC, 2.4 VA
Signal Output	4-20 mA/0-5V/0-10V selectable; 0-100% RH
Maximum Output Impedance (mA)	700Ω maximum @ 24 VDC
Minimum Output Impedance (VDC)	10 kΩ minimum
Sensing Technology	Capacitive and replaceable
Operating Humidity	0% to 99%, non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)

Enclosure Rating	
Room	ABS plastic, UL94V Room Installed IP20, NEMA 1
Duct/OSA	IP42, NEMA 3R Stainless steel with removable tip, PTFE Teflon® shield,
Wiring Terminations	16 to 22 AWG terminals
Approvals	CE
Weight	
Room	0.5 lb. (0.23 kg)
Duct/OSA	1.3 lb. (0.59 kg),
Warranty	2 years

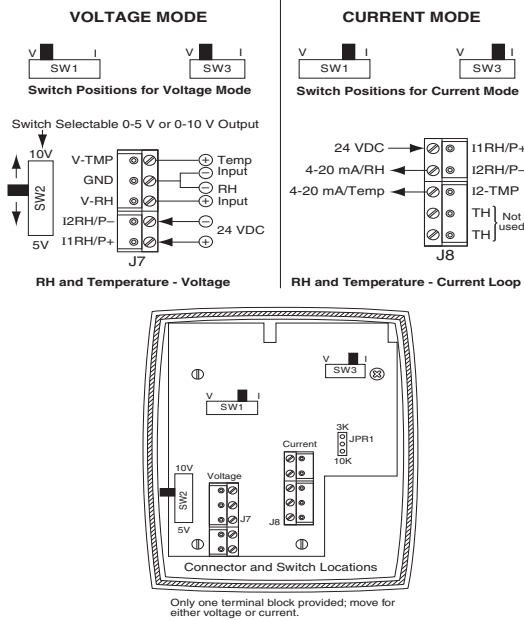
DIMENSIONS





2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS
GEH2 SERIES

WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION
GEH2	RH transmitter 2% accuracy
RH MOUNTING ENCLOSURE	
S	Decorative room mounting enclosure
D	Duct mounting with ABS plastic IP42 enclosure
O	OSA mounting with ABS plastic IP42 enclosure and weather shield
SN	Decorative room mounting enclosure with NIST certificate
DN	Duct mounting with ABS plastic IP42 enclosure with NIST certificate
ON	OSA mounting with ABS plastic IP42 enclosure and weather shield with NIST certificate
TEMPERATURE OPTION	
TT0	Transmitter, 40° to 90°F (4.4° to 32.2°C) (S, D, SN, and DN only)
TT2	Transmitter, -20° to 140°F (-29° to 60°C) (D, O, DN, and ON only)
TT3	Transmitter, 0° to 100°F (-18° to 38°C) (All enclosure mounts)

Example: GEH2-SN 2% room RH transmitter with NIST certificate
GEH2-D 2% duct RH transmitter

RELATED PRODUCTS

GEH2-RH 2% replaceable RH tip for room, duct, and OSA (RH only)
GEH2-RHTT 2% replaceable RH and temperature tip for room, duct, and OSA with TT option transmitters



2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

HMD60, HMD70, HMW60, HMW70 AND WMK 41

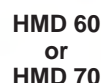
DESCRIPTION

Vaisala's **Models HM_60 and HM_70 Wall- and Duct- Mount Relative Humidity Transmitters** have been specifically designed for use in HVAC/BAS and pharmaceutical applications. These instruments measure relative humidity from 0% to 100%. They are easily installed and meet the European CE standards.

Five-minute field calibration is possible using the Model HMK 41K Humidity Calibrator. When accuracy adjustment or sensor replacement is necessary, the transmitter can be calibrated in seconds with a single potentiometer without disturbing operation. This saves hours of maintenance time and assures high accuracy.



HMW 60
or
HMW 70



FEATURES

- Comes with NIST certificate
- Full 0% to 100% RH measurement
- State-of-the-art replaceable sensor technology

SPECIFICATIONS

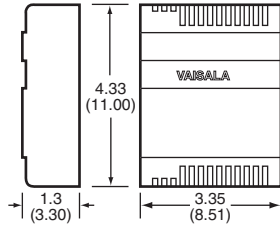
HM_60, HM_70		Approvals		CE
Accuracy		Weight		
Humidity	±2% RH (0% to 90% RH) @68°F (20°C)	Wall	0.32 lb (0.14 kg)	
Temperature	±0.2°C	Duct	1.68 lb (0.76 kg)	
Supply Voltage		Warranty		1 year
60 Series	10 to 35 VDC	HM41K		
70 Series	10 to 35 VDC, 9 to 24 VAC (signal dependant)			
Maximum Output				
Impedance	700Ω @ 24 VDC			
Minimum Output		Sensor Operation		
Impedance	3000Ω min	Handheld, onsite calibrator		
Measurement Range		Reference Probe Accuracy		
Humidity		±1% RH (0% to 90% RH)		
Wall Mount	0 to 95% RH	±2% RH (90% to 100% RH)		
Duct Mount	0% to 100%	Measuring range		
Temperature		0% to 100% RH, -40° to 140°F (-22° to 78°C)		
Wall Mount	23° to 131°F (-5° to 55°C)	Operating temperature		
Duct Mount	-4° to 176°F (-20° to 80°C)	Storage temperature		
Sensing Technology		-4° to 140°F (-20° to 60°C)		
Capacitive and replaceable, Vaisala HUMICAP® 180		Temperature coefficient		
		+0.04% RH/°C typical		
Operating Temperature		Battery		
Electronics	23° to 131°F (-5° to 55°C)	Four AA (LR6) (not included)		
Sensor Head (Duct)	-4° to 176°F (-20° to 80°C),	Agency approvals		
Enclosure Rating	Cast aluminum NEMA 4 (IP55), ABS plastic	CE, NIST certificate		
Wiring Terminations		Weight		
Screw terminals (20-16 AWG)		Warranty		
		1 year		



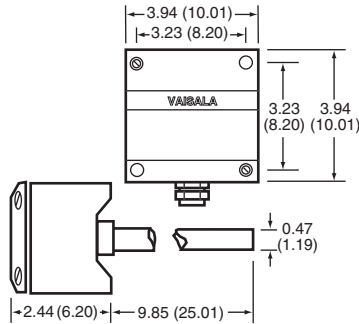
2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS HMD60, HMD70, HMW60, HMW70 AND WMK 41

DIMENSIONS

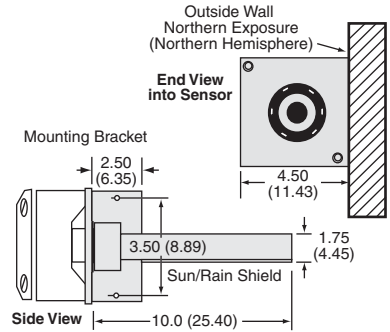
in
(cm)



HMW 60/HMW 70

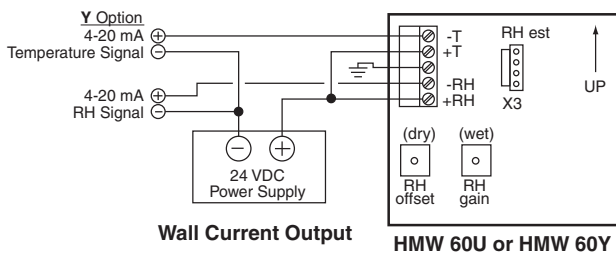


HMD 60/70 Duct RH



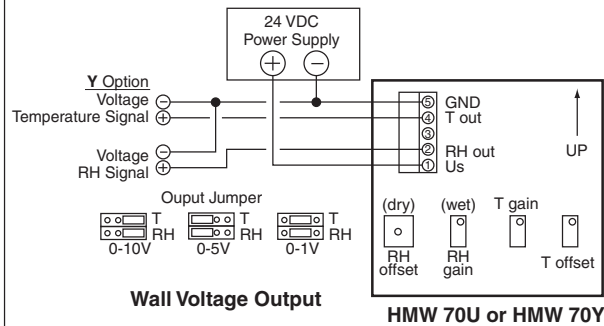
WMK-20 Outside Air Bracket

WIRING



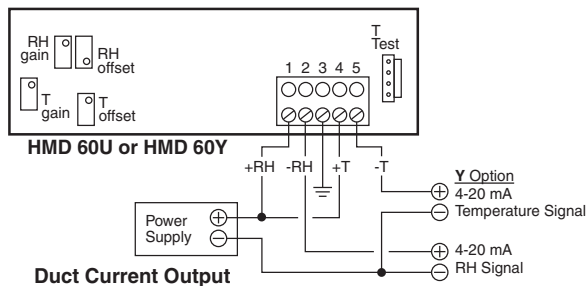
Wall Current Output

HMW 60U or HMW 60Y

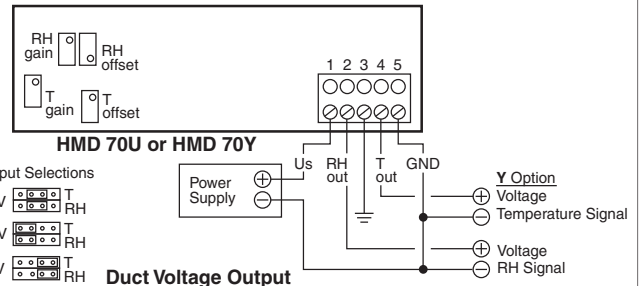


Wall Voltage Output

HMW 70U or HMW 70Y



Duct Current Output



Duct Voltage Output

ORDERING INFORMATION

MODEL
HMD60U
HMD60Y
HMD70U
HMD70Y
HMW60U
HMW60Y
HMW70U
HMW70Y

DESCRIPTION
Duct RH transmitter, 4-20 mA output
Duct RH and temperature transmitter, 4-20 mA output
Duct RH transmitter 0-1V, 0-5V, 0-10V output
Duct RH and temperature transmitter, 0-1V, 0-5V, 0-10V output
Wall mount, RH transmitter, 4-20 mA output
Wall mount, humidity with 4-20 mA output, temperature with 4-20 mA output
Wall mount, RH transmitter, 0-1 VDC, 0-5 VDC, 0-10 VDC outputs
Wall mount, humidity, and temperature, 0-1 VDC, 0-5 VDC, 0-10 VDC outputs

RELATED PRODUCTS

HMK41K
HUMICAP180
WMK-20

2% handheld calibrator with calibration cable
Replacement humidity sensor (replaces 0062HM)
OSA/Wall-mount bracket



HUMIDITY

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

A/RH2 SERIES

DESCRIPTION

Model A/RH Relative Humidity Transmitters provide RH readings at $\pm 2\%$ accuracy using a ceramic resistive sensor offering a 20% to 90% operating range. The transmitters come in wall, duct, and OSA mounting styles. They have multiple field-selectable outputs, including 4-20 mA, 0-10V, and 0-5V signals. The supply power is also selectable as 24 VDC or 24 VAC. The duct and OSA mount versions are housed in weatherproof boxes with twist-off caps (no cover screws).

FEATURES

- Popular room housing
- Accuracies of 2%, 3% or 5%
- Three-year warranty
- Duct and OSA twist-off NEMA 4 housing
- 24 VDC or 24 VAC power (field-selectable)
- 4-20 mA, 0-10V, or 0-5V signal (field-selectable)
- Field calibratable
- Digital display option
- Optional temperature sensor

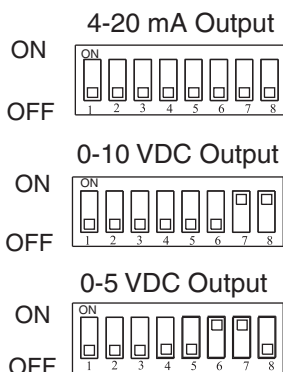


SPECIFICATIONS

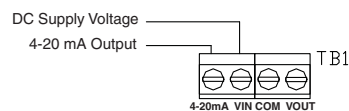
Accuracy	$\pm 2\%$ @ 77°F (25°C) from 10% to 95%	Duct/OSA Dimensions	Plastic weatherproof
Thermal Effect	<0.005% per °F (<0.01 per °C)	Room	3.8"H x 2.8"W x 0.9"D (9.8 x 7 x 2.3 cm)
Supply Voltage	12-40 VDC or 24 VAC, selectable	Duct	3.6" (9 cm) Ø head with 8.15"L (20 cm) probe 0.75" (1.9 cm) Ø
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC (field selectable)	OSA	3.6" (9 cm) Ø head with 3.0"L (7.6 cm) probe 1.4" (3.6 cm) Ø
Measurement Range	0% to 100%	Approvals	CE, RoHS
Sensing Technology	Capacitive	Warranty	5 years
Operating Temperature			
Room	32° to 122°F (0° to 50°C)		
Duct/OSA	-40° to 140°F (-40° to 60°C)		
Enclosure			
Room	Plastic Delta-style		

WIRING

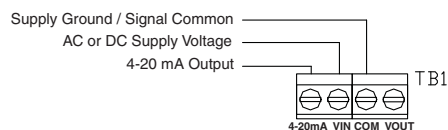
Output Selection Switches (SW 1)



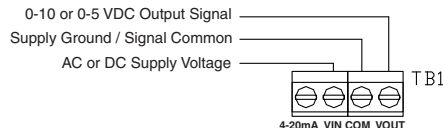
2 Wire Current Output Signal



3 Wire Current Output Signal



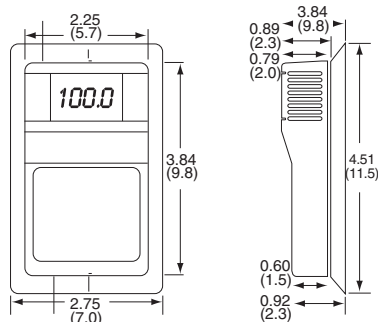
Voltage Output Signal



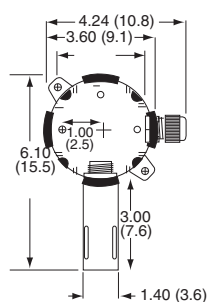


DIMENSIONS

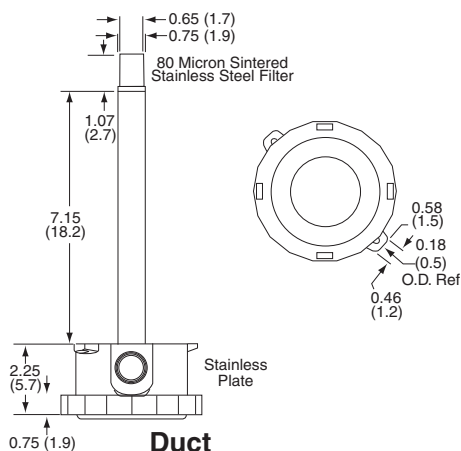
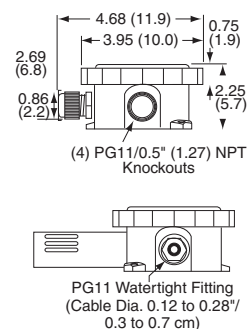
in
(cm)



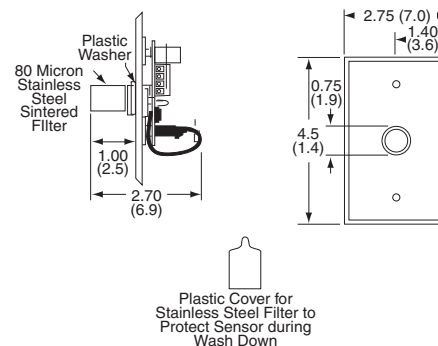
Room



Outside



Duct



Stainless Plate

ORDERING INFORMATION

MODEL	DESCRIPTION
A/RH2	2% accuracy humidity transmitter
AN	Type II 10,000Ω thermistor
CP	Type III 10,000Ω thermistor
20K	20,000Ω thermistor
100	100Ω 385 PT RTD
IK	1,000Ω 385 PT RTD
R	Room
D	Duct
O	Outside air
SP	Stainless steel plate passive sensors only
-	No display
LCD	LCD display (current mode, room units only)

A/RH2 - 100 - R - LCD

Example: A/RH5-100-R-LCD A 2% accuracy room humidity transmitter with 100Ω RTD & LCD display



HUMIDITY

ROOM, DUCT, AND OSA 2% HUMIDITY TRANSMITTERS

HT2D, HT20, HT2S

DESCRIPTION

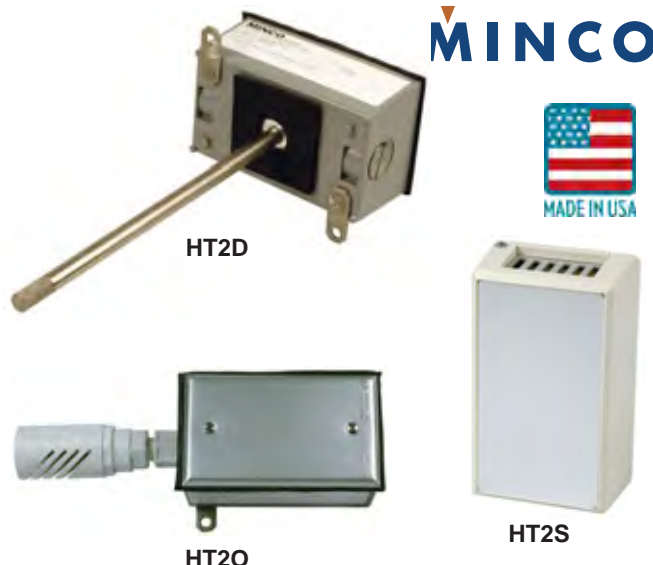
Model HT relative humidity transmitters are full-range, high-accuracy building automation transmitters. **Model HT** covers 0% to 100% RH over a wide temperature. The standard two-wire, 4-20 mA output provides low cost space, duct, and outdoor monitoring for building control.

OPERATION

The transmitter converts the relative humidity into a 4-20 mA signal. The **HT** transmitters have a microprocessor that performs the temperature compensation calculations from an onboard RTD. The microprocessor maintains both high accuracy and low cost with a wide humidity and operational temperature span.

An added optional temperature output is available in the same enclosure. It comes with a 4-20 mA signal and a large selection of temperature ranges.

The housings for the duct- and OSA-mount configurations are suitable for outdoor use. The aluminum cast box is gasketed to maintain a rain-tight environment for the transmitter.



FEATURES

- **100% replacement for discontinued Hycal transmitters**
- **Advanced wall-mount design**
- **Weather-resistant housing for duct and OSA use**
- **Dual output option (humidity and temperature)**

SPECIFICATIONS

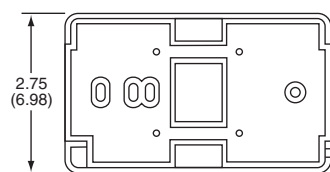
Accuracy		Sensing Technology	
Humidity	±2% (5 to 90% RH)	Humidity	Capacitive monolithic IC
Temperature	±0.5°F (0.27°C)	Temperature	Platinum 1000Ω RTD 385 curve
Supply Voltage	9.4-35 VDC (24V nominal)	Operating Temperature	
Signal Output	4-20 mA	Room	-10° to 150°F (-23° to 65°C)
Maximum Output		Duct/OSA	-10° to 185°F (-23° to 85°C)
Impedance	(Power supply – 9.4V) / 0.02 = load, i.e., (24V – 9.4V) / 0.02 = 730Ω	Wiring Terminations	Nonpolar terminals (22-14 AWG wire)
Measurement Range		Weight	
Humidity	0 to 100% RH	Room	0.2 lb (0.1 kg)
Temperature		Duct/OSA	1.2 lb (0.55 kg)
"EN" Range	-20° to 140°F (-29° to 60°C)	Warranty	1 year
"S" Range	-0° to 100°F (-18° to 38°C)		
"H" Range	40° to 90°F (4° to 32°C)		



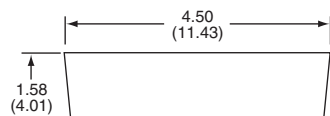
ROOM, DUCT, AND OSA 2% HUMIDITY TRANSMITTERS

HT2D, HT2O, HT2S

DIMENSIONS

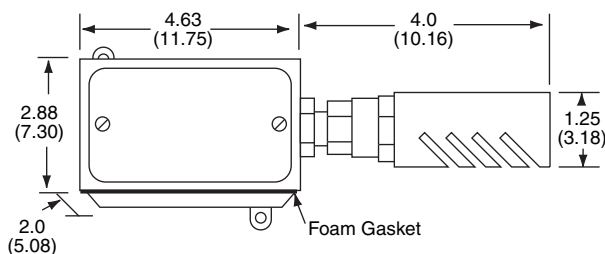


Housing Bottom View

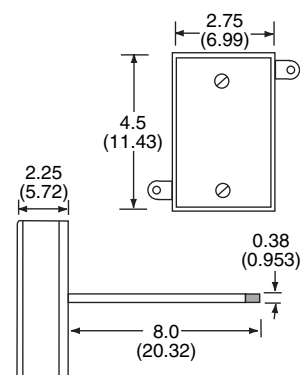


Housing Top View

HT2S

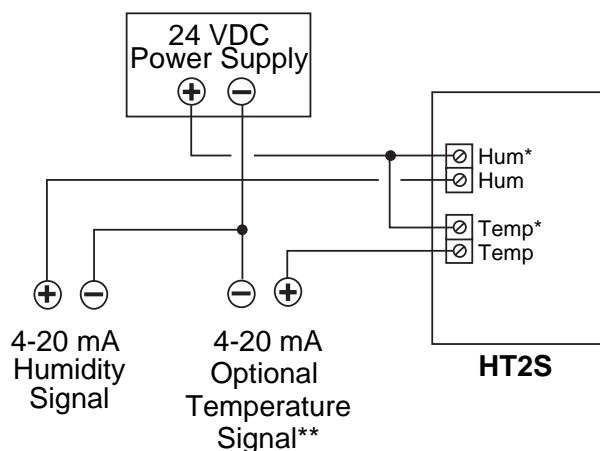


HT2O



HT2D

WIRING



HT2S

* Non-polar connection

** Needs humidity connection to output temperature signal properly

ORDERING INFORMATION

MODEL	DESCRIPTION
HT2	2% relative humidity transmitter
D	Duct mount, weather resistant box, 8" probe
O	Outside air mounting, weather resistant box with weather shield
S	Space room/office mounting
1	4-20 mA DC output
NT	No temperature transmitter
EN	Range codes per Minco letter ranges (-20°/140°F) or (-29°/60°C)
S	Range codes per Minco letter ranges (0°/100°F) or (-18°/38°C)
H	Range codes per Minco letter ranges (40°/90°F) or (4°/32°C)

HT2

D

1

NT

Example: HT2D1NT 2% RH duct transmitter with 8" probe, no temperature output



HUMIDITY

1% AND 2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

HT829

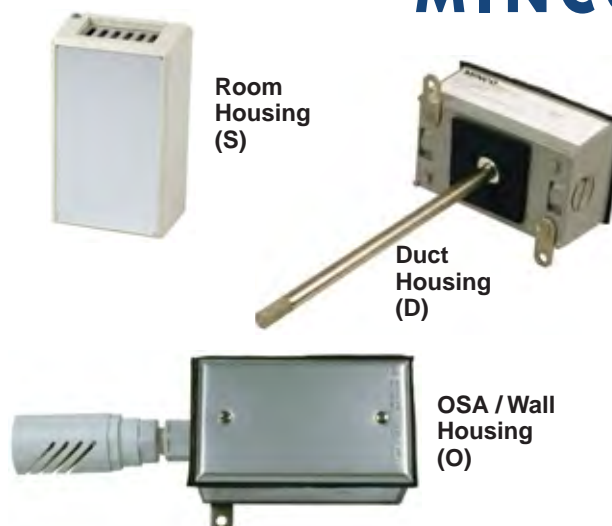
DESCRIPTION

The **Model HT829 Relative Humidity Transmitter** measures 0% to 100% RH over a range of -10° to 185°F (-23° to 85°C). The standard two-wire, 4-20 mA output provides low-cost space, duct, and outdoor monitoring or process and industrial building control. A temperature sensor built into the integrated circuit provides temperature compensation over the full temperature range. The **HT829 Series** is field-rangeable for field recalibration.

FEATURES

- *Temperature-compensated IC sensor*
- *One-point field calibration, RH or temperature*
- *Weatherproof housing for OSA and duct*
- *1% or 2% RH accuracy*
- *Sintered filter*

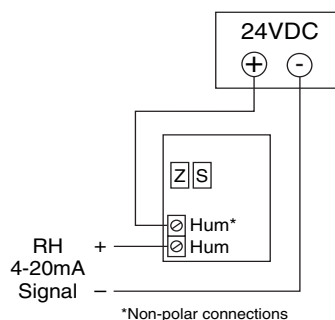
MINCO



SPECIFICATIONS

Accuracy		Dimensions	
1% units	±1% from 10% to 80% RH	Room	4.5"H x 2.8"W x 1.5"D (11 x 7 x 4 cm)
2% units	±2% from 0% to 90% RH	Duct	4.6"L x 2.9"W x 2.3"D (22 x 7.3 x 5.7 cm), 4.6" (11.8 cm) probe length
Time Constant	60 sec in slow-moving air	OSA	10.2"L x 2.7"W x 2.3"D (26x 7 x 5.7 cm), 8" (20 cm) probe length 1.25" (3.2 cm) Ø,
Supply Voltage	9.4 VDC min to 35 VDC max	Weight	
Signal Output	Two-wire, 4-20 mA over 0% to 100% RH	Room	0.19 lb (0.084 kg)
Maximum Output Impedance	730Ω @ 24 VDC (Power supply - 9.4) / 0.02 A = Ω	Duct/OSA	1.2 lb (0.55 kg)
Sensing Technology	Capacitive monolithic IC	Warranty	1 year
Sensor Protection	Sintered filter		
Calibration	One-point adjustment		
Adjustments	Zero, noninteracting		
Operating Temperature			
Room	-10° to 150°F (-23° to 66°C)		
Duct/OSA	-10° to 185°F (-23° to 85°C),		
Wiring Terminations	Nonpolar terminals, connect either way (22-14 AWG wire)		

WIRING



*Non-polar connections

ORDERING INFORMATION

MODEL	DESCRIPTION
HT829D1N1	1% Duct mount RH transmitter, includes NIST certificate
HT829D1S2	2% Duct mount RH transmitter
HT829O1N1	1% OSA RH transmitter, includes NIST certificate
HT829O1S2	2% OSA RH transmitter
HT829S1N1	1% Wall mount RH transmitter, includes NIST certificate
HT829S1S2	2% Wall mount RH transmitter



2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS BA/H200 SERIES

DESCRIPTION

The **BA/H200 Series $\pm 2\%$ Accuracy Humidity Transmitters** from BAPI are designed specifically for HVAC systems. Room sensors are available in the traditional Delta style enclosure or the new BAPI STAT 4. All Duct Units feature medical-grade closed cell foam to seal the probe insertion hole and to absorb vibration. All Outside Air Units have etched Teflon leadwires and are built to withstand high humidity and condensation and perform under real world conditions. Duct and OSA units are available in weatherproof enclosures selectable from IP66 or NEMA 3R. RH transmitter outputs include 4-20 mA, 0-5V, and 0-10V with replaceable sensor tips.

FEATURES

- Popular room housing
- 2% Accuracy
- Three-year warranty
- Duct and OSA twist-off NEMA 4 housing
- 24 VDC or 24 VAC power (field-selectable)
- 4-20 mA, 0-10V, or 0-5V signal (field-selectable)
- Field calibratable
- Optional temperature sensor



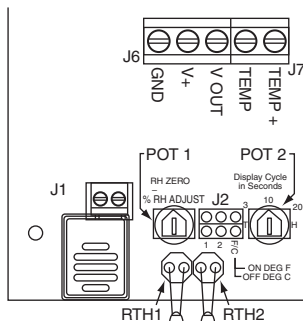
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HUMIDITY

SPECIFICATIONS

Accuracy	2% from 20% to 95% RH	Operating Humidity	0-100%, non-condensing
Supply Voltage	15-26 VAC/VDC	Operating Temperature	
Signal Output	4-20 mA, 0-5 VDC	Room	32° to 122°F (0° to 50°C)
Maximum Output		Duct/OSA	-22° to 158°F (-30° to 70°C)
Impedance (mA)	700 Ω maximum @24 VDC	Enclosure	
Minimum Output		Room	ABS Plastic, UL94V-0
Impedance (VDC)	10 k Ω minimum	Duct/OSA	BB NEMA 4, UV resistant, UL94V-0 WP NEMA 3R, Cast aluminum
Sensing Technology	Resistive with ceramic substrate	Wiring Terminations	Four wire, 16 to 22 AWG terminals
Sensor Protection		Approvals	CE, RoHS
Room	Room Gore-Tex®	Warranty	2 years
Duct/OSA	100 micron stainless steel sintered filter		

WIRING



Room Humidity Circuit Board

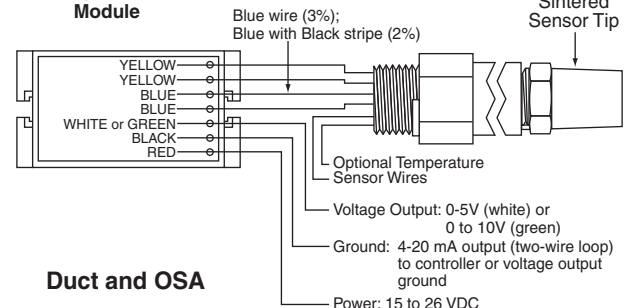
4 TO 20 mA TERMINATION

Terminal Legend	Function
GND	4 to 20 mA signal (to analog input of controller)
V+	+15 to +26 VDC
TEMP	Optional temperature sensor
TEMP	Optional temperature sensor

0 TO 5 VDC TERMINATION

Terminal Legend	Function
GND	To controller ground (GND or common)
V+	+15 to +26 VAC/VDC
V OUT	0 to 5 VDC or 0 to 10V signal (to analog input of controller)
TEMP	Optional temperature sensor
TEMP	Optional temperature sensor

Humidity Transmitter Module



Duct and OSA



HUMIDITY

BAPI ROOM DUCT, AND OSA HUMIDITY TRANSMITTERS BA/H200 SERIES

ORDERING INFORMATION

BAPI ROOM HUMIDITY TRANSMITTER	
MODEL	DESCRIPTION
BA/H200-R	2% Humidity Transmitter, 4-20 mA output, Delta enclosure
BA/H210-R	2% Humidity Transmitter, 4-20 mA output, Delta Enclosure
BA/H220-B4X-Z-CG	2% Humidity Transmitter, 4-20 mA output, BAPI STAT 4
BA/H205-B4X-Z-CG	2% Humidity Transmitter, 0-5 VDC output, BAPI STAT 4
BA/H210-B4X-Z-CG	2% Humidity Transmitter, 0-10 VDC output, BAPI STAT 4
BA/H212-B4X-Z-CG	2% Humidity Transmitter, 2-10 VDC output, BAPI STAT 4
DISPLAY OPTION	
D	LCD Display

Example: BA/H220-B4X-Z-CG-D 2% Room humidity transmitter, 4-20 mA output, BAPI STAT 4 with LCD display

BAPI DUCT HUMIDITY SENSOR	
MODEL	DESCRIPTION
BA/H200	2% Humidity w/ Interchangeable Output of 0-5 VDC or 4-20 mA output
BA/H210	2% Humidity, 0-10 VDC output
BA/H212	2% Humidity, 2-10 VDC output
ENCLOSURE OPTION	
D-BB	BapiBox Enclosure, IP66 Rated, UV Resistant Polycarbonate
D-BB2	BapiBox2 Enclosure, IP66 Rated, UV Resistant Polycarbonate
D-WP	Weatherproof Enclosure, NEMA 3R Rated Metal Enclosure

Example: BA/H200-D-BB2 2% Duct mount humidity transmitter, 4-20 mA output, BB2 enclosure

BAPI OSA HUMIDITY SENSOR	
MODEL	DESCRIPTION
BA/H200	2% Humidity w/ Interchangeable Output of 0-5 VDC or 4-20 mA output
BA/H210	2% Humidity, 0-10 VDC output
BA/H212	2% Humidity, 2-10 VDC output
ENCLOSURE OPTION	
O-BB	BapiBox Enclosure, IP66 Rated, UV Resistant Polycarbonate
O-BB2	BapiBox2 Enclosure, IP66 Rated, UV Resistant Polycarbonate
O-WP	Weatherproof Enclosure, NEMA 3R Rated Metal Enclosure

Example: BA/H200-O-WP 2% OSA mount humidity transmitter, 4-20 mA output, weather proof housing

RELATED PRODUCTS

		PAGE
BA/ADP-525-7-CPW	Copla white 7" x 5.25" adaptor plate	1154
BA/ADP-525-7-OFW	Off white 7" x 5.25" adaptor plate	1154
BA/ADP-525-7-WMW	Warm white 7" x 5.25" adaptor plate	1154
BA/FOAMBACK	White foam back insulator	1154
BA/FOAMBACK-GRAY	Gray foam back insulator	1154
UR	Moisture-resistant three-wire butt splice	193



2% MULTIFUNCTION HUMIDITY AND TEMPERATURE TRANSMITTER

BAPI-COM SERIES

DESCRIPTION

The **BAPI-COM Series** multi-functional humidity and temperature sensor is the newest innovative product from BAPI. It features relative humidity measurement and a full function temperature sensor with temperature setpoint, occupant override, an optional easy-to-read display, all over just two wires. Many existing buildings have two wire sensors but do not have the other sensor features that customers expect in today's sophisticated systems. The BAPI-Com system uses those existing two wires to replace multiple pairs of wires dedicated to just one task.

This retrofit sensor can update old systems to a new look without pulling new wire or disrupting the occupants while saving on labor. The sensors are powered and communicate over two wires to a Communication Output Module for use by the BAS system. The outputs are configurable as a thermistor, voltage, resistance or dry contact override output. The sensor is powered by the Communication Output Module which is powered by any 24VDC/VAC source.



NEW!



DIMENSIONS

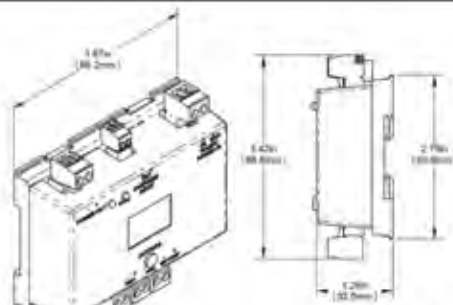


Fig 1. BAPI-Com Communication Output Module

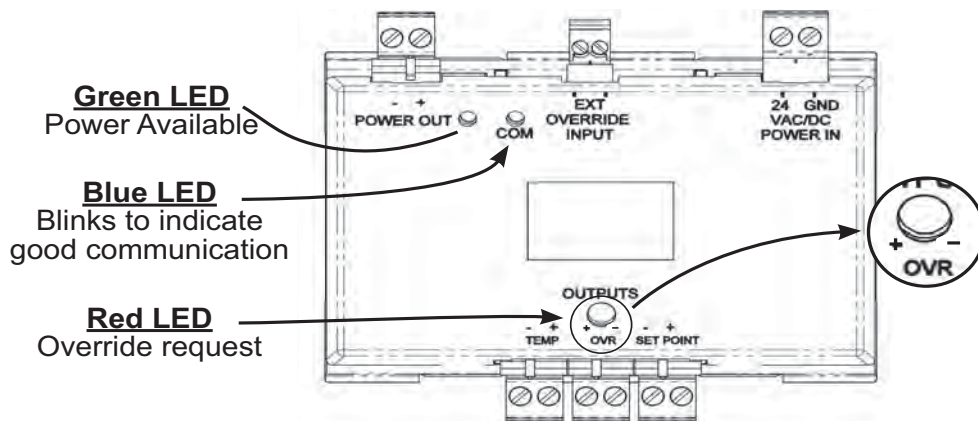


Fig 2. BAPI-Com Room Sensor, BA/BS4SCOM

10

HUMIDITY

TERMINATION DIAGRAM



NEW!



HUMIDITY

2% MULTIFUNCTION HUMIDITY AND TEMPERATURE TRANSMITTER BAPI-COM SERIES

SPECIFICATIONS

Accuracy		Indication OPT.:	LCD, (Temp/Humd/Setpoint/ Occupied), Window 2.5"x1.5", Main digit 3.5 digits, 0.6" high, ± 99.9
Thermistor	$\pm 0.36^{\circ}\text{F}$, ($\pm 0.2^{\circ}\text{C}$)	Operating Humidity	0-95% RH Non-condensing
Humidity	$\pm 2\%$ RH, (10% to 90%) @ 25°C	Operating Temperature	32° to 122°F (0° to 50°C)
Supply Voltage		Enclosure Rating	Comm Module: UL94V-0, RoHS
Sensor	15 to 18 VDC @9mA, (Supplied from the Communication Output Module)	Wiring	
Comm Module	20 to 30 VDC/AC, 25mA maximum, 1.7VA @ 30 VAC	Sensor	2 wires, Up to 500ft, AWG gauge 22-14AWG, twist per foot 5 per ft preferred, Shielding Preferred, Wire spec typical Belden 9841, External sensor 22-18 AWG, TSP, shield grounded, 25' max
Signal Output	Communication Module Volts 0-5 or 0-10VDC, 10k Ω min Resistance 20K span Thermistor 10K-2 or 10K-3	Comm Module	Comm. & PWR 2 wires to the sensor, 22-14 AWG, Power In 2 wires, 12-28 AWG, Output 2 wires per output, 12-28 AWG, Override Input 2 wires, 16-30 AWG
Input	External dry contact connection (Closed = Occupied)	Wiring Terminations	
Output (3 maximum)		Sensor	AWG gauge 22-14AWG Twist per foot 5 per ft preferred Shielding Preferred (not required) Wire spec typical Belden 9841, Up to 500 ft (new or existng)
Volts	0-5 VDC or 0-10 VDC, I _{max} = 20 mA DA or RA (factory configured)	Comm Module	
Reed Switch	0.5A @ 24 VDC	Communication	22-14 AWG
Resistance	20K span, V _{max} = 15 VDC, DA or RA (factory configured)	Power In/Output	12-28 AWG (2wires per output)
Thermistor	10K-2, 10K-3[11K] (factory configured)	Override Input	16-30 AWG
Communication	Polling system (All messages are confirming), Baud rate 1200 baud, Poll Rate 400 ms, Type FSK	Enclosure	ABS Plastic, UL94V-0
Sensing Technology		Approvals	RoHS
Sensor	Type II 10,000 Ω thermistor	Warranty	1 year
Humidity	Capacitive polymer		
Visual Indication			
Power	Green LED (on = powered)		
Communication	Blue LED (blinks during normal communication)		
Occupied	Red LED (on = occupied request)		

10

HUMIDITY

NEW!

444

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2% MULTIFUNCTION HUMIDITY AND TEMPERATURE TRANSMITTER BAPI-COM SERIES

ORDERING INFORMATION

BAPI-Com Room Temperature Sensor Unit	
BA/BS4MCOM	BAPI-COM with Pushbutton Setpoint and Override plus Communication Module. (Must use display F or C)
BA/BS4SCOM	BAPI-COM with Slide Setpoint plus Communication Module
Display Option (Required Selection Field, Select Only One)	
F	Display Configurable in the field (Fahrenheit)
C	Display Configurable in the field (Celsius)
X	No Display Option, slide setpoint
Humidity Sensing (Skip if not required)	
-	No Humidity Sensor
2	2% Humidity Sensor
Temperature Output Range (Also used for the voltage output module range) (Required)	
C	50 to 90°F or 10 to 32°C
D	55 to 85°F or 13 to 30°C
Setpoint Configuration	
-	No Display
C	50 to 90°F or 10 to 32°C
D	55 to 85°F or 13 to 30°C
M	0 to 100% RH
Legend Designator on the Sensor Cover	
L0	No Legend
L6	COOL/WARM required for all slide type sensors
Logo Plate Color	
WMW	WARM White Logo Plate Color
GRY	Gray Logo Plate Color
Special Factory Configurations — Specify as needed	
-	No Special Configuration
ES	External Temperature Sensor (Requires separately purchased 10K-2 sensor), (Not available with humidity)
SDO	Setpoint Display Only
Setpoint Output Value Range	
-	No Setpoint output value range
81	4.75K to 24.75KΩ
00	0 to 5V*
10	0 to 10V*
Override Output — Momentary for 3-5 seconds	
J	Dry Contact Override on dedicated terminals (Not Available with Humidity option)
M	Override in Parallel (II) with RH signal
N	Override in Parallel (II) with Sensor
P	Override in Parallel (II) with Setpoint
Z	No Override
Room Humidity Output Value (Skip if humidity is not required)	
-	No Humidity output value
M00	Humidity Output 0-5V = 0-100%RH (Common ground only)
M10	Humidity Output 0-10V = 0-100%RH (Common ground only)
Room Temperature Output Value (Skip if not required)	
-	No temperature output value
102	Thermistor Temperature Output, 10K-2, 10KΩ @ 25°C
103	Thermistor Temperature Output, 10K-3, 10KΩ @ 25°C
00	0 to 5V over the Temperature Output Range (Common ground only)
10	0 to 10V over the Temperature Output Range (Common ground only)
Connection Configuration	
CG	Common ground for resistive and voltage outputs
DF	Differential ground for resistive outputs

10

HUMIDITY

NEW!



HUMIDITY

ROOM, DUCT, AND OSA 2% HUMIDITY TRANSMITTERS

SRH2 SERIES

DESCRIPTION

Designed for the HVAC control system, the **SRH-2 Series** of humidity transmitters offer reliable measurement of RH levels from 0 to 100% with an accuracy of 2%. Available in wall, duct, and outside air configurations, the **SRH-2 Series** is easy to install and service if necessary. The transmitters utilize a field replaceable sensor tip that allows the end user to replace sensors on-site-eliminating factory calibration and downtime.

FEATURES

- $\pm 2\%$ RH accuracy
- No recalibration required
- Replaceable sensor
- Capacitive sensor technology
- Reverse polarity protection

APPLICATION

- HVAC/R building controls
- Indoor air quality
- Laboratories
- Antiquities preservation
- Swimming pools
- Clean rooms

WIRING

Shield		6	Ground connection
		5	
		4	
		3	(not used)
RTN/COM		2	→ RH (4 to 20 mA) output
+EXC		1	← Vin

setra



Outside Air



Duct



Wall



SPECIFICATIONS

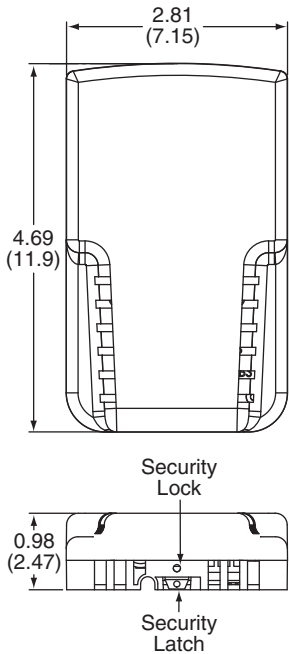
Accuracy	2% RH (0-100% RH) @ 73°F (23°C)
Drift	<1% RH/yr @ 73°F (23°C), 50% RH
Supply Voltage	12-30 VDC
Signal Output	4-20 mA, 2-wire
Maximum Output Impedance	700Ω @ 24 VDC Ω = (supply - 10) / 0.02
Sensing Technology	Replaceable capacitive
Sensor Protection	Porous Polyethylene
Protection	Reverse polarity protection
Operating Humidity	0 to 100%
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	ABS plastic (flammability, 94V-0)
Duct	Polycarbonate (flammability, 94V-0), NEMA 4 (IP65),
Wiring Terminations	Pluggable terminal block

Dimensions

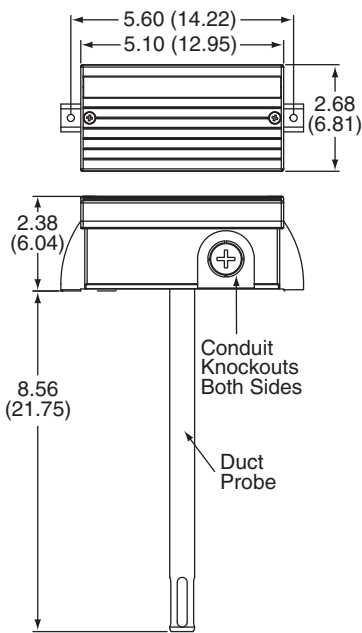
Room	4.7"H x 2.8"W x 0.9"D (12 x 7 x 2.3 cm)
Duct	5.1"L x 2.7"W x 2.4"D (13 x 6.8 x 6 cm) 8.5" (21.6 cm) probe length 1/2" probe Ø
OSA	6.1"L x 2.7"W x 4.5"D (6 x 16.8 x 11 cm) 8" (20 cm) probe length, , CE (EN61236-1998)
Approvals	
Weight	
Room	0.5 lb (0.23 kg)
Duct	1.3 lb (0.59 kg)
OSA	2.6 lb (1.2 kg)
Warranty	1 year (sensor) 3 years (electronics only)



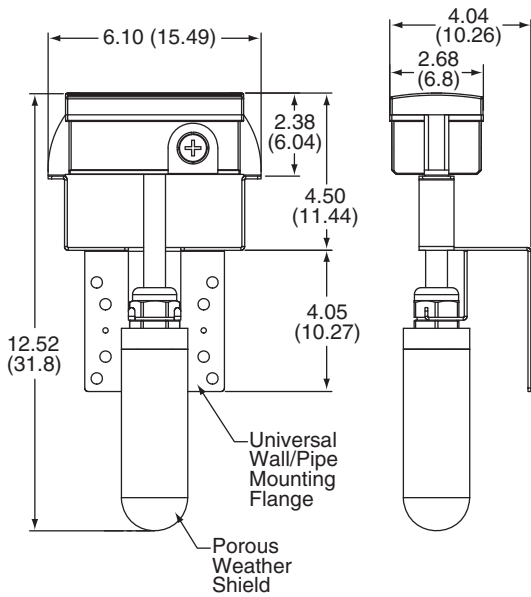
DIMENSIONS



Wall Mount



Duct Mount



Outside Air

ORDERING INFORMATION

MODEL	DESCRIPTION
SRH-2P-O-11-T0-N	2% Outside air humidity transmitter, 4-20 mA output
SRH-2P-D-11-T0-N	2% Duct mount humidity transmitter, 4-20 mA output
SRH-2P-W-11-T0-N	2% Wall mount humidity transmitter, 4-20 mA output

SRH-2P-T0	ACCESSORIES
	Replacement 2% humidity sensor



HUMIDITY

2% WALL OR DUCT HUMIDITY TRANSMITTER

EE21 SERIES

DESCRIPTION

The **EE21 Series** transmitter have been developed for high-precision measurement of relative humidity and temperature.

EE21 Series transmitters are available for wall and duct mounting with or without the snap inmounting kit, which allows a quick and easy exchange of the transmitter. Outputs can be selected between voltage and current.

An optional radiation shield providing a forced ventilation is recommended for use in outdoor applications. An optional special protection coating for the sensing element permits the permanent use in very polluted environments.

FEATURES

- **Two point adjustment**
- **Protective coating**
- **Optional snap mounitng kit**
- **Optional radiation shield**
- **Passive temperature output**

SPECIFICATIONS

Accuracy	2% RH (0 to 90% RH) 3% RH (90 to 100% RH)
Hysteresis	<2% RH
Thermal Effect	Humidity On electronics: typically 0.03% RH/°C (0.02% RH/°F) Humidity on Probe: typically 0.03% RH/°C (0.02% RH/°F) Temperature On electronics: typically 0.01°C /°C
Supply Voltage	4-20 mA: 15 to 35 VDC, 50mA (10 VDC + $R_L \times 0.02$) 0-5 VDC: 12 - 35 VDC, 15 - 29 VAC 0-10 VDC: 15 - 35 VDC, 15 - 29 VAC
Supply Current	VDC 50 mA, VAC typically 15 mA
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC
Maximum Output Impedance	500Ω
Minimum Output Impedance	5000Ω
Measurement Range	Humidity: 0-100%
Sensing Technology	Humidity: Capacitive; HC1000 or HC1000C Temperature Pt1000 (tolerance class A, DIN EN 60751) Mmembrane filter, sintered stainless steel filter, metal grid filter, PTFE filter
Sensor Protection	-40° to 140°F (-40° to 60°C)
Operating Temperature	Polycarbonate
Enclosure	NEMA 4 (IP65)
Enclosure Rating	Screw terminals maximum size wire AWG 16 (1.5 mm ²) Cable gland M16x1.5 or connection plug (only snap-in models N + M) Cable diameter 0.18 to 0.39" (4.5 to 10 mm)
Wiring Terminations	EN61326-1 EN61326-2-3 ICES-003 ClassB Industrial Environment FCC Part15 ClassB
Approvals	Weight 1.54 lbs (0.7kg) Warranty 1 year



EE21

NEW!

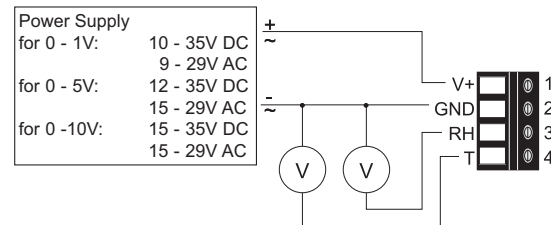


APPLICATION

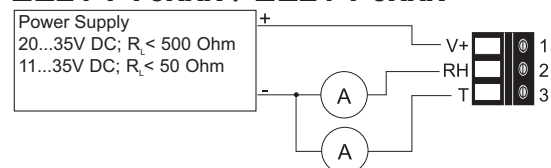
- **Greenhouses**
- **Storage rooms**
- **Swimming halls**
- **Meteorology**

WIRING

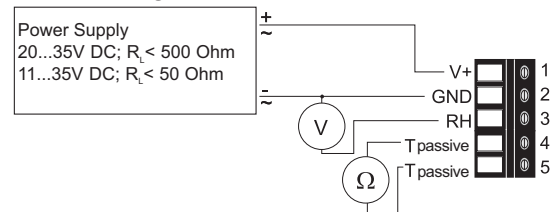
EE21-FT1/2/3xxx / EE21-F1/2/3xxx



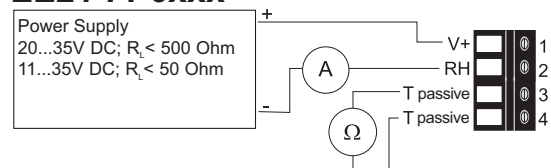
EE21-FT6xxx / EE21-F6xxx



EE21-FP3xxx



EE21-FP6xxx



EE21 SERIES
$$1 \text{ mm} = 0.03937'' / 1'' = 25.4 \text{ mm}$$


Example: EE21-FP-3-C-B-5-1-E01-A EE21 duct mounted humidity transmitter plus passive temperature sensor with 7.9" probe and membrane filter



HUMIDITY

3% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

H_30K SERIES

DESCRIPTION

The **Series H_30K Humidity Transmitters** have been specifically designed for use with HVAC/BAS applications. These instruments measure relative humidity from 5 to 95% RH with $\pm 3\%$ accuracy and produce a two wire, 4-20mA linier output. All can come equipped with an optional passive RTD or thermistor. The duct and OSA versions may also be fitted with a 4-20mA temperature transmitter.

OPERATION

The temperature compensated circuitry converts the relative humidity into a 4-20 mA signal. The optional temperature sensors, RTDs or thermistors, offer direct connection to most automation systems. On duct and OSA units, an optional 4-20 mA temperature transmitter may also be employed and is rangeable from -30° to 250°F (-34° to 121°C).



HW30K



HD30K



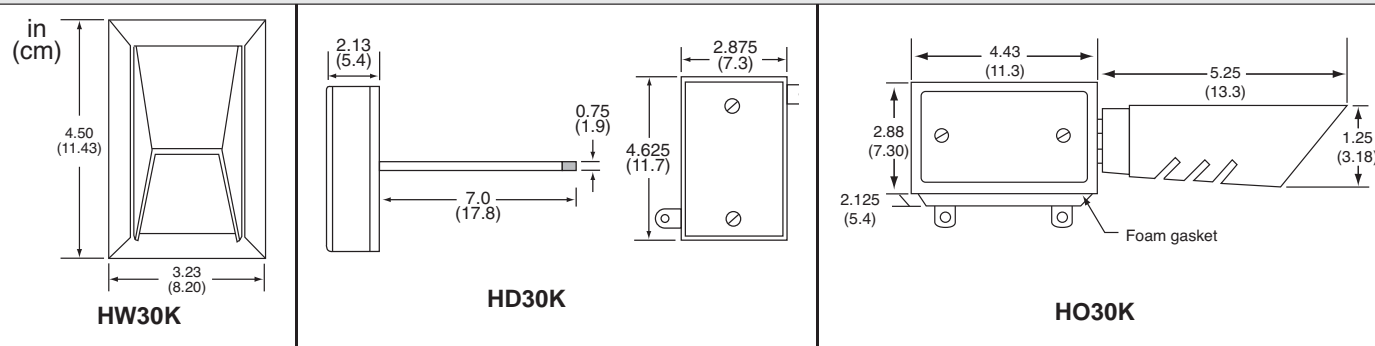
HO30K



FEATURES

- **$\pm 3\%$ accuracy (5% to 95%)**
- **Two wire, 4-20mA RH output**
- **Optional temperature thermistor**
- **Optional temperature RTD**
- **Optional temperature 4-20mA (Duct or OSA)**

DIMENSIONS

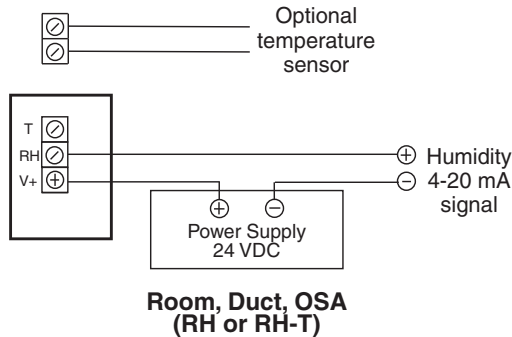


SPECIFICATIONS

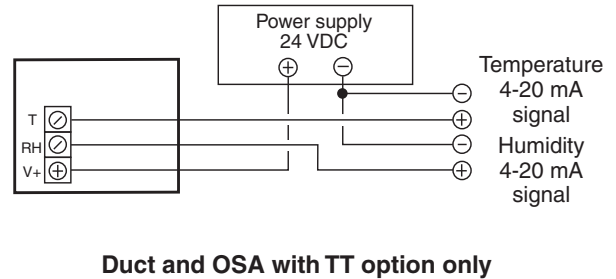
Accuracy	$\pm 3\%$ RH @ 77°F (25°C) from 5% to 95% RH	Operating Temperature	-20° to 140°F (-28° to 60°C)
Stability	typically <0.5% drift per year	Enclosure	Beige plastic (room), weather resistant cast aluminum (duct and OSA)
Thermal Effect	Temperature compensated with less than 0.005% per °F (0.01% per °C)	Wiring Terminations	Terminal block (22 to 16 AWG)
Supply Voltage	18-35 VDC	Weight	Room 0.18 lb (0.08kg), Duct/OSA 1.2 lb (0.55kg)
Signal Output	RH: 4-20 mA Temperature: 4-20 mA, optional thermistor, RTD	Warranty	18 months
Maximum Output Impedance	700Ω @ 24VDC (Supply voltage - 10V) / 0.02)	Stability	typically <0.5% drift per year
Measurement Range	RH: 0-100% RH Temperature: -20° up to 140°F (-29° to 60°C) (See ordering information)		
Sensor Protection	Sintered filter (duct and OSA)		
Operating Humidity	0-100% RH non-condensing		



WIRING FOR RH ONLY AND "T" TEMPERATURE OPTION



WIRING FOR RH AND "TT" TEMPERATURE OPTION



MOUNTING ROOM SENSOR

DIAGRAM 1: The transmitter should be mounted so that the 9" (22.86 cm) probe is in the center of the duct. The transmitter should be duct mounted away from fans, corners, heating and cooling coils, and other equipment that will affect the measurement of relative humidity.

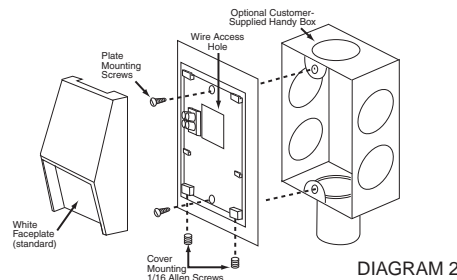
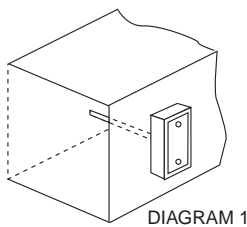
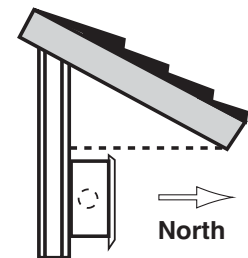


DIAGRAM 2: The sensor should be mounted approximately 5' (12.7 cm) above the floor, on an interior wall, away from any heating or cooling generating devices. Basic model comes with screw terminal block, two #6-32 screws for handybox mounting, and two #6 x 1" screws for direct wall mounting. Cover screws are #6-32 with a 1/16 allen key head. Precautions should be taken to prevent air infiltration from inside the wall.

MOUNTING OSA SENSOR

The transmitter should be mounted preferably on the north side (Northern Hemisphere) of a building under the eave, not above windows or doors. The transmitter should be mounted horizontally with the sensor slots pointing down.



ORDERING INFORMATION

MODEL	DESCRIPTION
HW30K	3% beige room humidity transmitter, 4-20 mA output
HD30K	3% duct-mount humidity transmitter, 4-20 mA output
HO30K	3% OSA-mount humidity transmitter, 4-20 mA output
OPTIONS (Temperature Sensors or Transmitters)	
--	No temperature sensor
T3	10,000Ω thermistor @ 77°F (25°C), Type III
T21	2252Ω thermistor @ 77°F (26°C), Type II
T22	3000Ω thermistor @ 77°F (26°C), Type II
T24	10,000Ω thermistor @ 77°F (25°C), Type II
T27	100,000Ω thermistor @ 77°F (26°C), Type II
T42	20,000Ω thermistor @ 77°F (26°C), Type IV
T63	1000Ω nickel SS flush mounted plate RTD @ 70°F (26°C), Type III (yellow leads)
T81	100Ω RTD @ 32°F (0°C), 381 platinum curve
T85	1000Ω 385 platinum RTD
T91	1000Ω 375 platinum RTD
TT-2	-20° to 140°F (-29° to 60°C) transmitter, 4-20 mA (duct and OSA only)
TT-3	0° to 100°F (-18° to 38°C) transmitter, 4-20 mA (duct and OSA only)

HD30K - T3 Example: HD30K-T3 Duct-mount humidity sensor with 10 kΩ Type III temperature sensor



HUMIDITY

ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS

KH3 SERIES

DESCRIPTION

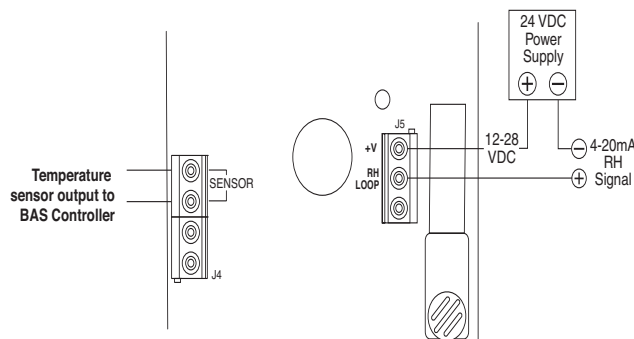
Model **KHR**, **KHD**, and **KHO** Humidity Transmitters are specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 0% to 100%. The standard two-wire, 4-20 mA output provides low cost humidity monitoring for building control. The RH transmitter is available with thermistor or RTD temperature sensors or a 4-20 mA rangeable temperature transmitter. They are available in room, duct, and OSA mounting styles.

FEATURES

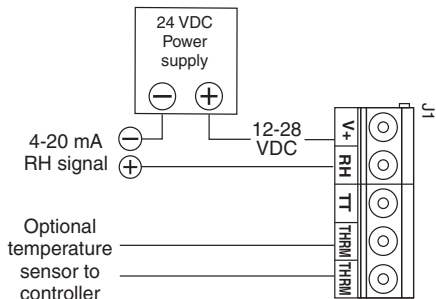
- **Packaged for Price and Performance**
- **Calibration free Interchangeable sensors**
- **Twelve point computerized calibration**
- **0% to 100% RH measurement**
- **±3% accuracy (5% to 95% RH)**
- **Temperature compensated**
- **No need to remove mounting box to replace sensor**
- **Attractive new room enclosure design**
- **Two-wire, 4-20 mA output**
- **Custom Logo's**
- **Optional push button, LED and comm. jack**
- **Optional temperature sensor (Thermistor or RTD)**



WIRING - KHR



WIRING - KHD AND KHR



SPECIFICATIONS

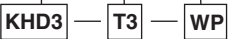
Accuracy	±3% RH from 0° to 70°C, 5% to 95% RH non-condensing
Drift	<±0.5% per year
Thermal Effect	Temperature compensated with <0.008% RH per °C
Supply Voltage	8.5-28 VDC
Signal Output	4-20 mA two-wire, loop-powered
Maximum Output Impedance	775Ω @ 24 VDC (Supply voltage - 8.5 VDC) / 0.02
Sensing Technology	Precon HS-2000 capacitive
Operating Temperature	-22° to 185°F (-30° to 85°C)
Enclosure	
Room	White plastic, UL94HB
Duct	Metal handy box
OSA	NEMA 3R plastic box

Probe	
Duct	Probe: 1/2" aluminum tube with expanded Teflon® filter
OSA	1/2" aluminum tube with 40 micron stainless steel sintered filter
Wiring Terminations	Screw terminals
Weight	
Room	0.2 lb (.084 kg)
Duct/OSA	1 lb (0.45 kg)
Warranty	18 months



ORDERING INFORMATION

MODEL	DESCRIPTION
KHD3	Duct mounted 2% humidity transmitter
KHO3	Outside air 2% humidity transmitter
KHR3	Wall mounted room/space 2% humidity transmitter
Optional temperature ranges	
T3	10,000Ω thermistor @ 77°F (26°C), Type III
T21	2252Ω thermistor @ 77°F (26°C), Type II
T22	3000Ω thermistor @ 77°F (26°C), Type II
T24	10,000Ω thermistor @ 77°F (26°C), Type II
T27	100,000Ω thermistor @ 77°F (26°C), Type II
T42	20,000Ω thermistor @ 77°F (26°C), Type IV
T81	100Ω RTD @ 32°F (0°C), 381 platinum curve
T85	1000Ω RTD @ 32°F (0°C), 385 platinum curve
T91	1000Ω RTD @ 32°F (0°C), 375 platinum curve
OPTIONS	
CL1	Custom one color logo, KHR3 only
J1	RJ11 externally-accessible communication jack (CCRJ11AD required), KHR3 only
J2	Internal RJ11 communication jack, KHR3 only
LCD	LCD digital humidity display, KHR3 only
LED	LED indicator lamp 24V AC/DC green, KHR3 only
MB	Momentary pushbutton switch, jumpered across sensor or pot (JP1), KHR3 only
WP	Weatherproof housing, KHD3 only



Example: KHD3-T3-WP Duct mounted 3% humidity transmitter with 10,000Ω thermistor @ 77°F (26°C), Type III and weatherproof housing

RELATED PRODUCTS

HSD3	Replaceable 3% humidity sensor for KHD3
HSO3	Replaceable 3% humidity sensor for KHO3
HSR3	Replaceable 3% humidity sensor for KHR3



HUMIDITY

3% HUMIDITY TRANSMITTER & OPTIONAL TEMPERATURE TRANSMITTERS

HD31K, HO31K, HW31K

DESCRIPTION

Models HW31K, HD31K, and HO31K 3% humidity transmitters are specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 0% to 100%. The standard two-wire, 4-20 mA output provides low-cost humidity monitoring for building control. The RH transmitters are available with thermistor or RTD temperature sensors or a 4-20 mA rangeable temperature transmitter. They are available in room, duct, and OSA mounting styles.

OPERATION

The transmitter converts the relative humidity into a 4-20 mA signal with 3% accuracy. The optional temperature sensors, thermistor or RTD, offer direct connections to most automation systems. The optional rangeable temperature transmitter offers a 4-20 mA signal and is rangeable from -30° to 250°F (-34° to 121°C).

FEATURES

- 0% to 100% RH measurement
- ±3% accuracy (5% to 95% RH)
- Two-wire, 4-20 mA output
- White plastic design

OPTIONS:

- Temperature thermistor
- Temperature RTD
- Temperature 4-20 mA for duct and OSA



HW31K



HD31K



HO31K



SPECIFICATIONS

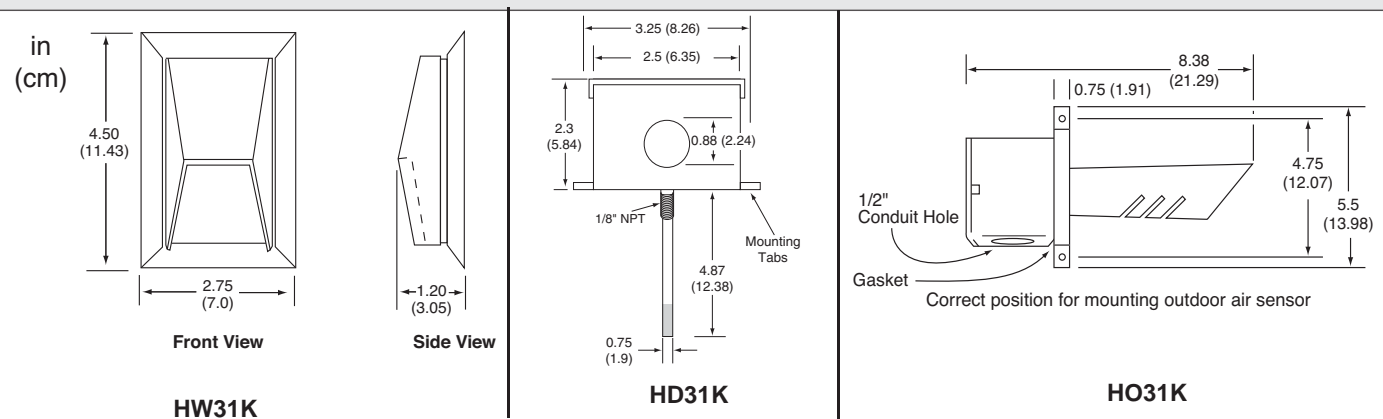
Accuracy	±3% RH @ 77°F (25°C) from 5% to 95% RH
Thermal Effect	Temperature compensated with less than 0.005% per °F (0.01% per °C)
Stability	typically <±1% drift per year
Supply Voltage	18-35 VDC
Signal Output	RH: 4-20 mA Temperature: 4-20 mA optional thermistor, RTD
Maximum Output Impedance	600Ω @ 24VDC (Supply voltage - 10V) / 0.02)
Measurement Range	Temperature Transmitter: 675 @ 24V RH: 0-100% RH Temperature: -20° up to 140°F (-29° to 60°C) (See

Sensor Protection	ordering information)
Operating Humidity	Sintered filter (duct and OSA)
Operating Temperature	0-100% RH non-condensing
	-20° to 140°F (-28° to 60°C) (HD31K & HO31K only)
Enclosure Rating	White plastic
Wiring Terminations	Screw terminals for loop termination
Weight	Room 0.18 lb (0.08kg), Duct/OSA 1.2 lb (0.55kg)
Warranty	18 months

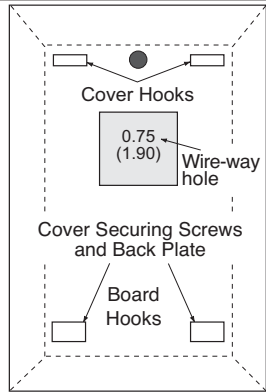


3% HUMIDITY TRANSMITTER & OPTIONAL TEMPERATURE TRANSMITTERS
HD31K, HO31K, HW31K

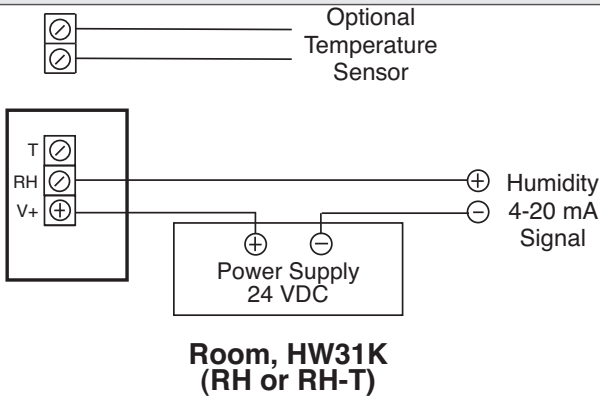
DIMENSIONS



MOUNTING



WIRING FOR ROOM UNIT



ORDERING INFORMATION

MODEL	DESCRIPTION
HW31K	3% room-mount humidity transmitter, 4-20 mA output
HD31K	3% duct-mount humidity transmitter, 4-20 mA output
HO31K	3% OSA-mount humidity transmitter, 4-20 mA output
OPTIONS (temperature sensor or transmitter)	
--	No temperature sensor
T3	10,000Ω thermistor @ 77°F (25°C), Type III
T21	2252Ω thermistor @ 77°F (26°C), Type II
T22	3000Ω thermistor @ 77°F (26°C), Type II
T24	10,000Ω thermistor @ 77°F (25°C), Type II
T27	100,000Ω thermistor @ 77°F (26°C), Type II
T42	20,000Ω thermistor @ 77°F (26°C), Type IV
T63	1000Ω nickel SS flush mounted plate RTD @ 70°F (26°C), Type III (yellow leads)
T81	100Ω RTD @ 32°F (0°C), 381 platinum curve
T85	1000Ω 385 platinum RTD
T91	1000Ω 375 platinum RTD

HD31K - T3

Example: HD31K-T3 Duct-mount humidity transmitter with 10 kΩ Type III temperature sensor



HUMIDITY

3% ROOM HUMIDITY AND TEMPERATURE TRANSMITTER HMW80 SERIES

DESCRIPTION

The **HMW80 Series** from Vaisala features the interchangeable INTERCAP® sensor and is designed for use in energy management systems in buildings. They combine excellent stability with reliable operation. The **HMW80 Series** is easy to install, requires no recalibration if the sensor is changed and is insensitive to dust as well as to most chemicals. This means great savings in overall maintenance costs.

The **HMW80 Series** transmitters are available in four models: HMW82 and HMW83 transmitters measure both humidity and temperature. The TMW82 and TMW83 measure temperature only. HMW80 Series is available in both 2- and 3-wire and 4-20 mA and voltage analog signals.

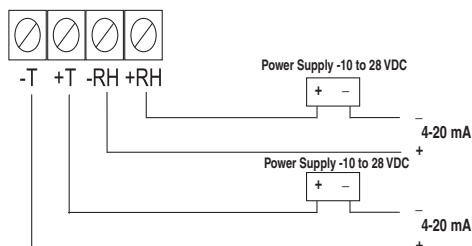
FEATURES

- **3% accuracy**
- **Easy to replace interchangeable sensor**
- **Two-year warranty**
- **No recalibration required**
- **Low maintenance costs**
- **Temperature and humidity outputs**
- **Interchangeable humidity sensor**
- **2-wire or 3-wire models**



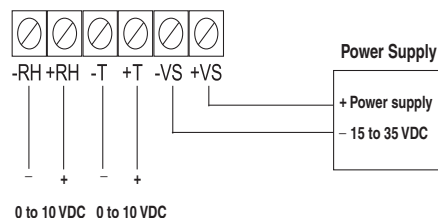
WIRING

HMW82



You must connect the RH channel of the HMW82, even if you only want to measure temperature. Connecting the temperature channel is optional.

HMW83



SPECIFICATIONS

Accuracy

HMW Series	Humidity $\pm 3\%$, 30 to 70% RH, 50° to 86°F (10° to 30°C)
TMW Series	Temperature $\pm 0.9^\circ\text{F}$ ($\pm 0.50^\circ\text{C}$)
Thermal Effect	Temperature compensated with less than 0.005% per °F (0.01% per °C)

Supply Voltage

HMW82/TMW82	10 to 28 VDC
HMW83/TMW83	15 to 35 VDC/24 VAC $\pm 20\%$

Signal Output

HMW82/TMW82	4-20 mA (loop powered)
HMW83/TMW83	0 to 10 VDC

Maximum Output

Impedance (mA)	500 Ω
-----------------------	--------------

Minimum Output

Impedance (VDC)	10 k Ω
------------------------	---------------

Measurement Range

Humidity	0 to 100% RH
Temperature	23° to 131°F (-5° to 55°C)

Sensing Technology

Humidity	Replaceable Vaisala Intercap®
Temperature	Digital Temperature Sensor
Operating Humidity	0 to 100% RH non-condensing
Operating Temperature	23° to 131°F (-5° to 55°C)
Enclosure	ABS/ Polycarbonate UL-V0 approved, IP30

Wiring Terminations

Approvals	Terminal block (22 to 16 AWG)
Warranty	CE (EN61326-1)

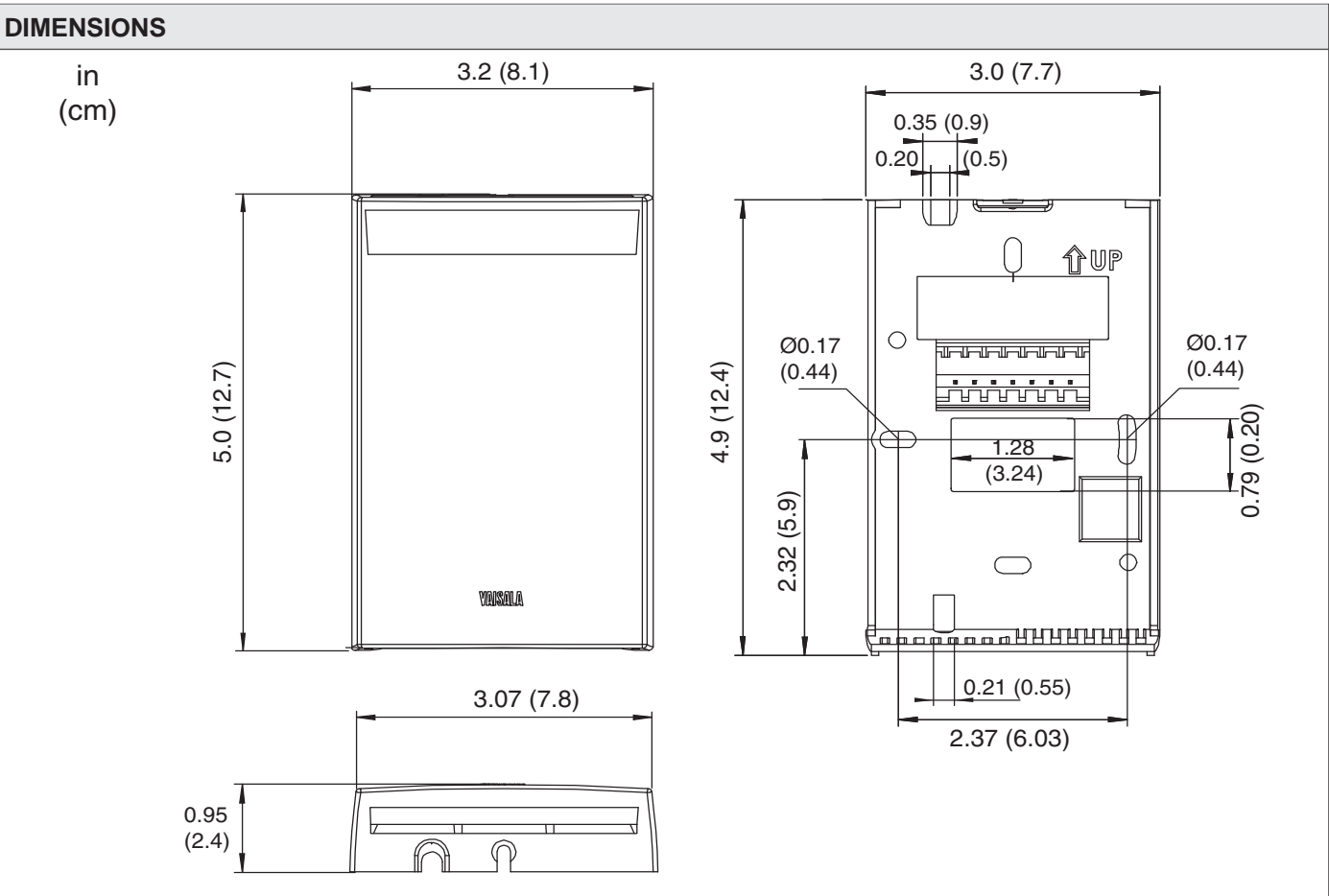
2 years



3% ROOM HUMIDITY AND TEMPERATURE TRANSMITTER
HMW80 SERIES

10

HUMIDITY



ORDERING INFORMATION

MODEL	DESCRIPTION
HMW82	3% Room humidity and temperature transmitter, 4-20 mA
HMW83	3% Humidity and temperature transmitter, 0-10 VDC
TMW82	Room temperature transmitter, 2-wire 4-20 mA output
TMW83	Room temperature transmitter, 3-wire 0-10V output



HUMIDITY

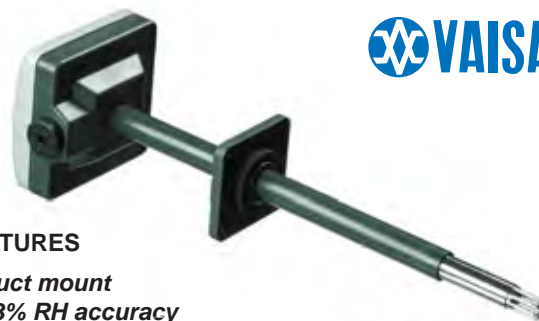
3% DUCT HUMIDITY AND TEMPERATURE TRANSMITTER

HMD42, HMD53

DESCRIPTION

The duct mounted **HMD42** and **HMD53** from Vaisala are designed for building automation applications. They combine reliable operation with excellent stability, providing low cost of ownership to the user. The **HMD42/53** transmitters measure humidity with a $\pm 3\%$ RH accuracy and temperature with a $\pm 0.4^\circ\text{C}$ ($\pm 0.72^\circ\text{F}$) accuracy. They feature various selectable analog output signals and they can be powered by either AC or DC voltage.

The **HMD42/53** humidity transmitters use the interchangeable Vaisala INTERCAP® Sensor. The transmitters require no recalibration if the sensor is changed. The duct mount **HMD42** and **HMD53** transmitters can be installed in various measurement environments due to the robust IP65 (NEMA4) rated metal enclosure which protects the sensor from dust and splashes of water.



FEATURES

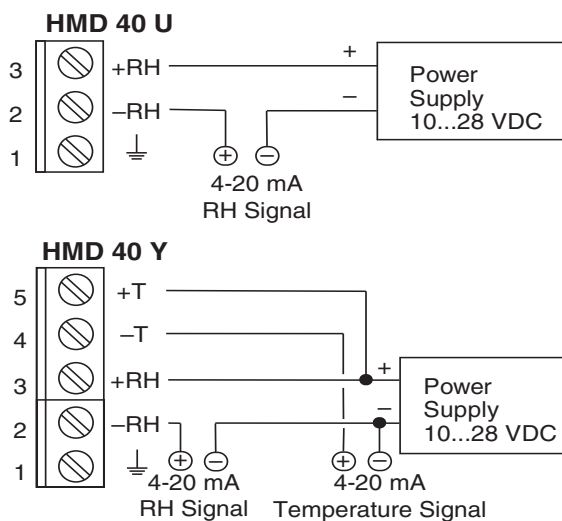
- **Duct mount**
- **$\pm 3\%$ RH accuracy**
- **No recalibration required**
- **Easy to replace interchangeable sensor**
- **Current or selectable voltage output**



SPECIFICATIONS

Accuracy		HMD42	$\pm 3\%$ RH (0 to 90% RH)	HMD42	RH: 0 to 100%
HMD53		HMD53		HMD53	RH: 0 to 100% Temperature: -40° to 14°F (-40° to 60°C)
RH	$\pm 3\%$	Sensing Technology		RH	Replaceable Vaisala INTERCAP®
Temperature	$\pm 0.54^\circ\text{F}$ (0.3°C)	Temperature		Temperature	Pt 1000 Ω RTD
Stability		Sensor Protection		Sensor Protection	Membrane filter
HMD42	$\pm 2\%$ RH/2 years	Operating Humidity		Operating Humidity	0 to 100% RH
HMD53	$\pm 3\%$ RH/5 years	Operating Temperature		Operating Temperature	23° to 131°F (5° to 55°C)
Supply Voltage		Enclosure		Enclosure	Housing: Cast aluminum, probe: Stainless steel
HMD42	20 to 35 VDC	Enclosure Rating		Enclosure Rating	ABS plastic, NEMA 4 (IP65)
HMD53	10 to 35 VDC, 9 to 24 VAC	Wiring Terminations		Wiring Terminations	Screw terminal
Signal Output		Approvals		Approvals	CE (EN61326-1, EN55022)
HMD42	4-20 mA	Weight		Weight	0.6 lb (0.3 kg)
HMD53	0 to 1, 0 to 5, 0 to 10 VDC	Warranty		Warranty	1 year
Maximum Output Impedance	500 Ω				
Minimum Output Impedance	20 k Ω				
Measurement Range					

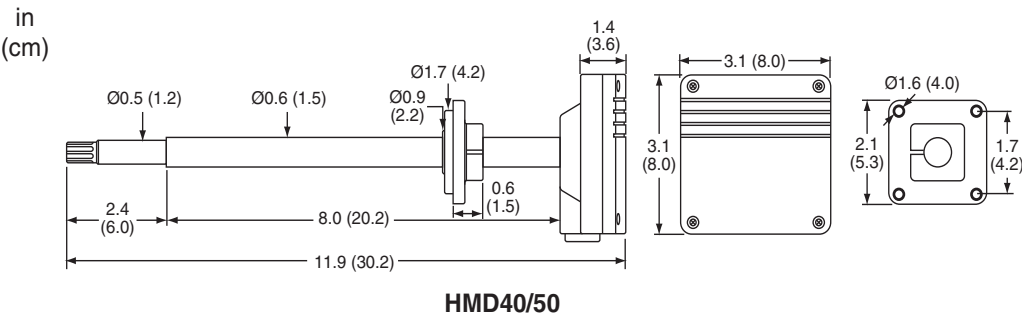
WIRING





3% DUCT HUMIDITY AND TEMPERATURE TRANSMITTER
HMD42, HMD53

DIMENSIONS



10

HUMIDITY

ORDERING INFORMATION

MODEL	DESCRIPTION
HMD42	Duct mount, humidity 4-20 mA output
HMD53	Duct mount, humidity and temperature, 0-1 V and 0-10 V output

15778HM	ACCESSORIES
	Replaceable humidity sensor



HUMIDITY

ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS

A/RH3 SERIES

DESCRIPTION

The **A/RH3 Series** relative humidity transmitters utilize a capacitive sensing element to deliver a proportional 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC output. It is available for room, duct, outside, and stainless steel wall plate applications. The **A/RH3 Series** has on-board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources.

Each **A/RH3 Series** humidity transmitter is calibrated using a NIST Traceable Temperature/Humidity Chamber. Three and five point NIST calibration certificates are available and optional.

FEATURES

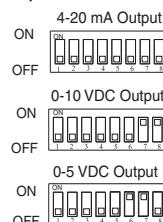
- **±3% accuracy**
- **Three-year warranty**
- **Duct and OSA twist-off weatherproof housing**
- **24 VDC or 24 VAC power (field-selectable)**
- **4-20 mA, 0-10V, or 0-5V signal (field-selectable)**
- **Field-calibratable**

SPECIFICATIONS

Accuracy	±3% @ 77°F (25°C) from 10% to 95%
Thermal Effect	<0.005% per °F (<0.01 per °C)
Supply Voltage	12-40 VDC or 24 VAC, selectable
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC (field selectable)
Measurement Range	0% to 100%
Sensing Technology	Capacitive
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	Plastic Delta-style
Duct/OSA	Plastic weatherproof
Dimensions	
Room	3.8"H x 2.8"W x 0.9"D (9.8 x 7 x 2.3 cm)
Duct	3.6" (9 cm) Ø head with 8.15"L (20 cm) probe 0.75" (1.9 cm) Ø
OSA	3.6" (9 cm) Ø head with 3.0"L (7.6 cm) probe 1.4" (3.6 cm) Ø
Approvals	CE, RoHS
Warranty	5 years

WIRING

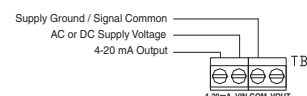
Output Selection Switches (SW 1)



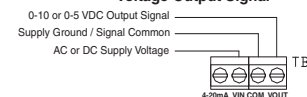
2 Wire Current Output Signal



3 Wire Current Output Signal



Voltage Output Signal



ORDERING INFORMATION

MODEL	DESCRIPTION
A/RH3	3% accuracy humidity transmitter
AN	Type II 10,000Ω thermistor
CP	Type III 10,000Ω thermistor
20K	20,000Ω thermistor
100	100Ω 385 PT RTD
IK	1,000Ω 385 PT RTD
R	Room
D	Duct
O	Outside air
SP	Stainless steel plate passive sensors only
-	No display
LCD	LCD display (current mode, room units only)

A/RH3 - 100 - R - LCD Example: **A/RH3-100-R-LCD** A 3% accuracy room humidity transmitter with 100Ω RTD & LCD Display





3% ROOM, DUCT, AND OSA HUMIDITY TRANSMITTERS BA/H300 SERIES

DESCRIPTION

Model **BA/H Series** 3% accuracy humidity transmitters are designed specifically for HVAC systems. The room transmitters use Delta or BAPI-Stat II enclosures with optional communication jacks. All duct and OSA units come in weatherproof enclosures selectable for NEMA 3R or IP66 applications. All BA/H transmitters have optional temperature sensors or temperature transmitters. Transmitter outputs include 4-20mA, 0-5V and 0-10V with replaceable sensors.



Delta-Style
Enclosure

FEATURES

- Popular room housing
- Accuracies of 3%
- Three-year warranty
- Duct and OSA twist-off NEMA 4 housing
- 24 VDC or 24 VAC power (field-selectable)
- 4-20 mA, 0-10V, or 0-5V signal (field-selectable)
- Field calibratable
- Optional temperature sensor



NEMA 4 (BB) Duct Unit
Weatherproof (WP) Duct Unit



Weatherproof (WP)
Duct Unit

10

HUMIDITY

SPECIFICATIONS

Accuracy	3%, from 20% to 95% RH
Supply Voltage	15-26 VAC/VDC
Signal Output	4-20 mA, 0-5 VDC
Maximum Output Impedance (mA)	700Ω maximum @24 VDC
Minimum Output Impedance (VDC)	10 kΩ minimum
Sensing Technology	Resistive with ceramic substrate
Sensor Protection	
Room	Room Gore-Tex®
Duct/OSA	100 micron stainless steel sintered filter
Operating Humidity	0-100%, non-condensing
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-22° to 158°F (-30° to 70°C)
Enclosure	

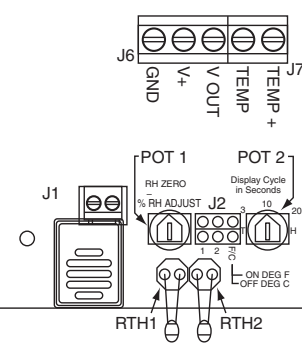
Room	ABS Plastic, UL94V-0
Duct/OSA	BB NEMA 4, UV resistant, UL94V-0
WP NEMA 3R, Cast aluminum	
Wiring Terminations	Four wire, 16 to 22 AWG terminals
Approvals	CE, RoHS
Warranty	2 years



HUMIDITY

ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS BA/H300 SERIES

WIRING



Room Humidity Circuit Board

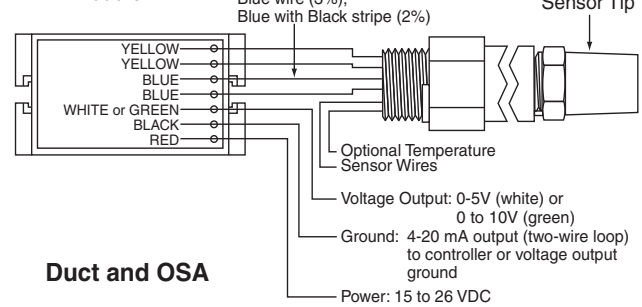
4 TO 20 mA TERMINATION

Terminal Legend	Function
GND	4 to 20 mA signal (to analog input of controller)
V+	+15 to +26 VDC
TEMP	Optional temperature sensor
TEMP	Optional temperature sensor

0 TO 5 VDC TERMINATION

Terminal Legend	Function
GND	To controller ground (GND or common)
V+	+15 to +26 VAC/VDC
V OUT	0 to 5 VDC or 0 to 10V signal (to analog input of controller)
TEMP	Optional temperature sensor
TEMP	Optional temperature sensor

Humidity Transmitter Module



Duct and OSA

ORDERING INFORMATION

BAPI ROOM HUMIDITY TRANSMITTER	
MODEL	DESCRIPTION
BA/H300-R	3% Humidity Transmitter, 4-20 mA output, Delta enclosure
BA/H310-R	3% Humidity Transmitter, 4-20 mA output, Delta Enclosure
DISPLAY OPTION	
D	LCD Display

Example: BA/H300-R-D 3% Room humidity transmitter, 4-20 mA output, with LCD display

BAPI DUCT HUMIDITY SENSOR	
MODEL	DESCRIPTION
BA/H300	3% Humidity w/ Interchangeable Output of 0-5 VDC or 4-20 mA output
BA/H310	3% Humidity, 0-10 VDC output
BA/H312	3% Humidity, 2-10 VDC output
ENCLOSURE OPTION	
D-BB	BapiBox Enclosure, IP66 Rated, UV Resistant Polycarbonate
D-BB2	BapiBox2 Enclosure, IP66 Rated, UV Resistant Polycarbonate
D-WP	Weatherproof Enclosure, NEMA 3R Rated Metal Enclosure

Example: BA/H300-D-BB2 3% Duct mount humidity transmitter, 0-10 VDC output, BB2 enclosure

BAPI OSA HUMIDITY SENSOR	
MODEL	DESCRIPTION
H300	3% Humidity w/ Interchangeable Output of 0-5 VDC or 4-20 mA output
H310	3% Humidity, 0-10 VDC output
H312	3% Humidity, 2-10 VDC output
ENCLOSURE OPTION	
O-BB	BapiBox Enclosure, IP66 Rated, UV Resistant Polycarbonate
O-BB2	BapiBox2 Enclosure, IP66 Rated, UV Resistant Polycarbonate
O-WP	Weatherproof Enclosure, NEMA 3R Rated Metal Enclosure

Example: BA/H300-O-WP 3% OSA mount humidity transmitter, 4-20 mA output, weather proof housing

UR	RELATED PRODUCTS	PAGE
BA/ADP-525-7-CPW	Moisture-resistant three-wire butt splice	193
BA/ADP-525-7-OFW	Copla white 7" x 5.25" adaptor plate	1154
BA/ADP-525-7-WMW	Off white 7" x 5.25" adaptor plate	1154
BA/FOAMBACK	Warm white 7" x 5.25" adaptor plate	1154
BA/FOAMBACK-GRAY	White foam back insulator	1154
	Gray foam back insulator	1154



ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS SRH3 SERIES

setra

DESCRIPTION

Designed for the HVAC control system, the **SRH-3 Series** of humidity transmitters offer reliable measurement of RH levels from 0 to 100% with an accuracy of $\pm 3\%$. Available in wall, duct, and outside air configurations, the SRH-3 Series transmitters are easy to install and service if necessary. The transmitters have a field replaceable sensor tip that allows the end user to replace sensors in the field eliminating factory calibration and downtime.

FEATURES

- $\pm 3\%$ RH accuracy
- No recalibration required
- Replaceable sensor
- Capacitive sensor technology
- Reverse polarity protection



SRH-3P-W



SRH-3P-D



SRH-3P-O



CE



10

HUMIDITY

WIRING

Shield		6	Ground connection
		5	
		4	
		3	(not used)
RTN/COM		2	RH (4 to 20 mA) output
+EXC		1	Vin

SPECIFICATIONS

Accuracy	3% RH (0-100% RH) @ 73°F (23°C)	Dimensions	
Stability	<1%RH/yr @ 73°F (23°C), 50% RH	Room	4.7"H x 2.8"W x 0.9"D (12 x 7 x 2.3 cm)
Supply Voltage	12-30 VDC	Duct	5.1"L x 2.7"W x 2.4"D (13 x 6.8 x 6 cm) 8.5" (21.6 cm) probe length 1/2" probe Ø
Signal Output	4-20 mA, 2-wire	OSA	6.1"L x 2.7"W x 4.5"D (6 x 16.8 x 11 cm) 8" (20 cm) probe length
Maximum Output Impedance	700Ω @ 24 VDC, Ω = (supply - 10) / 0.02	Approvals	CE (EN61236-1998)
Sensing Technology	Replaceable capacitive	Weight	
Sensor Protection	Porous polyethylene	Room	0.5 lb (0.23 kg)
Protection	Reverse polarity protection	Duct	1.3 lb (0.59 kg)
Operating Humidity	0 to 100%	OSA	2.6 lb (1.2 kg)
Operating Temperature	-40° to 140°F (-40° to 60°C)	Warranty	1 year (sensor) 3 years (electronics only)
Enclosure			
Room	ABS plastic (flammability 94V-0)		
Duct/OSA	Polycarbonate (flammability, 94V-0), NEMA 4 (IP65)		
Wiring Terminations	Pluggable terminal block		

ORDERING INFORMATION

MODEL	DESCRIPTION
SRH-3P-O-11-T0-N	3% Outside air humidity transmitter, 4-20 mA output
SRH-3P-D-11-T0-N	3% Duct mount humidity transmitter, 4-20 mA output
SRH-3P-W-11-T0-N	3% Wall mount humidity transmitter, 4-20 mA output

ACCESSORIES
SRH-3P-T0 Replacement 3% humidity sensor



HUMIDITY

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS KH5 SERIES

DESCRIPTION

The KHR, KHD, and KHO Series 5% humidity transmitters are specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 0% to 100%. The standard two-wire, 4-20 mA output provides low-cost humidity monitoring for building control. The RH transmitters are available with thermistor or RTD temperature sensors. They come in room (KHR), duct (KHD), and OSA (KHO) mounting styles.

FEATURES

- **Calibration-free interchangeable sensors**
- **Twelve-point computerized calibration**

NEW!

Kele

CE



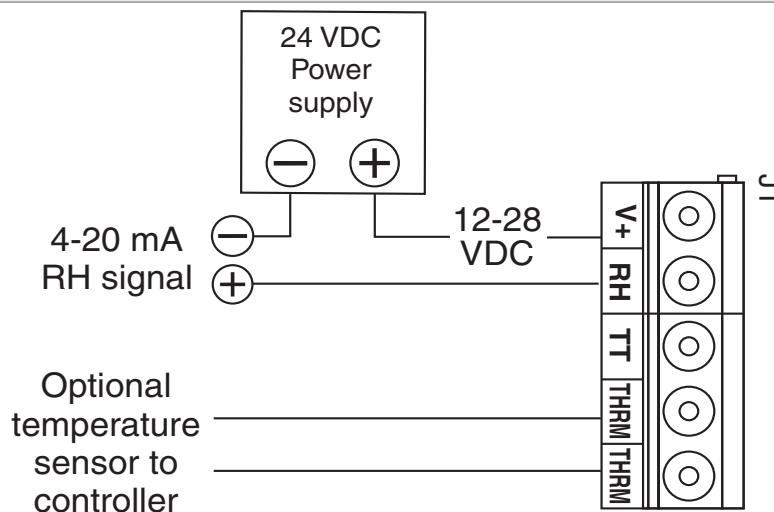
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HUMIDITY

SPECIFICATIONS

Accuracy	±5% RH from 0° to 70°C, 5% to 95% non-condensing	Enclosure	White plastic, UL94HB
Stability	<±0.5% drift per year	Room	Metal handy box
Thermal Effect	Temperature compensated with <0.008% RH per °C	Duct	NEMA 3R plastic box
Supply Voltage	8.5-28 VDC	Probe	
Signal Output	4-20 mA = 0% to 100% RH, two-wire, loop-powered Passive temperature output: All Kele standard thermistors and RTDs	Duct	1/2" aluminum tube with expanded Teflon® filter
Maximum Output Impedance	(Supply voltage - 8.5 VDC) / 0.02, 775Ω @ 24 VDC	OSA	1/2" aluminum tube with 40 micron stainless steel sintered filter
Sensing Technology	Precon HS-2000 capacitive	Wiring Terminations	Screw terminals
Operating Temperature	-22° to 185°F (-30° to 85°C)	Approvals	CE
		Weight	
		Room	0.2 lb (.084 kg)
		Duct/OSA	1 lb (0.45 kg)
		Warranty	18 months

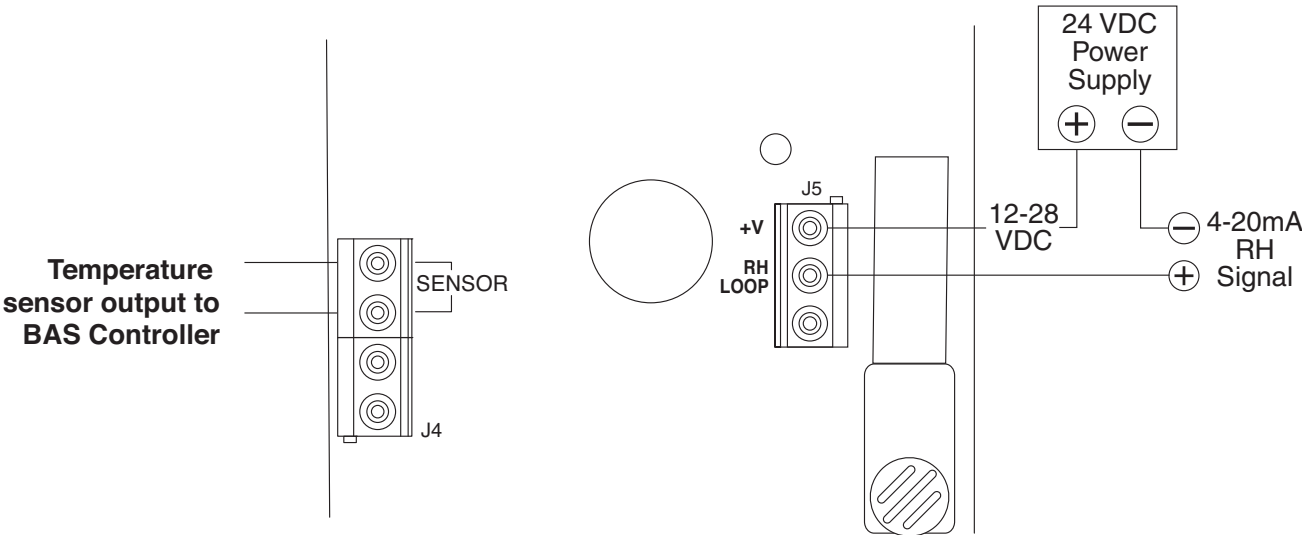
WIRING



NEW!



INSTALLATION



10

HUMIDITY

ORDERING INFORMATION

MODEL	DESCRIPTION
KHD5	Duct mounted 5% humidity transmitter
KHO5	Outside air 5% humidity transmitter
KHR5	Wall mounted room/space 5% humidity transmitter
Optional temperature ranges	
T3	10,000Ω thermistor @ 77°F (26°C), Type III
T21	2252Ω thermistor @ 77°F (26°C), Type II
T22	3000Ω thermistor @ 77°F (26°C), Type II
T24	10,000Ω thermistor @ 77°F (26°C), Type II
T27	100,000Ω thermistor @ 77°F (26°C), Type II
T42	20,000Ω thermistor @ 77°F (26°C), Type IV
T81	100Ω RTD @ 32°F (0°C), 381 platinum curve
T85	1000Ω RTD @ 32°F (0°C), 385 platinum curve
T91	1000Ω RTD @ 32°F (0°C), 375 platinum curve
OPTIONS	
CL1	Custom one color logo, KHR5 only
J1	RJ11 externally-accessible communication jack (CCRJ11AD required), KHR5 only
J2	Internal RJ11 communication jack, KHR5 only
LCD	LCD digital humidity display, KHR5 only
LED	LED indicator lamp 24V AC/DC green, KHR5 only
MB	Momentary pushbutton switch, jumpered across sensor or pot (JP1), KHR5 only
WP	Weatherproof housing, KHD5 only

Example: KHD5-T3-WP Duct mounted 5% humidity transmitter with 10,000Ω thermistor @ 77°F (26°C), Type III and weatherproof housing

NEW!



HUMIDITY

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS GEH5 SERIES

DESCRIPTION

Model **GEH5 Series** 5% Accuracy Humidity Transmitters are designed specifically for commercial building automation systems (BAS). The room, duct and OSA transmitters use replaceable sensor tips and switch selectable transmission including 4-20mA, 0-5V or 0-10VDC. The **GEH** also has an optional temperature transmitter output with selectable outputs (RH & T must be the same type). All duct and OSA enclosures are rated for IP42 or NEMA 3R applications.

FEATURES

- **±5% accuracy**
- **Temperature compensated**
- **Field-selectable 4-20 mA, 0-10V, or 0-5V outputs**
- **Replaceable sensor**
- **Optional temperature transmitter**

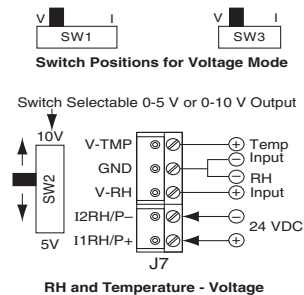


SPECIFICATIONS

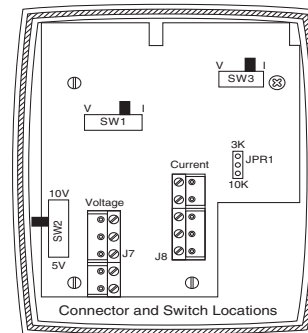
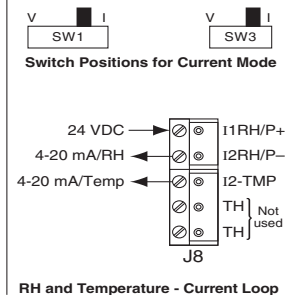
Accuracy	5% (10% to 90%)
Supply Voltage	12-30 VDC, 2.4 VA
Signal Output	4-20 mA/0-5V/0-10V selectable; 0-100% RH
Maximum Output Impedance (mA)	700Ω maximum @ 24 VDC
Minimum Output Impedance (VDC)	10 kΩ minimum
Sensing Technology	Capacitive and replaceable
Operating Humidity	0% to 99%, non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure Rating	
Room	ABS plastic, UL94V Room Installed IP20, NEMA 1
Duct/OSA	IP42, NEMA 3R Stainless steel with removable tip, PTFE Teflon® shield
Wiring Terminations	16 to 22 AWG terminals
Approvals	CE
Weight	
Room	0.5 lb. (0.23 kg)
Duct/OSA	1.3 lb. (0.59 kg)
Warranty	2 years

WIRING

VOLTAGE MODE



CURRENT MODE



Only one terminal block provided; move for either voltage or current.



ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS
GEH5 SERIES

WIRING

in
(cm)

Cover (all mounts)

Space (Wall) Mount

Outside Air Mount

Duct Mount

ORDERING INFORMATION

MODEL DESCRIPTION	
GEH5	RH transmitter 5% accuracy
RH MOUNTING ENCLOSURE	
S	Decorative room mounting enclosure
D	Duct mounting with ABS plastic IP42 enclosure
O	OSA mounting with ABS plastic IP42 enclosure and weather shield
TEMPERATURE OPTION	
TT0	Transmitter, 40° to 90°F (4.4° to 32.2°C) (S, D, SN, and DN only)
TT2	Transmitter, -20° to 140°F (-29° to 60°C) (D, O, DN, and ON only)
TT3	Transmitter, 0° to 100°F (32° to 38°C) (All enclosure mounts)

Example: GEH2-SN 5% room RH transmitter with NIST certificate
GEH2-D 5% duct RH transmitter

GEH5-RH GEH5-RHTT	ACCESSORIES Replaceable 5% humidity sensor for room, duct, and OSA transmitters Replaceable 5% humidity and temperature sensor for room, duct and OSA transmitters
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HUMIDITY

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

A/RH5 SERIES

DESCRIPTION

The **A/RH5 Series** relative humidity transmitters utilize a capacitive sensing element to deliver a proportional 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC output. It is available for room, duct, outside, and stainless steel wall plate applications. The **A/RH5 Series** has on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources.

FEATURES

- Popular room housing
- Five-year warranty
- Duct and OSA twist-off NEMA 4 housing
- 24 VDC or 24 VAC power
- Field selectable current or voltage outputs
- Single point field calibration
- Digital display option
- Optional temperature sensor

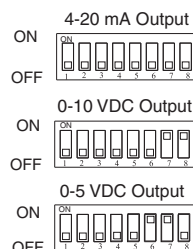


SPECIFICATIONS

Accuracy	±5% @ 77°F (25°C) from 10% to 95%	Dimensions	
Thermal Effect	<0.005% per °F (<0.01 per °C)	Room	3.8"H x 2.8"W x 0.9"D (9.8 x 7 x 2.3 cm)
Supply Voltage	12-40 VDC or 24 VAC, selectable	Duct	3.6" (9 cm) Ø head with 8.15"L (20 cm) probe 0.75" (1.9 cm) Ø
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC (field selectable)	OSA	3.6" (9 cm) Ø head with 3.0"L (7.6 cm) probe 1.4" (3.6 cm) Ø
Measurement Range	0% to 100%	Enclosure	
Sensing Technology	Capacitive	Room	Plastic Delta-style
Operating Temperature		Duct/OSA	Plastic weatherproof
Room	32° to 122°F (0° to 50°C)	Approvals	CE, RoHS
Duct/OSA	-40° to 140°F (-40° to 60°C)	Warranty	5 years

WIRING

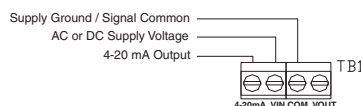
Output Selection Switches (SW 1)



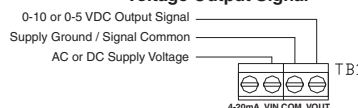
2 Wire Current Output Signal



3 Wire Current Output Signal



Voltage Output Signal



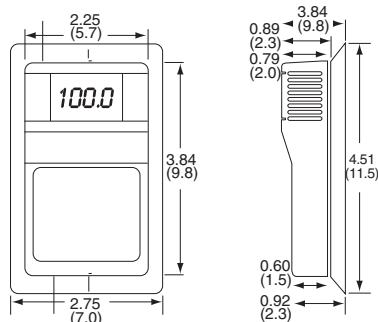


ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

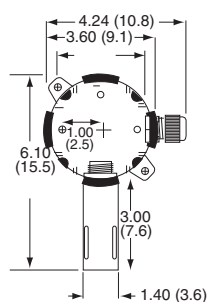
A/RH5 SERIES

DIMENSIONS

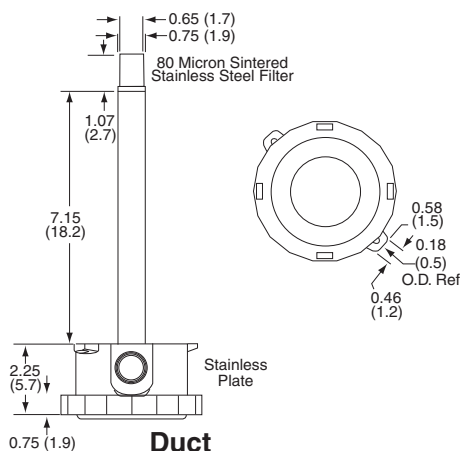
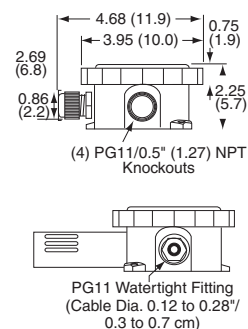
in
(cm)



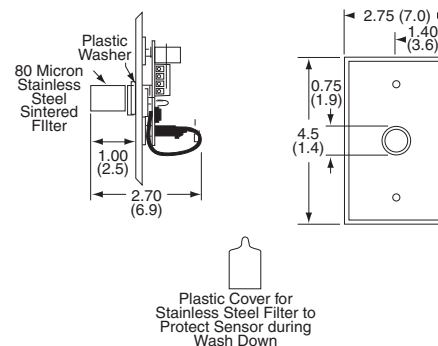
Room



Outside



Duct



Stainless Plate

ORDERING INFORMATION

MODEL	DESCRIPTION
A/RH5	5% accuracy humidity transmitter
AN	Type II 10,000Ω thermistor
CP	Type III 10,000Ω thermistor
20K	20,000Ω thermistor
100	100Ω 385 PT RTD
IK	1,000Ω 385 PT RTD
R	Room
D	Duct
O	Outside air
SP	Stainless steel plate passive sensors only
-	No display
LCD	LCD display (current mode, room units only)

A/RH5 - 100 - R - LCD

Example: A/RH5-100-R-LCD A 5% accuracy room humidity transmitter with 100Ω RTD & LCD Display



HUMIDITY

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

SRH5 SERIES

DESCRIPTION

Designed for the HVAC control system, the **SRH5 Series** humidity transmitters offer reliable measurement of RH levels from 0 to 100% with an accuracy of $\pm 5\%$. Available in wall, duct, and outside air configurations, the SRH Series transmitters are easy to install and service if necessary. The transmitters utilize a field replaceable sensor tip that allows the end user to replace sensors on-site—eliminating factory calibration and downtime.

FEATURES

- $\pm 5\%$ RH accuracy
- **No recalibration required**
- **Replaceable sensor**
- **Capacitive sensor technology**
- **Reverse polarity protection**

WIRING

Shield	<input checked="" type="checkbox"/>	6	Ground connection
	<input checked="" type="checkbox"/>	5	
	<input checked="" type="checkbox"/>	4	
	<input checked="" type="checkbox"/>	3	(not used)
RTN/COM	<input checked="" type="checkbox"/>	2	→ RH (4 to 20 mA) output
+EXC	<input checked="" type="checkbox"/>	1	← Vin

SPECIFICATIONS

Accuracy	5% RH (0-100% RH) @ 73°F (23°C)
Drift	<1% RH/yr @ 73°F (23°C), 50% RH
Supply Voltage	12-30 VDC
Signal Output	4-20 mA, 2-wire
Maximum Output Impedance	700Ω @ 24 VDC $\Omega = (\text{supply} - 10) / 0.02$
Sensing Technology	Replaceable capacitive
Sensor Protection	Porous polyethylene
Protection	Reverse polarity protection
Operating Humidity	0 to 100%
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	ABS plastic (flammability, 94V-0)
Duct/OSA	Polycarbonate (flammability, 94V-0), NEMA 4 (IP65)

Wiring Terminations	Pluggable terminal block
Dimensions	
Room	4.7"H x 2.8"W x 0.9"D (12 x 7 x 2.3 cm)
Duct	5.1"L x 2.7"W x 2.4"D (13 x 6.8 x 6 cm) 8.5" (21.6 cm) probe length 1/2" probe Ø
OSA	6.1"L x 2.7"W x 4.5"D (6 x 16.8 x 11 cm) 8" (20 cm) probe length
Approvals	CE (EN61236-1998)
Weight	
Room	0.5 lb (0.23 kg)
Duct	1.3 lb (0.59 kg)
OSA	2.6 lb (1.2 kg)
Warranty	1 year (sensor) 3 years (electronics only)

ORDERING INFORMATION

MODEL	DESCRIPTION
SRH-5P-O-11-T0-N	5% Outside air humidity transmitter, 4-20 mA output
SRH-5P-D-11-T0-N	5% Duct mount humidity transmitter, 4-20 mA output
SRH-5P-W-11-T0-N	5% Wall mount humidity transmitter, 4-20 mA output

SRH-5P-T0	ACCESSORIES
	Replaceable 5% humidity sensor

setra



SRH-5P-W



SRH-5P-D



SRH-5P-O





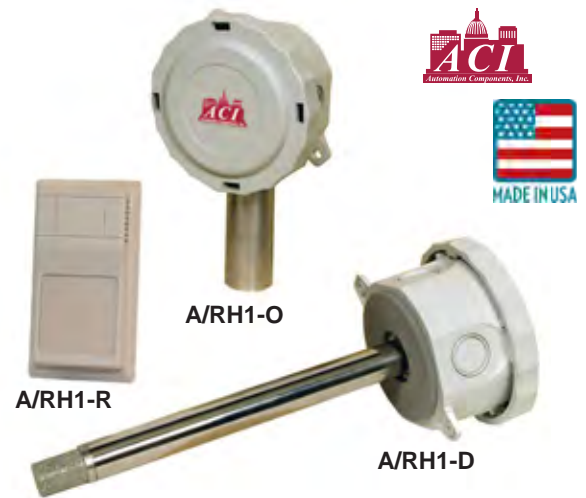
AUTOMATION COMPONENTS BAS/HVAC RH TRANSMITTERS A/RH1 SERIES

DESCRIPTION

Model A/RH1 Relative Humidity Transmitters provide RH readings at $\pm 1\%$ accuracy using a ceramic resistive sensor offering a 20% to 90% operating range. The transmitters come in wall, duct, and OSA mounting styles. They have multiple field-selectable outputs, including 4-20 mA, 0-10V, and 0-5V signals. The supply power is also selectable as 24 VDC or 24 VAC.

FEATURES

- Accuracy of $\pm 1\%$
- Duct and OSA twist-off weatherproof housing
- 24 VDC or 24 VAC power (field-selectable)
- 4-20 mA, 0-10V, or 0-5V signal (field-selectable)
- Field-calibratable
- Optional temperature sensor

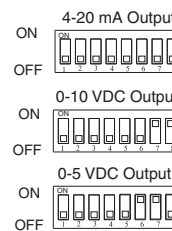


SPECIFICATIONS

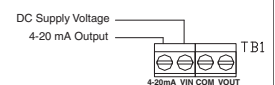
Accuracy	$\pm 1\%$ @ 77°F (25°C) over a selectable 20% span from 20% to 90%
Thermal Effect	<0.005% per °F (<0.01 per °C)
Supply Voltage	12-40 VDC or 24 VAC, selectable
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC (field selectable)
Measurement Range	0% to 100%
Sensing Technology	Capacitive
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	Plastic Delta-style
Duct/OSA	Plastic weatherproof
Dimensions	
Room	3.8"H x 2.8"W x 0.9"D (9.8 x 7 x 2.3 cm)
Duct	3.6" (9 cm) Ø head with 8.15"L (20 cm) probe 0.75" (1.9 cm) Ø
OSA	3.6" (9 cm) Ø head with 3.0"L (7.6 cm) probe 1.4" (3.6 cm) Ø
Warranty	5 years

WIRING

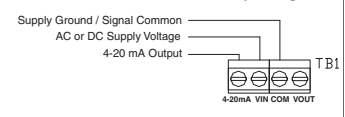
Output Selection Switches (SW 1)



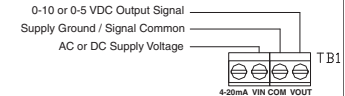
2 Wire Current Output Signal



3 Wire Current Output Signal



Voltage Output Signal



ORDERING INFORMATION

MODEL	DESCRIPTION
A/RH1	1% accuracy humidity transmitter
[]	20% Range ($\pm 1\%$ over specified 20% RH range - between 20 to 90% RH)
100	100Ω 385 PT RTD
1K	1,000Ω 385 PT RTD
AN	Type II 10,000Ω thermistor
CP	Type III 10,000Ω thermistor
20K	20,000Ω thermistor
R	Room
D	Duct
O	Outside air

A/RH1 - [60-80] - 100 - R

Example: A/RH1- [60-80] -100-R Room humidity transmitter with 1% accuracy from 60-80% RH and 100Ω 385 platinum RTD



HUMIDITY

ROOM OR DUCT HUMIDITY, TEMPERATURE, DEW POINT TRANSMITTER EE23 SERIES

DESCRIPTION

The **EE23 series** transmitter have been developed for high-precision measurement of relative humidity and temperature.

EE21 Series transmitters are available for wall and duct mounting with or without the snap inmounting kit, which allows a quick and easy exchange of the transmitter. Outputs can be selected between voltage and current.

An optional radiation shield providing a forced ventilation is recommended for use in outdoor applications. An optional special protection coating for the sensing element permits the permanent use in very polluted environments.

FEATURES

- **Two point adjustment**
- **Protective coating**
- **Optional snap mounting kit**
- **Optional radiation shield**
- **Passive temperature output**

SPECIFICATIONS

Accuracy	$\pm 1.3\% + 0.3\% \text{ mv}$, $\leq 90\% \text{ RH}$, 5° to 104°F (-15° to 40°C) mv = measured value
Hysteresis	$< 2\% \text{ RH}$
Supply Voltage	0-5 VDC: 10.5 - 35 VDC, 12 - 28 VAC 0-10 VDC: 15 - 35 VDC, 15 - 28 VAC 4-20 mA: 15 to 35 VDC, 15 to 28 VAC
Supply Current	Voltage output DC: $\leq 25 \text{ mA}$, with alarm module $\leq 35 \text{ mA}$ AC: $\leq 35 \text{ mA}$, with alarm module $\leq 60 \text{ mA}$
Current output	DC: $\leq 50 \text{ mA}$, with alarm module $\leq 60 \text{ mA}$ AC: $\leq 90 \text{ mA}$, with alarm module $\leq 110 \text{ mA}$ 4-20 mA, 0-5 VDC, 0-10 VDC
Signal Output	
Maximum Output Impedance (mA)	470 Ω
Minimum Output Impedance (VDC)	5000 Ω
Measurement Range	Humidity: 0-100%
Sensing Technology	Humidity: Capacitive, HC1000-200 Temperature: 1000 Ω Platinum (class A, DIN EN 60751)
Sensor Protection	Membrane filter, sintered stainless steel filter, metal grid filter, PTFE filter
Operating Temperature	Non-display: -40° to 140°F (-40° to 60°C) With display: -22° to 140°F (-30° to 60°C)
Enclosure	Polycarbonate or Aluminum alloy (AlSi9Cu3)
Enclosure Rating	NEMA 4 (IP65)
Wiring Terminations	Screw terminals maximum size wire AWG 16 (1.5 mm ²) Cable gland M16x1.5 or connection plug (only snap-in models N + M) Cable diameter 0.18 to 0.39" (4.5 to 10 mm)
Approvals	EN61326-1 EN61326-2-3 ICES-003 ClassB Industrial Environment FCC Part 15 ClassB
Warranty	1 year



E+E
ELEKTRONIK®
Ges.m.b.H.



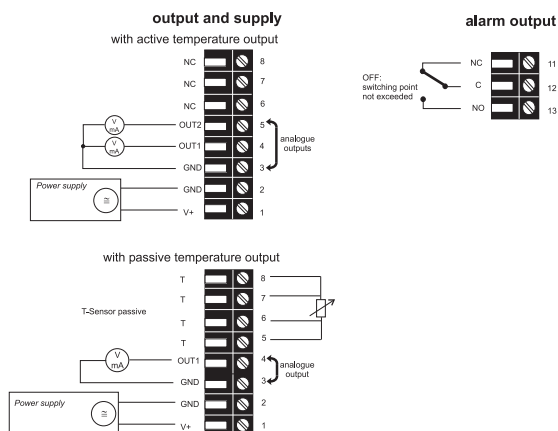
NEW!



APPLICATION

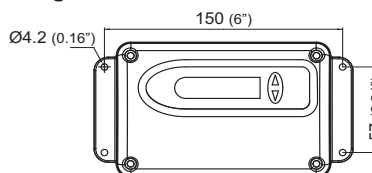
Green houses
Storage rooms
Swimming halls
Meteorology

WIRING

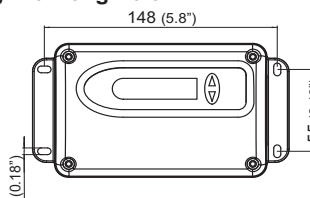


DIMENSIONS

Drilling with round hole:



Drilling with long hole:



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HUMIDITY

NEW!

472

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January 2012



ROOM OR DUCT HUMIDITY, TEMPERATURE, DEW POINT TRANSMITTER EE23 SERIES

ORDERING INFORMATION

MODEL	DESCRIPTION
EE23*	Humidity and temperature transmitter, 8 to 35 VDC, 12 to 30 VAC
HOUSING	
MFT	Humidity and temperature transmitter with metal housing
PFT	Humidity and temperature transmitter with polycarbonate housing
APPLICATION	
A	Wall mount
B	Duct mount
FILTER	
3	Stainless steel sintered filter
5	PTFE filter
6	Metal grid filter
PROBE LENGTH (MODEL "B" ONLY)	
5	Duct probe length, 7.9" (200 mm)
6	Duct probe length, 15.8" (400 mm)
DISPLAY	
-	No display
D03	LCD display
ALARM OUTPUT	
-	No alarm relay
SW	With alarm relay
CUSTOM CONFIGURATION, OPTION "C"	
-	Customer configured with included software
C-X-X	Kele configured for customer (See charts 1 & 2 below)
-	Units in °C
E01	Units in °F
XXX	Temperature range T-codes (See chart 3 below)

Chart 1	Chart 2	Chart 3			
Physical Parameters	2) Output Signals	3) Scaling (T - temperature, Td - dew point, Tf - frost point)			
A) - RH	2) - 0 to 5 VDC	T05	0 to 100	T57	-20 to 140
B) - temperature	3) - 0 to 10 VDC	T10	-20 to 120	T75	32 to 212
C) - dew point	6) - 4 to 20 mA	T12	-40 to 120	T77	20 to 140
D) - frost point		T15	20 to 120	T84	-40 to 300
		T23	-30 to 130	T131	-50 to 150
		T52	-40 to 180	T141	-100 to 20

Example: EE23-MFT-B-3-5-D03-AB-6-E01-T52 EE31 duct humidity and temperature transmitter with metal case, stainless steel sintered filter, 7.9" duct probe and LCD display kele configured for RH and temperature (°F), 4-20 mA outputs, humidity 0 to 100% and -40° to 180°F)

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HUMIDITY

NEW!



HUMIDITY

MULTIFUNCTION HUMIDITY/TEMPERATURE TRANSMITTER

EE31 SERIES

DESCRIPTION

The **EE31 Series** Multifunction Humidity/Temperature Transmitters offer precise measurement of humidity and temperature with field selectable analog outputs for both parameters. The unit can also calculate values for enthalpy, dew point, wet bulb, and absolute humidity. Two-point calibration can be performed using push-buttons on the circuit board-no need for dismounting which makes it ideal for regulatory environments. Built-in LEDs indicate transmitter status and errors. An optional display is available for local indication of measured values and minimum and maximum values.

FEATURES

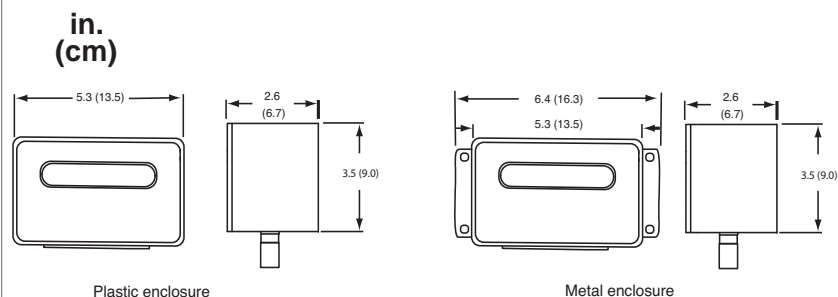
- **Accuracy of $\pm 1.3\%$ RH**
- **Derived values for dew point, enthalpy, and wet bulb**
- **Simple calibration**
- **Two status LEDs**
- **Optional display available**
- **Dual selectable output signals**
- **Replaceable sensor**



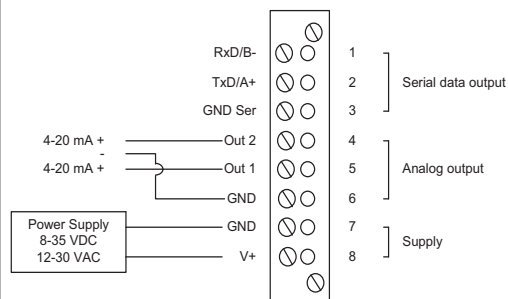
SPECIFICATIONS

Accuracy		Dewpoint	-112° to 140°F (-80° to 60°C)
Humidity	$\pm 1.3\%$ RH @ 5° to 104°F (-15° to 40°C), <90% RH	Enthalpy	0-64 Btu/lb (0 to 400 kJ/kg)
Temperature	$\pm 0.27^\circ\text{F}$ ($\pm 0.14^\circ\text{C}$) ± 0.06	Wetbulb	32° to 140°F (0° to 60°C)
Supply Voltage	8-35 VDC, 12-30 VAC	Absolute Humidity	0 to 60 gr/ft ³ (0 to 150 g/m ³)
Signal Output	Field selectable: 4-20 mA, 0-20 mA, (500 Ω max load), 0-5 V, or 0-10 V, Serial interface RS232C	Mixture Ratio	0 to 2900 gr/lb (0 to 425 g/kg)
Communication		Frost Point	-112° to 32°F (-80° to 0°C)
Measurement Range		Operating Temperature	-40° to 140°F (-40° to 60°C); Units with display: -4° to 122°F (-20° to 50°C)
Humidity	0 to 100% RH	Enclosure	NEMA 4, IP65
Temperature	-40° to 140°F (-40° to 60°C)	Wiring Terminations	Screw terminals
Sensing Technology		Dimensions	3.5"H X 6.4"W X 2.6"D (9.0 X 16.3 X 6.7 cm)
Humidity	Capacitive	Probe	2.9"L (7.2 cm) 0.5" diameter (1.2 cm)
Temperature	Pt1000 Ω RTD, 385 curve	Weight	1.0 lb (0.45 kg)
Sensor Protection	Stainless steel sintered filter 0.50"D (1.27 cm)	Warranty	1 year
Display Type	Optional, two line, alphanumeric LCD Display		

DIMENSIONS



WIRING





ORDERING INFORMATION

MODEL	DESCRIPTION
EE31*	Humidity and temperature transmitter, 8 to 35 VDC, 12 to 30 VAC
	HOUSING
MFT	Humidity and temperature transmitter with metal housing
PFT	Humidity and temperature transmitter with polycarbonate housing
	APPLICATION
A	Wall mount
B	Duct mount
D	Wall mount with remote sensing probe
	FILTER
3	Stainless steel sintered filter
5	PTFE filter
9	Stainless steel grid filter (up to 360°F/180°C)
	PROBE LENGTH (MODEL "B" ONLY)
2	Probe length 2.6" 65 mm
5	Probe length, 7.9" (200 mm)
6	Probe length, 15.8" (400 mm)
	DISPLAY
-	No display
D05	LCD display
	ALARM OUTPUT
-	No alarm relay
SW	With alarm relay
	CUSTOM CONFIGURATION, OPTION "C"
-	Customer configured with included software
C-X-X	Kele configured for customer (See charts 1 & 2 below)
-	Units in °C
E01	Units in °F
XXX	Temperature range T-codes (See chart 3 below)

Chart 1
Physical Parameters
A) - RH
B) - temperature
C) - dew point
D) - frost point
E) - wet bulb
F) - water vapor partial pressure
G) - mixture ratio
H) - absolute humidity
I) - specific enthalpy

Chart 2
2) Output Signals
2) - 0 to 5 VDC
3) - 0 to 10 VDC
6) - 4 to 20 mA

Chart 3
3) Scaling (T - temperature, Td - dew point, Tf - frost point)
T05 0 to 100 T57 -20 to 140
T10 -20 to 120 T75 32 to 212
T12 -40 to 120 T77 20 to 140
T15 20 to 120 T84 -40 to 300
T23 -30 to 130 T131 -50 to 150
T52 -40 to 180 T141 -100 to 20

Example: EE31-MFT-A-3-D05-AB-6-E01-T52 EE31 duct humidity and temperature transmitter with polycarbonate case, stainless steel sintered filter, LCD display and Kele configured for RH and temperature (°F), 4-20 mA outputs, humidity 0 to 100% and temperature from -40° to 180°F)

* Each EE31 is shipped with setup software and required cable. Choose Option "C" to receive your EE31 already pre-configured



HUMIDITY

1% ROOM AND DUCT MULTI-PARAMETER HUMIDITY AND TEMPERATURE TRANSMITTER HF5 SERIES

DESCRIPTION

The **HF5 Series** high performance psychrometric transmitters from Rotronics are ideal for all applications where exact measurement of humidity, enthalpy, dry bulb, wet bulb, temperatures plus other psychrometric parameters are critical. This high performance transmitter using air chip technology accurately measures relative humidity to within $\pm 0.8\%$ RH. The HydroClip2 probe can be individually calibrated and adjusted to increase measurement precision where you need it the most. The **HF5 Series** is available in a duct mount or wall mount configuration. This unit can be factory configured or software is available for field configuration.

FEATURES

- **Interchangeable probe**
- **Calculates all psychrometric values**
- **Automatic sensor and drift compensation**
- **Optional DIN rail mounting**
- **Field configurable with software**

APPLICATION

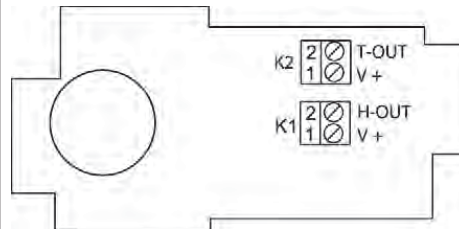
The HF5 is ideal for high accuracy HVAC applications, building management systems, museums, libraries, environmental monitoring systems. The HF5 Series measures dew point, wet bulb, enthalpy, specific humidity, absolute humidity and mixing ratio.

HydroClip2

The new HydroClip2 is available in various formats: from a simple plug-in probe for handheld instruments and data loggers to the highly developed cable probes for high temperature and other special applications. As standard, they all have high accuracy, which can be increased further by specific adjustments within our patented AirChip, making every HydroClip2 a high-end product for all applications.



WIRING



Terminals	Description
K2-2: T-OUT	Temperature output (+) OUT-2
K2-1: V+	Power supply: 10...28 VDC (+)

Terminals	Description
K1-2: H-OUT	Relative humidity or dew point (+) OUT-1
K1-1: V+	Power supply: 10...28 VDC (+)

Note: connect the + of the power supply to only one of the V+ terminals. The two terminals marked V+ are internally connected.

SPECIFICATIONS

Accuracy	$\pm 0.8\%$ RH @ 73°F (23°C) from 5% to 95% RH
Stability	0.5% drift per year
Repeatability	0.3% RH
Long Term Stability	<1% RH/year
Response Time	RH: Typically 10 seconds for 63 % of a jump 35 to 80 %RH (1 m/sec air flow at sensor) Temperature: Typically 4 seconds for 63 % of a change from 23 to 80 °C (1 m/sec air flow at sensor)
Supply Voltage	
HF52	10 to 28 VDC, $V_{min}=10V + (0.02 \times \text{load})$
HF53	15 to 40 VDC, 12 to 28 VAC
Signal Output	4-20 mA
Maximum Output Impedance (mA)	500Ω

Minimum Output Impedance (VDC)	1000Ω
Display	Optional: LCD, 1 or 2 decimals
Operating Humidity	0 to 100% non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure Rating	ABS/IP65 conforms to UL94-HB
Wiring Terminations	Screw terminals/ M16 cable gland or ½" conduit adapter
Dimensions	5.0" x 2.8" x 1.8" (12.9 x 7.2 x 4.5 cm)
Approvals	CE/EMC: EMC Directive 2004/108/EC
Weight	8.8 oz (250g)
Warranty	1 year

NEW!



1% ROOM AND DUCT MULTI-PARAMETER HUMIDITY AND TEMPERATURE TRANSMITTER HF5 SERIES

ORDERING INFORMATION

MODEL	DESCRIPTION
HF520	2-wire (loop powered), 10 to 28 VDC, 4...20 mA
HF532	3-wire, 15 to 40 VDC or 12 to 28 VAC, 4...20 mA
HF534	3-wire, 10 to 40 VDC or 8 to 28 VAC, 0...5 V
HF535	3-wire, 15 to 40 VDC or 12 to 28 VAC, 0...10 V
INSTALLATION/MOUNTING	
D	Duct mount (through wall)
W	Wall mount
PSYCHROMETRIC PARAMETERS	
B	Humidity (0...100 %RH) and Temperature - see range below
H	Humidity only (0...100 %RH)
A	Temperature & Dew / Frost point - see range below
C	Temperature & Wet Bulb temperature (Tw) - see range below
D	Temperature & Enthalpy (H) - see range below
TEMPERATURE OUTPUT RANGES	
XX	Insert desired temperature range code
OPTIONAL KEYPAD AND DISPLAY	
D	Keypad and display (HF52: no backlight – HF53: w. backlight)
X	No keypad and display
ELECTRICAL CONNECTION	
1	1x M16 cable grip (horizontal mounting)
2	1x M16 cable grip (vertical mounting - type D w/o display)
3	1x ½" conduit adapter (horizontal mounting)
4	1x ½" conduit adapter (vertical mounting - type D w/o display)
DEWPOINT, WETBULB OR ENTHALPY RANGES (optional)	
XX	Insert desired temperature range code

SELECT PROBE (REQUIRED WITH EACH TRANSMITTER)	
HC2-S	HyDro Clip Standard Climate Probe
HC2-IC102	PPS Probe thru wall, 6.5' (2m), 3.9" x 0.6"
HC2-IC302	PPS Probe thru wall, 6.5' (2m), 9.8" x 0.6"
HC2-IC402-A	PPS Probe thru wall, 6.5' (2m), 15.8" x 0.6"
HC2-IM102	Stainless steel probe thru wall, 6.5' (2m), 4.7" x 0.6"
HC2-IM302	Stainless steel probe thru wall, 6.5' (2m), 11.0" x 0.6"
HC2-IE302	Prerssurized environment probe, 5800 psi, 1/2" NPT

TEMPERATURE RANGE CODES	
K1	40° to 90°F
K2	0° to 100°F
K3	-20° to 120°F
K4	0° to 40°C
K5	-20° to 50°C
K6	-30° to 60°C
K7	0 to 50 BTU/lb (enthalpy)
K8	0 to 116 kJ/kg (enthalpy)
SC	Custom calibration

HF520 - D - B - 3 - D - 1 + HC2-S Example: HF520DB3D1+HC2-S 2 Wire psychrometric transmitter, duct mount, humidity and temperature outputs, display and HydroClip Standard Climate probe.

RELATED PRODUCTS

AC3006
HW4-E

Software interface cable (required)
HF500 Series calibration software

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HUMIDITY

NEW!



HUMIDITY

DEW POINT, ENTHALPY & WET BULB TRANSMITTERS

DP4A, EN4A, WB4A

DESCRIPTION

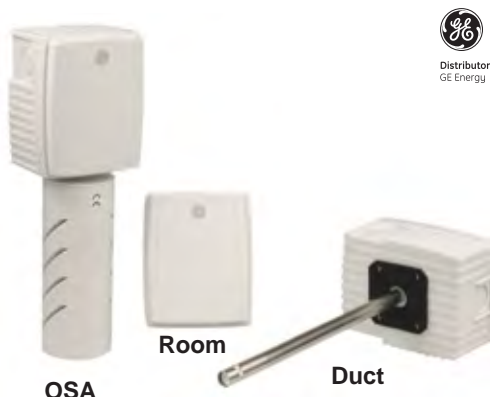
Model DP4 Dew Point, WB4 Wet Bulb, and EN4 Enthalpy Transmitters are rugged, compact, and ideally suited for monitoring dew point, wet bulb, or enthalpy in building automation and process applications. Using a capacitive RH sensor and an RTD temperature sensor, the unit's microprocessor computes the dew point, wet bulb, or enthalpy. Two linear outputs provide a 4-20mA signal for dew point, wet bulb, or enthalpy, and a 4-20 mA signal for dry bulb temperature.

FEATURES

- *Dew point accuracy of $\pm 1.8^{\circ}\text{F}$ ($\pm 1^{\circ}\text{C}$) over the specified range*
- *Enthalpy accuracy of ± 2 BTU/lb over specified range*
- *Wet bulb accuracy of $\pm 3^{\circ}\text{F}$ over the specified range*
- *Dry bulb accuracy of $\pm 0.5^{\circ}\text{F}$ ($\pm 0.3^{\circ}\text{C}$) over the specified range*
- *Two 4-20 mA output signals*
- *Microprocessor-based signal processing*
- *Weather resistant duct/OSA mounting*
- *Temperature compensated*

APPLICATIONS

- *DP4 supply air setpoint (condensation prevention)*
- *EN4 economizer efficiency*
- *WB4 evaporative cooling decision potential*



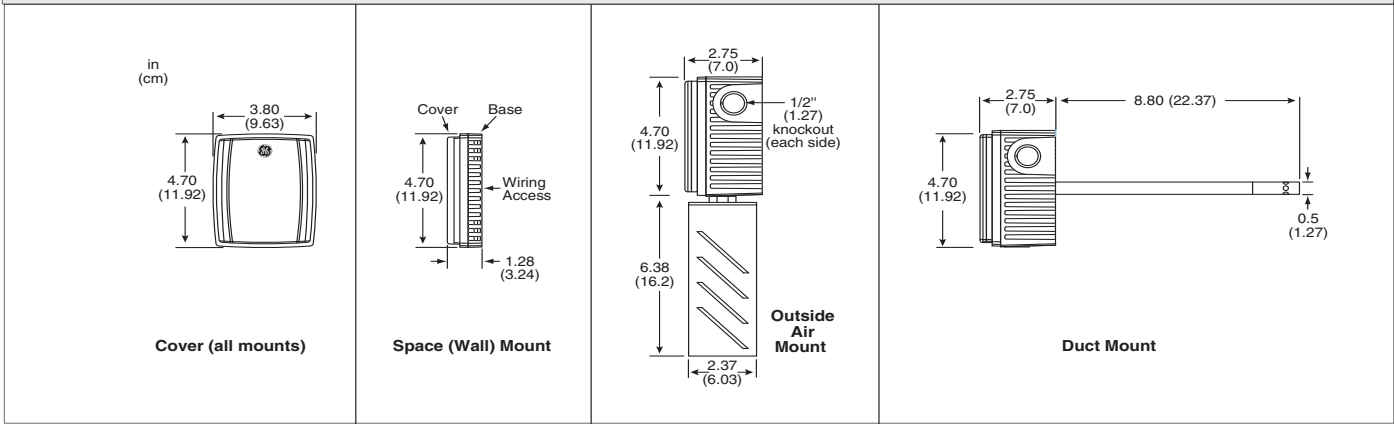
SPECIFICATIONS

Accuracy		Enthalpy	
Enthalpy	± 2 BTU/lb	Space/Duct/OSA	0-50 BTU/lb
Dew Point	$\pm 1.8^{\circ}\text{F}$ ($\pm 1^{\circ}\text{C}$)	Wet Bulb	
Wet Bulb	$\pm 3^{\circ}\text{F}$ ($\pm 1.7^{\circ}\text{C}$)	Duct/OSA	0° to 100°F (-17.8° to 37.8°C)
Dry Bulb	$\pm 0.5^{\circ}\text{F}$ ($\pm 0.9^{\circ}\text{C}$)	Space	40° to 90°F (4.4° to 32.2°C)
Supply Voltage	12-30 VDC	Dry Bulb	
Signal Output	Field selectable: 4-20 mA (700 Ω max load), 0-5 V, or 0-10 V Humidity and dry bulb temperature	Duct/OSA	-20° to 120°F (-28.8° to 49°C)
Measurement Range		Space	40° to 90°F (4.4° to 32.2°C)
Dew Point		Sensing Technology	Capacitive and replaceable
Duct/OSA	-20° to 120°F (-28.8° to 49°C)	Operating Humidity	0 to 99% RH, non-condensing
Space	40° to 90°F (4.4° to 32.2°C)	Operating Temperature	-40° to 140°F (-40° to 60°C)
		Approvals	CE
		Weight	1.0 lb (0.45 kg)
		Warranty	1 year

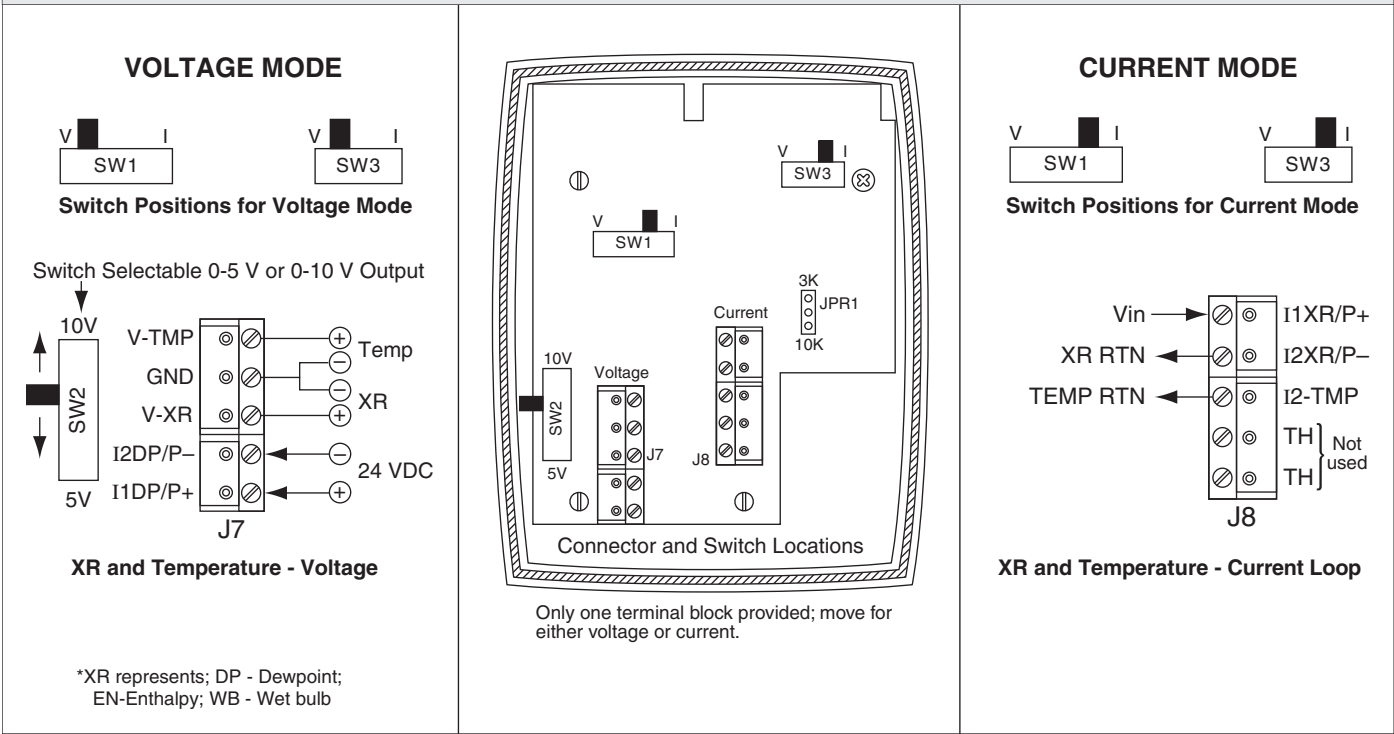


DEW POINT, ENTHALPY & WET BULB TRANSMITTERS
DP4A, EN4A, WB4A

DIMENSIONS



WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION
EN4A-D	Duct enthalpy and dry bulb transmitter
EN4A-O	OSA enthalpy and dry bulb transmitter
DP4A-D	Duct dew point and dry bulb transmitter
EN4A-S	Room enthalpy and dry bulb transmitter
DP4A-O	OSA/Wall dew point and dry bulb transmitter
DP4A-S	Room dew point and dry bulb transmitter
WB4A-D	Duct wet bulb and dry bulb transmitter
WB4A-O	OSA wet bulb and dry bulb transmitter
WB4A-S	Room wet bulb and dry bulb transmitter



HUMIDITY

INFRARED DEW POINT & GRAINS TRANSMITTER 9002

DESCRIPTION

The **VaporStat Model 9002** is an absolute humidity transmitter that measures the amount of water vapor in the air with adversity to temperature variations. The moisture level is then calculated as dew point and transmitted simultaneously as 0-10 VDC and 4-20 mA. A display and keyboard are incorporated for local indication and parameter adjustment. A contact closure is also incorporated with keyboard entries for set point and differential. The **Model 9002** is wall-mounted and available with accessories for duct and OSA applications.

APPLICATION

The Model 9002 sampling chamber measures the infrared light absorbed by the moisture in the air and processes it as dew point or grains of moisture per pound of dry air. The 0-10 VDC or 4-20 mA output ranges are selected at the keyboard and displayed on the LCD readout. A control contact energizes at the set point entered on the keyboard. The Model 9002 is ideally suited for local alarm and signaling for clean room controls, desiccant system controls, paper mill controls, and textile process controls as well as condensation prevention.



9002 and
T1508 Enclosure

FEATURES

- **Dew point accuracy $\pm 3.6^{\circ}\text{F}$ ($\pm 2^{\circ}\text{C}$)**
- **0-10V and 4-20 mA output**
- **Digital display or blank cover**
- **Patented infrared absorption platform**
- **Gold-plated element for durability**
- **Built-in keyboard for range adjust**
- **Elevation correction via keyboard**
- **Tamper-resistant keyboard cover**
- **10-minute field calibration with gas**

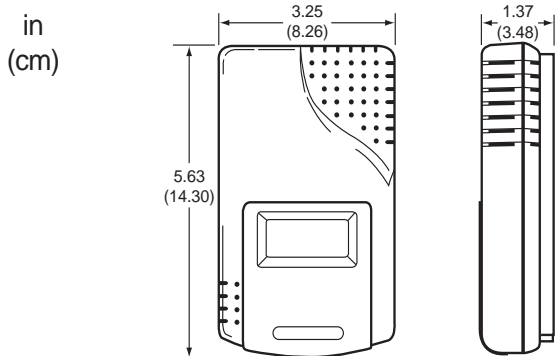
SPECIFICATIONS

Accuracy	Dew point: $\pm 3.6^{\circ}\text{F}$ (2.0°C) @ 77°F	Keypads	Four-key menu control
Supply Voltage	24 VAC, $\pm 25\%$, 2.75 VA	Life Expectancy	15 years
Signal Output	simultaneous outputs: 0-10V @ 1000Ω min 4-20 mA @ 500Ω max	Display	Two-line, 1/2" (1.27 cm) LCD
Relay Output	SPDT, 2A @ 24 VAC	Output Range Adjust	Within 0° to 80°F (-17 to 26°C)
Measurement Range	Dew point: 27° to 80°F (-3° to 27°C)	Operating Humidity	0% to 98%
Sensing Technology	Nondispersive infrared	Operating Temperature	32° to 120°F (0° to 50°C)
Calibration	In field with nitrogen gas	Warranty	18 months
Adjustments	Setpoint: Adjustable, full range Differential: Adjustable, full range		
Altitude Limits	Correctable to 5000' (1524m)		

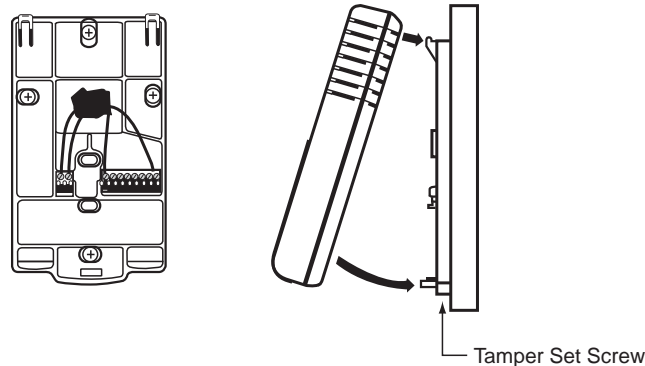
INFRARED DEW POINT & GRAINS TRANSMITTER
9002



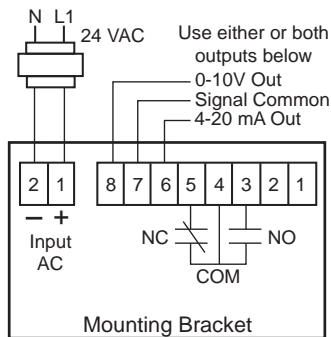
DIMENSIONS



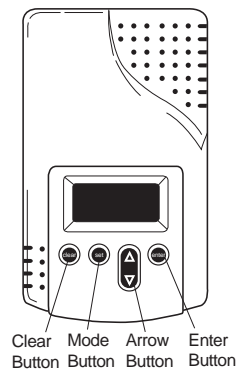
MOUNTING



WIRING



CONTROLS



SETUP

FACTORY OUTPUT SETTINGS

Dew point, 0° to 80 (-22° to 25) @ sea level
Moisture = 0-140 grains per lb of dry air @ sea level
Relay on @ 50 (10), off @ 59°F (15)

CHANGING SETTINGS

1. Press mode and clear at the same time for five seconds to enter the adjust mode.
2. Press mode key to display item to change: elevation, dew point, grains, or relay.
3. Use arrow keys to select ranges.
4. Press enter to confirm selection.
5. Press clear to finish and return to normal display.

ORDERING INFORMATION

MODEL	DESCRIPTION
9002	Dew point and grains 0-10 VDC/4-20 mA transmitter and SPDT contact
RELATED PRODUCTS	
T1508	Duct-mount accessory enclosure
T1551	OSA-mount accessory enclosure



HUMIDITY

3% HUMIDISTATS VH7200 SERIES

DESCRIPTION

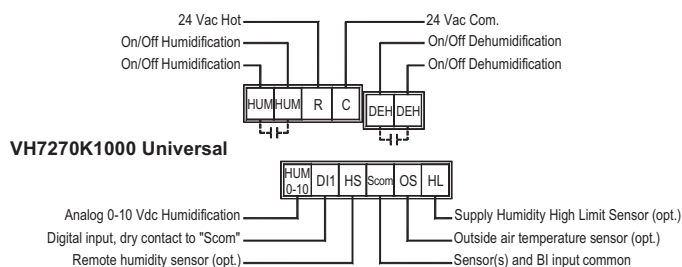
The **VH7200 Series Humidistats** are designed for controlling humidification and dehumidification equipment in HVAC and energy management systems. The humidistat utilizes a PI time proportional control algorithm to accurately control relative humidity. The **VH7200 Series** features adjustable control set point and custom setting the number of output cycles per hour (3 to 8 cycles/hr). Units accept a remote outdoor air temperature sensor which can be used to reset the humidity set point--minimizing energy consumption and condensation on windows and building structures. The high limit protection (**Models VH7270** only and requires remote humidity sensor) prevents damage due to over-humidification.



FEATURES

- **Designer wall mounting**
- **3% RH control accuracy**
- **Two status LEDs**
- **Proportional high limit override eliminates condensation problems**
- **Sensor failure protection**
- **Outdoor temperature reset**
- **Keypad lockout**
- **Backlit LCD two line display**

WIRING



SPECIFICATIONS

Accuracy	3% RH (20-100% RH) @ 50° to 90°F (10° to 32°C)	Resolution	Humidity 0.1% Temperature $\pm 0.2^{\circ}\text{F}$ ($\pm 0.1^{\circ}\text{C}$)
Supply Voltage	19-30 VAC, 50/60 Hz; 2 VA	Operating Humidity	0 to 95% RH non-condensing
Signal Output	0-10 VDC, 2 k Ω minimum load impedance	Operating Temperature	32° to 122°F (0° to 50°C)
Relay Output	1A continuous, 3A in-rush maximum @ 30 VAC	Temperature Range	Outdoor Air: -40° to 122°F (-40° to 50°C)
Setpoint Range	Humidification 10 to 90% RH Dehumidification 15 to 95% RH	Enclosure	ABS plastic
Binary Inputs	Relay dry contact	Wiring Terminations	Screw terminals
Sensing Technology	Bulk polymer	Approvals	UL 873, CSA, CE
Display	Two line, 16 character LCD	Weight	0.75 lb (0.34 kg)
		Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
VH7200A1000	Humidistat, 0 to 10 VDC (humidify), on/off (dehumidify)
VH7270F1000	Humidistat, 0-10 VDC (humidify), on/off (dehumidify)
VH7270K1000	Humidistat, 0-10 VDC and on/off (humidify), on/off (dehumidify)

	RELATED PRODUCTS	PAGE
HD20K	2% duct-mount humidity sensor	450
KHD2	2% Duct mount humidity transmitter, 4-20 mA output	427
KTO24	OSA thermistor sensor, Type 2, model 24, $\pm 0.5^{\circ}\text{F}$ (0.28°C)	1024
ST-024	OSA thermistor sensor, Type 2, model 24, $\pm 0.36^{\circ}\text{F}$ (0.20°C)	1023



DESCRIPTION

The **Model TDC-BH-U** is a duct mount stand-alone programmable electronic humidistat designed for controlling humidification and dehumidification equipment in HVAC and energy management systems. The **TDC-BH-U** features one internal humidity sensor, one external temperature sensor input and two relay outputs. Humidity reset is possible using the SOD-Tn10 outdoor air temperature sensor for cold weather applications to prevent condensation. The **Model TDC-BH-U-D** comes with all of the features of the base model plus a time clock feature for advanced programming with 48 hour backup.



TDC-BH-U

FEATURES

- *Humidification and Dehumidification control*
- *External temperature input for set point setback*
- *Programmable user interface*
- *Optional time clock*
- *2 relay outputs*
- *Easy to read display*
- *Replaceable sensor*

SPECIFICATIONS			
Accuracy	±5% RH (10-90%)	Enclosure Rating	Polycarbonate PC (UL class V-0)
Supply Voltage	24 VAC ±10%, 50-60 Hz, 24 VDC	Wiring Terminations	Terminal block (12 to 24 AWG)
Relay Output	2 NO SPST Relays, 2 Amps @ 24 VAC	Approvals	CE
Operating Humidity	0% to 95% non-condensing	Weight	0.58 lb (0.26 kg)
Operating Temperature	32° to 122°F (0° to 50°C)	Warranty	2 years

CONNECTION TERMINALS

Humidify / Fan
24 VAC/VDC
GND

Dehumidify / Fan
10kΩ Type II thermistor

Terminal-description:

1. Connection for power-supply (24 VAC/VDC, ±10%). In case of DC, connect the negative power-terminal. Common connection for analog inputs and outputs.
2. Connection for power-supply (24 VAC/VDC, ±10%). In case of DC, connect the positive power-terminal.
3. Contact "DO 1" Humidify or Fan, 2A maximum
4. Contact "DO 1" Humidify or Fan, 2A maximum
5. Contact "DO 2" Dehumidify or Fan, 2A maximum
6. Contact "DO 2" Dehumidify or Fan, 2A maximum
7. Thermistor input "RT" (10kΩ Type II thermistor)
8. Thermistor input "RT" (10kΩ Type II thermistor)

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NEW!

483

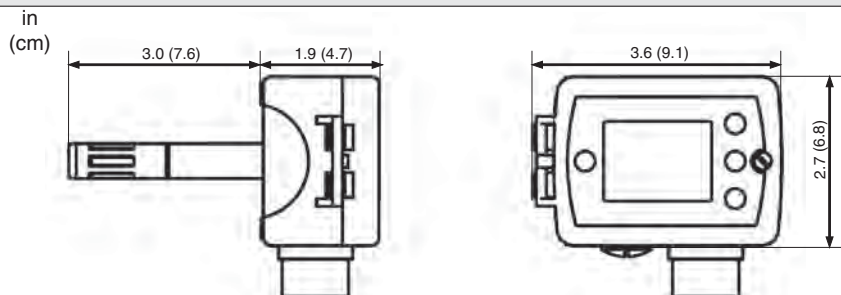
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HUMIDITY



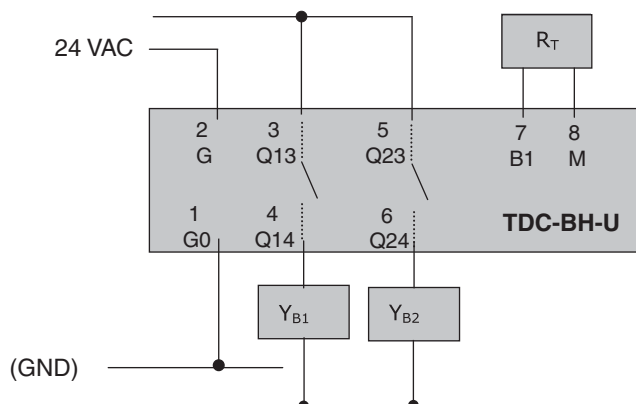
HUMIDITY

5% DUCT MOUNT HUMIDSTAT TDC SERIES

DIMENSIONS



WIRING



Humidify / Dehumidify, TDC-BH-U (-D)

Y _{B1}	Binary output 1: Humidify	0 to 24 VAC or 0 to 30 VDC
Y _{B2}	Binary output 2: Dehumidify	0 to 24 VAC or 0 to 30 VDC
R _T	Temperature input for setback:	10k Ω Type II thermistor

Humidify plus fan control, TDC-BH-U (-D) – W04

Y _{B1}	Binary output 1: Humidify	0 to 24 VAC or 0 to 30 VDC
Y _{B2}	Binary output 2: Fan	0 to 24 VAC or 0 to 30 VDC
R _T	Temperature input for setback:	10k Ω Type II thermistor

Dehumidify plus fan control, TDC-BH-U (-D) – W05

Y _{B1}	Binary output 1: Fan	0 to 24 VAC or 0 to 30 VDC
Y _{B2}	Binary output 2: Dehumidify	0 to 24 VAC or 0 to 30 VDC
R _T	Temperature input for setback:	10k Ω Type II thermistor

ORDERING INFORMATION

MODEL

TDC-BH-U-W20

TDC-BH-U-W24

TDC-BH-U-W25

TDC-BH-U-D-W20

TDC-BH-U-D-W24

TDC-BH-U-D-W25

DESCRIPTION

5% duct mount humidistat for humidification and dehumidification with display

5% duct mount humidifying humidistat with display and fan control option

5% duct mount dehumidifying humidistat with display and fan control option

5% duct mount humidistat for humidification and dehumidification with display with programmable time clock

5% duct mount humidifying humidistat with display, fan control option and programmable time clock

5% duct mount dehumidifying humidistat with display, fan control option and programmable time clock

RELATED PRODUCTS

AMC-1

Cable gland for SDC-H1

AMC-2

Conduit fitting, 1/2 in NPT for SDC-H

AES-HT-A5

5% Replacement humidity element

S-TN10-2

Raw temperature sensor with six foot cable, 10k Ω Type II thermistor

SD-TN10-12-2

Five inch duct sensor with six foot cable, 10k Ω Type II thermistor

SD-TN10-20-2

Eight inch duct sensor with six foot cable, 10k Ω Type II thermistor

SDB-TN10-12-W

Five inch duct sensor with housing and six foot cable, 10k Ω Type II thermistor

SDB-TN10-20-W

Eight inch duct sensor with housing and six foot cable, 10k Ω Type II thermistor

SOD-TN10

Outdoor temperature sensor

10

HUMIDITY

NEW!



5% WALL MOUNT HUMIDISTAT TCY-BH SERIES

DESCRIPTION

The **Model TCY-BH-U** is a wall mount stand-alone programmable electronic humidistat designed for controlling humidification and dehumidification equipment in HVAC and energy management systems. The **TCY-BH-U** features one internal humidity sensor, one external temperature sensor input and two relay outputs. Humidity reset is possible using the SOD-Tn10 outdoor air temperature sensor for cold weather applications to prevent condensation. The **TCY-BH-U-D** comes with all of the features of the base model plus a time clock feature for advanced programming with 48 hour backup.

VECTOR

CE

NEW!



TCY-BH-U

FEATURES

- **Humidification and dehumidification control**
- **External temperature input for set point setback**
- **Programmable user interface**
- **Optional time clock**
- **2 relay outputs**
- **Easy to read display**
- **Replaceable sensor**

SPECIFICATIONS			
Accuracy	±5% RH (10-90%)	Approvals	CE
Supply Voltage	24 VAC ±10%, 50-60 Hz, 24 VDC	Weight	0.58 lb (0.26 kg)
Relay Output	2 NO SPST Relays, 2 Amps @ 24 VAC	Warranty	2 years
Operating Humidity	0% to 95% non-condensing		
Operating Temperature	32° to 122°F (0° to 50°C)		
Enclosure Rating	ABS plastic (UL94 class V-0)		
Wiring Terminations	Terminal block (12 to 24 AWG)		
Dimensions	4.4"H x 2.9"W x 0.6"D (11.2 x 7.3 x 1.5 cm)		

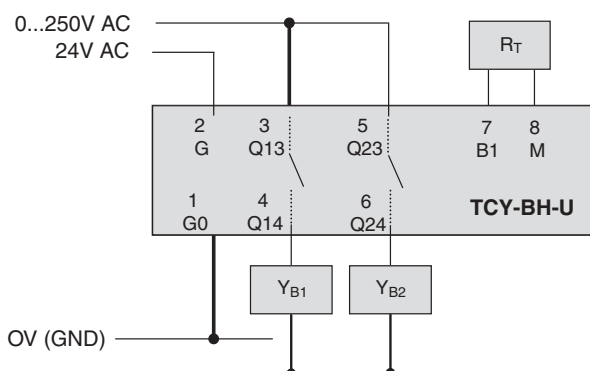
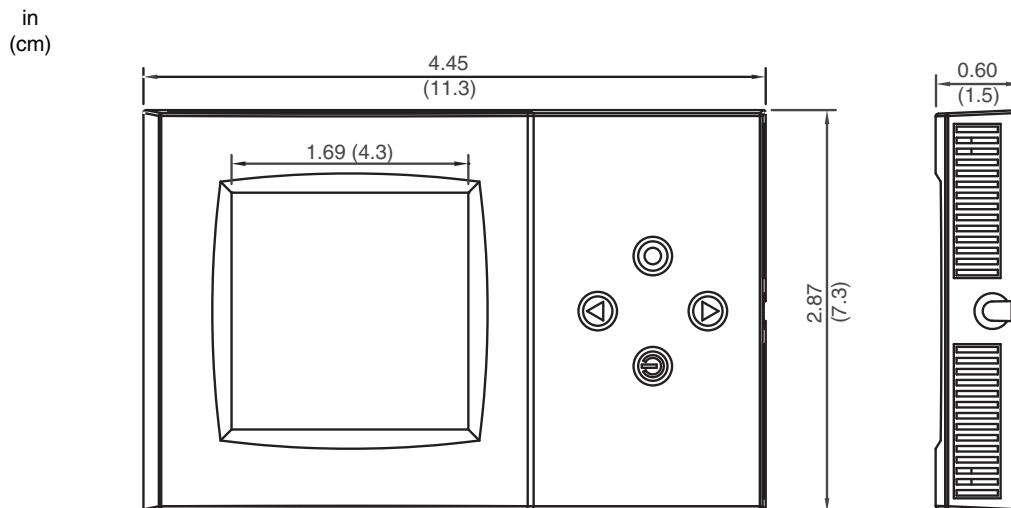
CONNECTION TERMINALS	
<p>Humidify / Fan 24 VAC/VDC GND</p> <p>Dehumidify / Fan 10kΩ Type II thermistor</p>	<p>Terminal-description:</p> <ol style="list-style-type: none"> 1. Connection for power-supply (24 VAC/VDC, ±10%). In case of DC, connect the negative power-terminal. Common connection for analog inputs and outputs. 2. Connection for power-supply (24 VAC/VDC, ±10%). In case of DC, connect the positive power-terminal. 3. Contact "DO 1" Humidify or Fan, 2A maximum 4. Contact "DO 1" Humidify or Fan, 2A maximum 5. Contact "DO 2" Dehumidify or Fan, 2A maximum 6. Contact "DO 2" Dehumidify or Fan, 2A maximum 7. Thermistor input "RT" (10kΩ Type II thermistor) 8. Thermistor input "RT" (10kΩ Type II thermistor)



HUMIDITY

5% WALL MOUNT HUMIDISTAT TCY-BH SERIES

DIMENSIONS / WIRING



Humidify/Dehumidify, TCY-BH-U (-D)

YB1	Humidifier	0...24 VAC or 0...30 VDC
YB2	De-humidifier	0...24 VAC or 0...30 VDC
RT	Temperature input for setback:	NTC 10k Ω @ 25°C (77°F)

Humidify plus fan control, TCY-BH-U (-D) – W04

YB1	Humidifier	0...24 VAC or 0...30 VDC
YB2	Fan	0...24 VAC or 0...30 VDC
RT	Temperature input for setback:	NTC 10k Ω @ 25°C (77°F)

Dehumidify plus fan control, TCY-BH-U (-D) – W05

YB1	Fan	0...24 VAC or 0...30 VDC
YB2	De-humidifier	0...24 VAC or 0...30 VDC
RT	Temperature input for setback:	NTC 10k Ω @ 25°C (77°F)

ORDERING INFORMATION

MODEL

TCY-BH-U-W20

TCY-BH-U-W24

TCY-BH-U-W25

TCY-BH-U-D-W20

TCY-BH-U-D-W24

TCY-BH-U-D-W25

DESCRIPTION

5% wall mount humidistat for humidification and dehumidification with display with programmable time clock

5% wall mount humidifying humidistat with display, fan control option and programmable time clock

5% wall mount dehumidifying humidistat with display, fan control option and programmable time clock

5% wall mount humidistat for humidification and dehumidification with display

5% wall mount humidifying humidistat with display and fan control option

5% wall mount dehumidifying humidistat with display and fan control option

RELATED PRODUCTS

AMC-1

Cable gland for SDC-H1

AMC-2

Conduit fitting, 1/2 in NPT for SDC-H

AES-HT-A5

5% Replacement humidity element

S-TN10-2

Raw temperature sensor with six foot cable, 10k Ω Type II thermistor

SD-TN10-12-2

Five inch duct sensor with six foot cable, 10k Ω Type II thermistor

SD-TN10-20-2

Eight inch duct sensor with six foot cable, 10k Ω Type II thermistor

SDB-TN10-12-W

Five inch duct sensor with housing and six foot cable, 10k Ω Type II thermistor

SDB-TN10-20-W

Eight inch duct sensor with housing and six foot cable, 10k Ω Type II thermistor

SOD-TN10

Outdoor temperature sensor



3% WALL MOUNT PROPORTIONAL HUMIDISTAT
TCY3 SERIES

DESCRIPTION

The **Model TCY3** is a stand-alone programmable electronic humidistat designed for proportional control of humidification and dehumidification equipment in HVAC and energy management systems. It is available in wall mount or duct mount versions. For wall mounting applications the TCY3-T1102-H-U features one internal humidity sensor, one external temperature sensor input and two analog outputs. For duct applications use model number TCY3-T1102-U with the SDC-H1 duct humidity transmitter. Humidity reset is possible using the SOD-Tn10 outdoorair sensor for cold weather applications to prevent condensation. The **Model TCY3 with the "D" option** comes with a time clock feature for advanced programming with 48 hour backup.

FEATURES

- Humidification and dehumidification control
- External temperature input for set point setback
- Programmable user interface
- Optional time clock
- 2 analog outputs
- Easy to read display



VECTOR

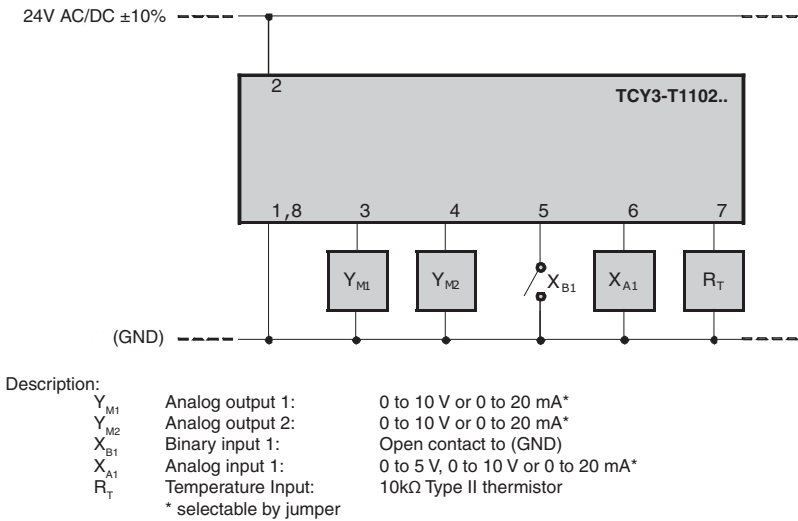
CE

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SPECIFICATIONS

Accuracy	±3% RH (15-90%), 2% optional
Supply Voltage	24 VAC ±10%, 50-60 Hz, 24 VDC
Signal Output	2 analog outputs (0-10v, 4-20 mA or custom range)
Operating Humidity	0% to 95% non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Enclosure Rating	ABS plastic (UL94 class V-0)
Wiring Terminations	Terminal block (12 to 24 AWG)
Approvals	CE
Weight	0.58 lb (0.26 kg)
Warranty	2 years

WIRING



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HUMIDITY

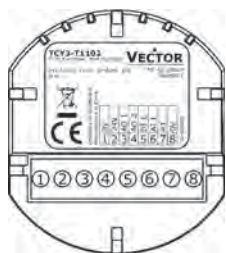
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HUMIDITY

3% WALL MOUNT PROPORTIONAL HUMIDISTAT TCY3 SERIES

INSTALLATION

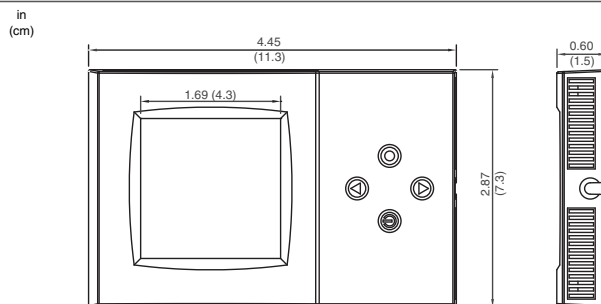


Terminal-description:

1. Connection for power-supply (24 VAC/VDC, $\pm 10\%$). In case of DC, connect the negative power-terminal. Common connection for analog in- and outputs.
2. Connection for power-supply (24 VAC/VDC, $\pm 10\%$). In case of DC, connect the positive power-terminal.
3. Analog-output "AO 1" (Jumper-selectable between 0 to 10 V or 0 to 20 mA)
4. Analog-output "AO 2" (Jumper-selectable between 0 to 10 V or 0 to 20 mA)
5. Digital input (open contact to GND)
6. Analog input "AI 1" (Jumper-selectable between 0 to 10 V or 0 to 20 mA)
7. Thermistor input "RT" (10k Ω Type II thermistor)

Internally connected with terminal 1. Common connection for analog inputs and outputs

DIMENSIONS



ORDERING INFORMATION

Model	Accuracy	Mounting	Display	Clock	Scheduling	Transmitter
TCY3T1102HUW24	$\pm 3\%$ RH (15-90%)	Wall	Yes	No	No	Integral
TCY3T1102HUW25	$\pm 3\%$ RH (15-90%)	Wall	Yes	No	No	Integral
TCY3T1102HUDW24	$\pm 3\%$ RH (15-90%)	Wall	Yes	Yes	Yes	Integral
TCY3T1102HUDW25	$\pm 3\%$ RH (15-90%)	Wall	Yes	Yes	Yes	Integral

Name SKU	Accuracy	Mounting	Probe Length	Display	Clock	Scheduling	Sensor Type	Connection Style	Transmitter
TCY3T1102UW26	$\pm 3\%$ RH (15-90%), 2% optional	Wall of Duct	N/A	Yes	No	No	N/A	Terminal block	Order separately below
TCY3T1102UW27	$\pm 3\%$ RH (15-90%), 2% optional	Wall of Duct	N/A	Yes	No	No	N/A	Terminal block	Order separately below
TCY3T1102UDW26	$\pm 3\%$ RH (15-90%), 2% optional	Wall of Duct	N/A	Yes	Yes	Yes	N/A	Terminal block	Order separately below
TCY3T1102UDW27	$\pm 3\%$ RH (15-90%), 2% optional	Wall of Duct	N/A	Yes	Yes	Yes	N/A	Terminal block	Order separately below
SDC-H1-08-A2-1	$\pm 2\%$ RH (10 to 90%)	Duct	3"	N/A	N/A	N/A	Replaceable	Strain relief	For use with duct controller
SDC-H1-08-A2-2	$\pm 2\%$ RH (10 to 90%)	Duct	3"	N/A	N/A	N/A	Replaceable	Conduit adapter	For use with duct controller
SDC-H1-08-A3-1	$\pm 3\%$ RH (20 to 80%)	Duct	3"	N/A	N/A	N/A	Replaceable	Strain relief	For use with duct controller
SDC-H1-08-A3-2	$\pm 3\%$ RH (20 to 80%)	Duct	3"	N/A	N/A	N/A	Replaceable	Conduit adapter	For use with duct controller
SDC-H1-16-A2-1	$\pm 2\%$ RH (10 to 90%)	Duct	6"	N/A	N/A	N/A	Replaceable	Strain relief	For use with duct controller
SDC-H1-16-A2-2	$\pm 2\%$ RH (10 to 90%)	Duct	6"	N/A	N/A	N/A	Replaceable	Conduit adapter	For use with duct controller
SDC-H1-16-A3-1	$\pm 3\%$ RH (20 to 80%)	Duct	6"	N/A	N/A	N/A	Replaceable	Strain relief	For use with duct controller
SDC-H1-16-A3-2	$\pm 3\%$ RH (20 to 80%)	Duct	6"	N/A	N/A	N/A	Replaceable	Conduit adapter	For use with duct controller

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HUMIDITY

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January 2012



CONDENSATION MONITOR

EE46

DESCRIPTION

EE46 condensation monitors are used to monitor the formation of condensation on chilled ceilings or to prevent condensation at critical spots of heating, ventilation and air conditioning systems. It is also used as a dew point monitor for systems operating near the dew point.

The condensation monitor measures the relative humidity near the dew point using its high-quality capacitive sensor. Once a 90% RH condition is reached, a contact will energize signaling an approaching condensation condition and that an appropriate action is required to avoid condensation forming. An additional status light indicates and visually confirms the condensation danger.

The **EE46** is highly insensitive to dust and dirt and is ideal for mounting on walls, ducts and pipes up to 2". Each EE46 comes with an adjustable and removable cable tie for mounting but also has an adhesive back for added security.

FEATURES

- **Compact design**
- **Fast response time**
- **Dust protection**
- **Easy mounting**
- **Visual status indication**

SPECIFICATIONS

Switch Point	90% RH, $\pm 3\%$
Supply Voltage	24 VAC/VDC $\pm 20\%$
Supply Current	<3 mA
Relay Output	24 VAC/VDC, 1A
Display	Single red LED
Operating Humidity	10 to 100% RH
Operating Temperature	32° to 122°F (0° to 50°C)
Materials Of Construction	Polycarbonate
Enclosure Rating	Fire resistant UL94-V0
Approvals	CE, EN61326-1, EN61326-2-3 industrial environment
Weight	2.1 oz (60g)
Warranty	1 year

NEW!

E+E
ELEKTRONIK®
Ges.m.b.H.



EE46

CE

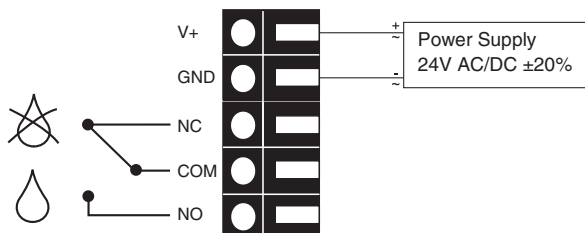


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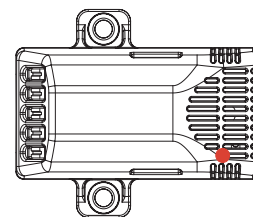
HUMIDITY

WIRING

Connection Diagram



Status Indication



- LED continuous red: Operating < 90% RH
- LED blinking red: Condensation danger

NEW!



HUMIDITY

CONDENSATION MONITOR

EE46

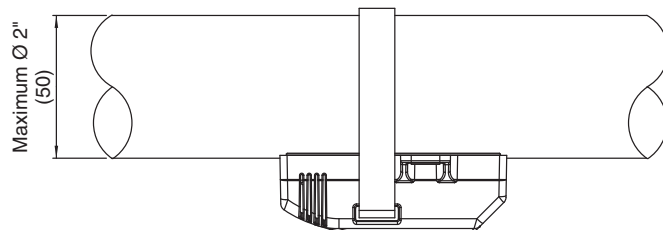
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HUMIDITY

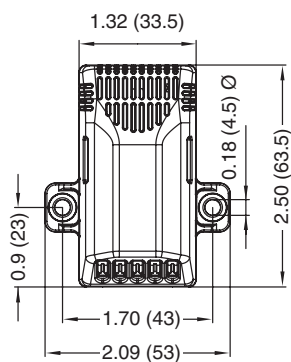
DIMENSIONS

Dimensions - in (mm)

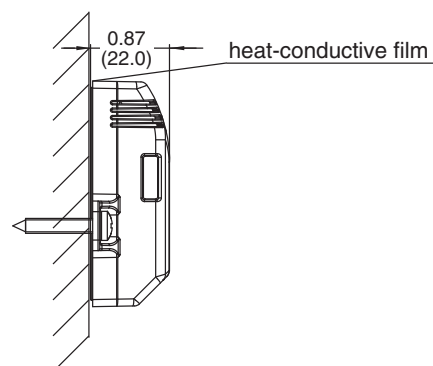
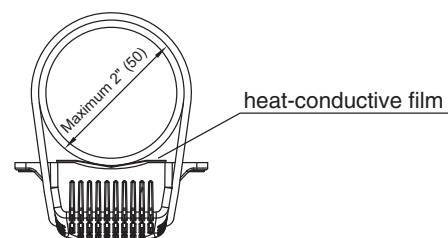
Pipe mounting



Wall mounting



Installation



ORDERING INFORMATION

MODEL
EE46

DESCRIPTION
Pipe, wall or duct mounted condensation monitor

NEW!

490

001-901-382-6084 International | 888-397-5353 USA | kele.com

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January 2012



ROOM AND DUCT HUMIDISTATS HC-101, HC-201

Schneider
Electric

DESCRIPTION

The **Models HC-101 and HC-201 Humidistats** are used for low or line voltage ON/OFF single-stage control of humidifiers, dehumidifiers, valves, solenoids, compressors, relays, and other electrical components.

FEATURES

- 18-month warranty
- Economical and reliable humidity control



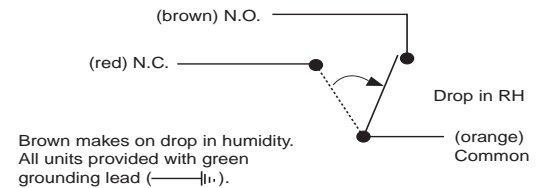
HC-101



HC-201

MAXIMUM ELECTRICAL RATINGS					
MODEL	VAC 50/60 Hz	FLA	LRA	RESISTIVE AMPS	PILOT DUTY VA
HC-101	24	—	—	8	60
HC-201	120	7.2	43.2	8	345

WIRING



SPECIFICATIONS / ORDERING INFORMATION

MODEL	DESCRIPTION	SCALE RANGE	DIFF	AMBIENT LIMITS °F (°C)		CONNECTION	WEIGHT	COVER	DIMENSIONS in (cm) (HxWxD)
				Operating	Shipping and Storage				
HC-101	Room	10% to 90%	RH 5%	40 to 125 (4 to 52)	-40 to 140 (-40 to 60)	6" (15.0 cm) Color-coded leads	1.0 lb (0.45 kg)	Beige plastic	4.38 x 2.88 x 1.63 (11.13 x 7.32 x 4.14)
HC-201	Duct	15% to 95%	RH 5%	40 to 125 (4 to 52)	-40 to 140 (-40 to 60)	Coded screw terminals	1.5 lb (0.68 kg)	Metal	4.38 x 6.50 x 2.25 (11.13 x 16.51 x 5.72)

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HUMIDITY



HUMIDITY

ROOM HUMIDISTAT

W43A-14

DESCRIPTION

The SPDT contact action of the **Model W43A-14 Humidistat** provides control of humidifying or dehumidifying equipment. A flush-mounting bracket that fits a standard outlet box is supplied. The **Model W43A** features field-adjustable high and low stops. Stops can be set for locked setting.

ACCESSORIES

The **Model W43A-14** includes A faceplate for horizontal mounting. The plate is for on-the-job installation over vertical plate. It can be field converted to concealed adjustment. Specify plate kit PLT333-12R (vertical) or PLT333-9R (horizontal).



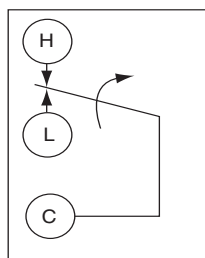
W43A

FEATURES

- **One-year warranty**
- **Horizontal or vertical mounting**

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WIRING



Action on increase of humidity

DIMENSIONS

MODEL	SWITCH ACTION	RANGE	DIFF %	DIMENSIONS in (cm) (HxW)
W43A-14	SPDT	0% to 70% RH	4% RH	4.71 x 2.96 (12.0 x 7.5)

MAXIMUM ELECTRICAL RATINGS

MOTOR RATINGS VAC	120	208	240	WEIGHT lb (kg)
AC full load amps	6.0	3.5	3.0	1.0 (0.45 kg)
AC locked rotor amps	36.0	21.0	18.0	1.0 (0.45 kg)
Pilot Duty 125 VA, 24-277 VAC (low or line voltage)				

ORDERING INFORMATION

MODEL
W43A-14C

DESCRIPTION
SPDT switch action, 4% RH Diff %



OUTDOOR ASPIRATED HUMIDITY / TEMPERATURE HOUSING

A21

DESCRIPTION

Model A21 Outdoor Aspirated Humidity/Temperature Housing provides powered aspiration for outdoor monitoring of humidity and temperature. The NEMA 3R enclosure is painted white to reduce the effect of radiation, and the enclosure has a lockable latch for security.



OPERATION

The fan pulls air in from the lower vent intake and exhausts the air out the upper opposing vent of the enclosure at 12 CFM. The 24 VDC power is supplied for both the fan and transmitters. The transmitter power is internally filtered from any fan motor noise that might affect the transmitter signal.



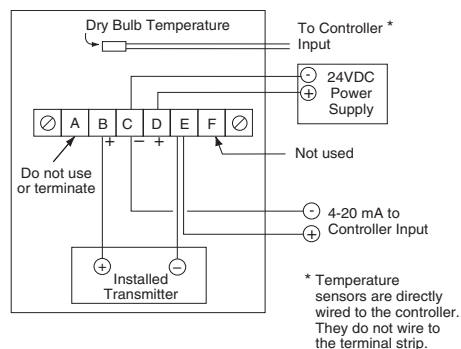
SPECIFICATIONS

Supply Voltage	24 VDC @ 110 mA (plus power requirements for the humidity/temperature transmitters)	Filter Type	Washable foam filter
Maximum Output Impedance	47Ω added to the 4-20 mA transmitter	Operating Temperature	-40° to 120°F (-40° to 49°C)
Fan	12 CFM	Enclosure Rating	NEMA 3R with white enamel paint and latch for padlock
		Warranty	Hinge Piano-type, left-hand side 1 year

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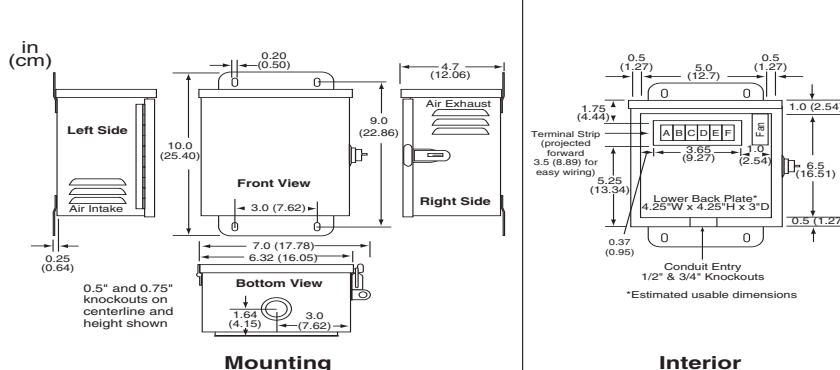
HUMIDITY

WIRING



A21

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION	
A21	Outdoor aspirated humidity/temperature housing	
RELATED PRODUCTS		PAGE
A21-FAN	Replacement fan assembly	493
HW20K	2% wall-mount humidity sensor	425
HW30K	3% wall-mount humidity sensor	450
KTM* Series	KTM* Series raw encapsulated thermistor and RTD sensors	1048
PN-46	Aluminum sensor holder with adhesive backing	1092
ST-R* Series	ST-R* Series raw encapsulated thermistor and RTD sensors	1046



HUMIDITY

LASCAR DATA LOGGER EL-USB SERIES DATA LOGGER

DESCRIPTION

Lascar's range of USB data loggers measures and records a variety of parameters such as temperature, humidity, voltage, current and carbon monoxide. Simply insert any of these loggers into your computer's USB port, name it, choose your required sampling rate and set high and low alarms. Logged data is displayed using Lascar's FREE configuration and analysis software.

FEATURES

- **Compatible with Windows 2000®, XP® Vista® 32-bit and Windows 7® 64-bit**
- **Assign unique logger identity**
- **Set sample rate and alarm thresholds**
- **Choose delayed start time if required**
- **Download data in .txt format to be viewed as graph or exported to standard spreadsheet**

APPLICATION

- **Food and pharmaceutical storage**
- **Temperature controlled haulage**
- **Refrigerator or freezer monitoring**
- **HVAC monitoring**
- **Factory floors and warehousing**
- **Laboratory conditions**
- **Pressure monitoring**



EL Series

- **Flow monitoring**
- **Level monitoring**
- **Power usage**
- **Gas detection**
- **pH level monitoring**

SPECIFICATIONS

Supply Voltage	3.6 Volt lithium battery (except EL-USB-RT)	Dimensions	
EL-USB-RT	USB connection only	1	1.02" dia. x 3.86" (2.59 x 9.8 cm)
Battery Life	1 year (depending on sample rate, ambient temperature, and alarm LED use)	2, 3, 4	1.04" dia. x 4.06" (2.64 x 10.31 cm)
LED Indication	Blinking for operation verification	2-LCD, CO	0.90" dia. x 4.90" (2.28 x 12.45 cm)
		RT	0.40" dia. x 3.03" (1.04 x 7.7)
		Weight	1.0 lb (0.45 kg)
		Warranty	1 year

ORDERING INFORMATION

Model	Type	Measurement Range	Reading Capacity	Sample Intervals	Additional Features
EL-USB-1	Temperature	-31° to 176°F (-35° to 80°C)	16,000 Samples	10 seconds to 12 hours	NEMA 4X, IP67 cap installed
EL-USB-2	Temperature & humidity	-31° to 176°F (-35° to 80°C) 0 to 100% RH	16,000 Samples/channel	10 seconds to 12 hours	NEMA 4X, IP67 cap installed
EL-USB-2-LCD	Temperature & humidity, 2-1/2 digit LCD display	-31° to 176°F (-35° to 80°C) 0 to 100% RH	16,000 Samples/channel	10 seconds to 12 hours	LCD status, latest log, no download required
EL-USB-RT	Real-time temperature & humidity	-4° to 158°F (-20° to 70°C) 0 to 100% RH	Continuous log	1 second only	Email, sound and LED alarm, 7 days of data on HD
EL-USB-3	Voltage input	0 to 30 VDC	32,000 Samples	1 second to 12 hours	Alligator clip leads
EL-USB-4	Current input	4 to 20 mA	32,000 Samples	1 second to 12 hours	Alligator clip leads
EL-USB-CO	Carbon monoxide	0 to 1000 ppm	32,000 Samples	10 seconds to 5 minutes	Audible alarm in cap

RELATED PRODUCTS

T 3V6 1/2AA

3.6 Volt lithium battery



VAISALA RH / TEMPERATURE METER HM34

DESCRIPTION

This handheld, pocket-sized **Model HM34 RH/Temperature Meter** provides a fast and convenient way to accurately spot-check relative humidity and temperature.

FEATURES

- *Temperature compensated*
- *Auto-off and hold*
- *Measurement of humidity and temperature*
- *9V battery*
- *0.2µm protective membrane filter*
- *Carrying case*
- *Retractable sensor probe*



HM34



SPECIFICATIONS

Supply Voltage	9 V Battery
Battery Life	50 Hours
Resolution	
Humidity	0.1% RH
Temperature	0.1°F (0.1°C)
Sensor Response Time	15 seconds with membrane filter
Sensor Type	
Humidity	HUMICAP® H-Sensor, thin-film capacitive sensor
Replacement sensor	16663 HM sensor
Temperature	Pt 100 1/3 DIN 43760B
Humidity Accuracy	±2% (0% to 90% RH) ±3% (90% to 100% RH)

Humidity Range	0% to 100% RH
Temperature Accuracy	± 0.5°F (± 1.3°C)
Temperature Dependence	±0.02°C /°C
Temperature Range	-4° to 140°F (-20° to 60°C)
Display	3-1/2 digit LCD
Dimensions	6.3"L x 2.2"W x 1.1"D (16.0 x 5.6 x 2.8 cm)
Approvals	CE, NIST Traceable certificate included
Weight	1 year
Warranty	0.6 lb (0.3 kg)

ORDERING INFORMATION

MODEL	DESCRIPTION
HM34C	RH/Temperature meter with °C reading
HM34F	RH/Temperature meter with °F reading

TELAIRE HANDHELD CO₂ / TEMPERATURE METER 7001



DESCRIPTION

The **Model 7001** uses dual-beam infrared technology for accuracy and stability. Convenient battery operation offers mobility and temperature is displayed in °F or °C.



7001 with AC Adapter



SPECIFICATIONS

Supply Voltage	120V/6V adapter (included) or Four AA alkaline batteries (not included)
Battery Life	Up to 48 hours
Output (via RJ-45 jack)	0-4VDC = 100 Ωmin 0-4000 ppm 0-4VDC = 32° to 104°F (0° to 40°C)
Accuracy	
CO ₂	±50 ppm or 5% of reading
Temperature	±2°F (±1°C)
Calibration	every 12 months
Annual Drift	±20 ppm
Pressure Dependence	0.13% per mm Hg, user input for elevation correction
Response Time	<60 sec CO ₂

Operating Temperature	32° to 122°F (0° to 40°C), 0% to 95% RH
Display	Four-digit 1/2" LCD, CO ₂ , and temperature
Range	
CO ₂	From 0-10,000 ppm
Temperature	°F or °C, 32° to 99°F (0° to 37°C)
Dimensions	6.5"H x 3.0"W x 1.5"D (16.5 x 7.6 x 3.8 cm)
Approvals	CE, FCC Class 15, Part B
Weight	1.4 lb (0.64 kg)
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
7001	Handheld digital CO ₂ /Temperature meter



HUMIDITY

HUMIDITY SELECTION CHART

HUMIDITY SELECTION CHART

PRODUCT	MNFR	ACCURACY	MOUNTING	SIGNAL	MEASUREMENT	ATTRIBUTES	APPLICATION
W43A-14	JCI	4% diff.	Wall	SPDT	RH	Accuracy	Limit control
HC-101	Schneider	5% diff.	Wall	SPDT	RH	Aesthetics	Limit control
HC-201	Schneider	5% diff.	Duct	SPDT	RH	Duct	Limit control
GEH5S	GE	5%	Wall	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
SHR-5P-W	Setra	5%	Wall	4-20/0-10	RH	Replaceable sensor	Monitoring
GEH5D	GE	5%	Duct	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
SRH-5P-D	Setra	5%	Duct	4-20/0-10	RH	Replaceable sensor	Monitoring
GEH5O	GE	5%	OSA	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
SRH-5P-O	Setra	5%	OSA	4-20/0-10	RH	Replaceable sensor	Monitoring
KHR3	Kele	3%	Wall	4-20 mA	RH/T optional	Replaceable sensor	Monitoring
SHR-3P-W	Setra	3%	Wall	4-20 mA	RH	Replaceable sensor	Monitoring
HW30K/HW31K	Kele	3%	Wall	4-20 mA	RH/T optional	Executive housing	Monitoring
HMW40/50	Vaisala	3%	Wall	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
ACI-3-R	ACI	3%	Wall	4-20/0-10	RH/T optional	Delta housing	Monitoring
BA/H300-B	BAPI	3%	Wall	4-20/0-5	RH/T optional	BAPI housing	Monitoring
KHD3	Kele	3%	Duct	4-20 mA	RH/T optional	Replaceable sensor	Monitoring
SHR-3P-D	Setra	3%	Duct	4-20 mA	RH	Replaceable sensor	Monitoring
HD30K/31K	Kele	3%	Duct	4-20 mA	RH/T optional	Metal/universal enclosure	Monitoring
HMD40/50	Vaisala	3%	Duct	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
ACI-3-D	ACI	3%	Duct	4-20/0-10	RH/T optional	4-20 mA and 0-10V	Monitoring
BA/H300-D	BAPI	3%	Duct	4-20/0-5	RH/T optional	4-20 mA and 0-5V	Monitoring
KHO3	Kele	3%	OSA	4-20 mA	RH/T optional	Replaceable sensor	Monitoring
SHR-3P-O	Setra	3%	OSA	4-20 mA	RH	Replaceable sensor	Monitoring
HO30K	Kele	3%	OSA	4-20 mA	RH/T optional	Metal enclosure	Monitoring
HO31K	Kele	3%	OSA	4-20 mA	RH/T optional	Universal enclosure	Monitoring
ACI-3-O	ACI	3%	OSA	4-20/0-10	RH/T optional	4-20 mA and 0-10V	Monitoring
BA/H300-O	BAPI	3%	OSA	4-20/0-5	RH/T optional	4-20 mA and 0-5V	Monitoring
VH7200	Viconics	3%	Wall	0-10 V	RH	Humidistat	Limit control
KHR2	Kele	2%	Wall	4-20 mA	RH/T optional	Replaceable sensor	RH control
HW20K	Kele	2%	Wall	4-20 mA	RH/T optional	Executive housing	RH control
ACI-2-R	ACI	2%	Wall	4-20/0-10	RH/T optional	Delta housing	RH control
GEH2S	GE	2%	Wall	4-20/0-10	RH/T optional	Replaceable sensor	RH control
EHRH	GE	2%	Wall	4-20 mA	RH/T optional	Wash-down housing	RH control, pool
HT2-S	Minco	2%	Wall	4-20 mA	RH/T optional	Minco housing	RH control
HT829-S	Minco	2%	Wall	4-20 mA	RH, RH/T	One-point calibration	RH control
HMW-60U	Vaisala	2%	Wall	4-20 mA	RH/T optional	Vaisala housing	RH control
HMW-70U	Vaisala	2%	Wall	0-5 VDC	RH/T optional	Voltage output	RH control
BA/H200-B	BAPI	2%	Wall	4-20/0-5	RH/T optional	BAPI housing	RH control
KHD2	Kele	2%	Duct	4-20 mA	RH/T optional	Replaceable sensor	RH control
HD20K	Kele	2%	Duct	4-20 mA	RH/T optional	Metal enclosure	RH control
ACI-2-D	ACI	2%	Duct	4-20/0-10	RH/T optional	4-20 mA and 0-10V	RH control
GEH2D	GE	2%	Duct	4-20/0-10	RH/T optional	Replaceable sensor	RH control
HT2D	Minco	2%	Duct	4-20 mA	RH/T optional	Metal enclosure	RH control
HT829-D	Minco	2%	Duct	4-20 mA	RH, RH/T	One-point calibration	RH control
HMD-60U	Vaisala	2%	Duct	4-20 mA	RH/T optional	Metal enclosure	RH control
HMD-70U	Vaisala	2%	Duct	0-5 VDC	RH/T optional	Metal enclosure	RH control
BA/H200-D	BAPI	2%	Duct	4-20/0-5	RH/T optional	4-20 mA and 0-5V	RH control
KHO2	Kele	2%	OSA	4-20 mA	RH/T optional	Replaceable sensor	RH control
HO20K	Kele	2%	OSA	4-20 mA	RH/T optional	Metal enclosure	RH control
ACI-2-O	ACI	2%	OSA	4-20/0-10	RH/T optional	4-20 mA and 0-10V	RH control
GEH2O	GE	2%	OSA	4-20/0-10	RH/T optional	Replaceable sensor	RH control
HT2O	Minco	2%	OSA	4-20 mA	RH/T optional	Metal enclosure	RH control
HT829-O	Minco	2%	OSA	4-20 mA	RH, RH/T	One-point calibration	RH control
BA/H200-O	BAPI	2%	OSA	4-20/0-5	RH/T optional	4-20 mA and 0-5V	RH control
EE29	E&E	1.3%	Wall	4-20/0-5/0-10	RH/T	Metal or plastic housing	Clean room control
ACI/RH1-R	ACI	1%	Wall	4-20 mA	RH/T optional	Executive housing	Clean room control
HT829-S1N1	Minco	1%	Wall	4-20 mA	RH	Minco housing	Clean room control
ACI-RH1-D	ACI	1%	Duct	4-20 mA	RH/T optional	Plastic enclosure	Clean room control
HT829-D1N1	Minco	1%	Duct	4-20 mA	RH	One-point calibration	Clean room control
ACI-RH1-O	ACI	1%	OSA	4-20 mA	RH/T optional	Plastic enclosure	Calculation input
HT829-O1N1	Minco	1%	OSA	4-20 mA	RH	One-point calibration	Calculation input
9002	Telair	1.8F	Wall/Duct	4-20 mA	DP/T	IR measurement	Condensation control

RH Relative Humidity is the ratio of actual water vapor in the air vs. the water vapor that the air can hold at saturation.

DB Dry bulb temperature is the temperature of the air using a dry sensor without any effect from evaporative cooling.

WB Wet bulb temperature is the temperature of the air using a wet sensor, which measures the cooling effect from evaporation.

DP Dew point temperature is the temperature at which water vapor begins to condense into water liquid, which is at 100% RH.

EN Enthalpy is the measure of the heat energy in the air.