Series HT-9000
Electronic Humidity Transmitter

Introduction

The Johnson Controls humidity transmitter is based on a new "state of the art" humidity sensing element. It measures humidity over the entire range of 0 to 100% RH (non condensing) and has a wide operating temperature range. Its fast response, reliable long-term performance makes this transmitter well suited for refrigeration and HVAC installations.

This range also includes models with an integrated temperature sensing element.

It is recommended to use the humidity transmitter with Johnson Controls controllers such as the TC/SC/DC/DX-9100 series and System 27 Nova / MS series or with other systems having compatible input and output voltages.

HT-9000 Electronic Humidity Transmitter

Description

The basic principle of this new humidity transmitter is a polymer capacitance type element in which capacitance changes proportionally to a change in humidity. This well proven technology is now combined with the signal processing electronics onto a single chip.

The sensing element incorporates a protective coating which resists the effects of surface contamination.

Feature and Benefits	
❑ **Room Models suitable for universal voltage supply**	Increase compatibility to a larger range of controllers within HVAC/R industry
❑ **Senses over the entire range of 0 to 100%RH (non condensing)**	Increases compatibility within a wider range of applications
❑ **Transmitter can resist many hostile environments**	Suitable for a wide range of applications.
❑ **Temperature measurement option**	Eliminates the need for a separate temperature transmitter
❑ **Polymer humidity sensing element is integrated onto a chip**	Provides stability, repeatability and linear response
❑ **Duct and room enclosures are available**	Enhances compatibility with a wide range of equipment

Ordering data

HT- 9 □□-□□□

Duct mounting

1D1 = Rod length 153 mm

Room

URW = Room White (RAL 9010)

Temperature Output

00 = No temperature Output
01 = 0 to 10 VDC (range 0 to 40° C)
02 = 0 to 10 VDC (range 0 to 60° C), only for room enclosure models
03 = NTC K2 (2252 Ω)
05 = Pt 100
06 = Pt 1000
09 = A99

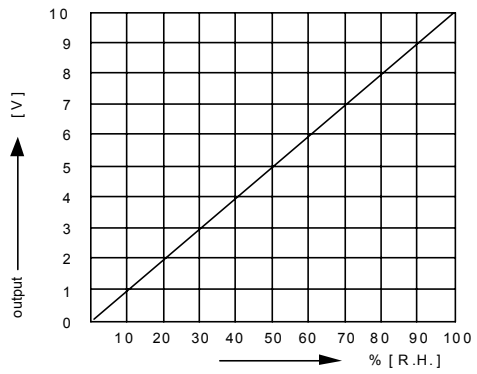
Humidity Output

0 = 0 to 10 VDC

Note

All HT Series humidity transmitters are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices or systems that protect against, or warn of control failure.
To avoid damage to the HT-9000 humidity transmitter, do not mount the unit in a location where high concentrations of corrosive vapours are present.

Humidity output curve



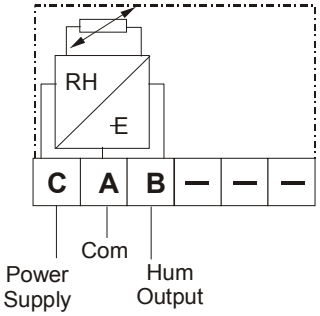
Humidity output voltage curve

Temp. versus resistance table

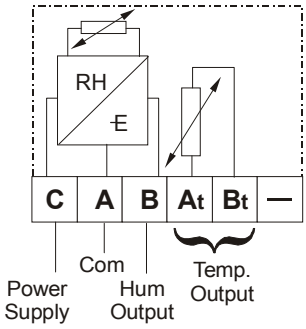
Temp. (°C)	Resistance (Ω)			
	A99	Pt100	Pt1000	NTC K2
0	854	100.0	1000	7352.8
5	888	102.0	1020	5717.8
10	924	103.9	1039	4481.5
15	960	105.8	1058	3537.9
20	997	107.8	1078	2812.8
25	1035	109.7	1097	2252.0
30	1074	111.7	1117	1814.4
35	1113	113.6	1136	1470.6
40	1154	115.5	1155	1199.6
45	1195	117.5	1175	-
50	1238	119.4	1194	-
55	1281	121.3	1213	-
60	1325	123.2	1232	-

Wiring

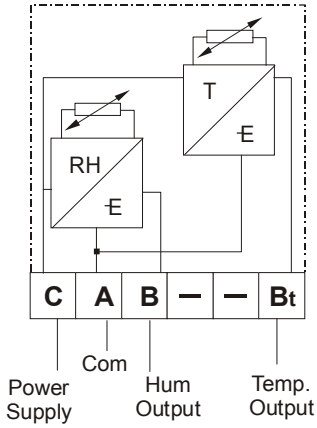
HT-90xx-URW
(Room sensors)



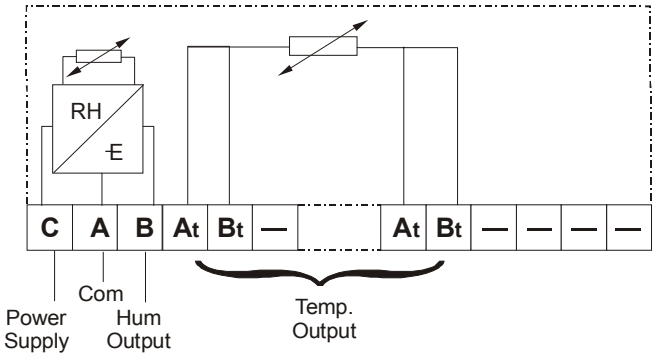
No temperature Output



NTC K2, A99, Pt 1000
temperature passive output

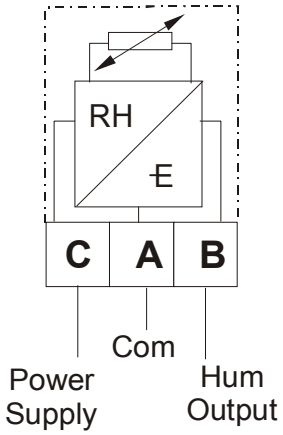


0…10 VDC temperature Output

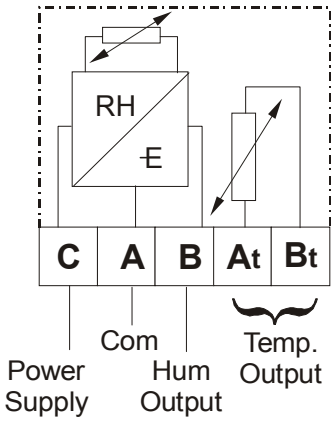


Pt100 temperature passive Output

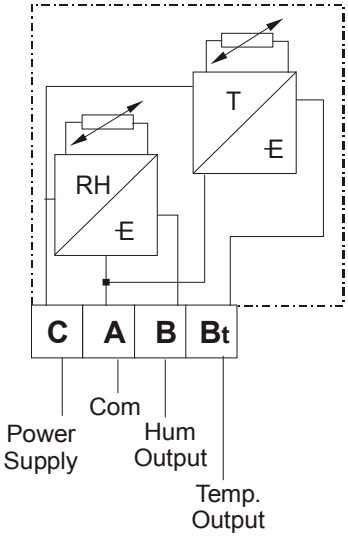
HT-90xx-1D1
(Models for duct mounting)



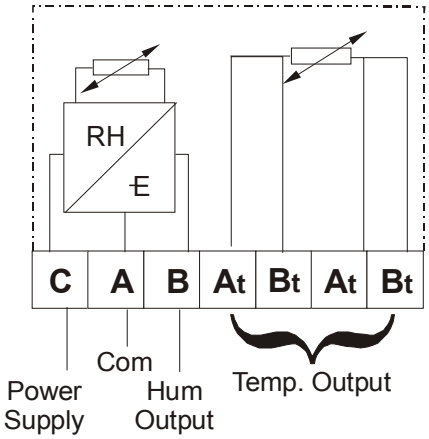
No temperature Output



NTC K2, A99, Pt 1000 temperature passive output

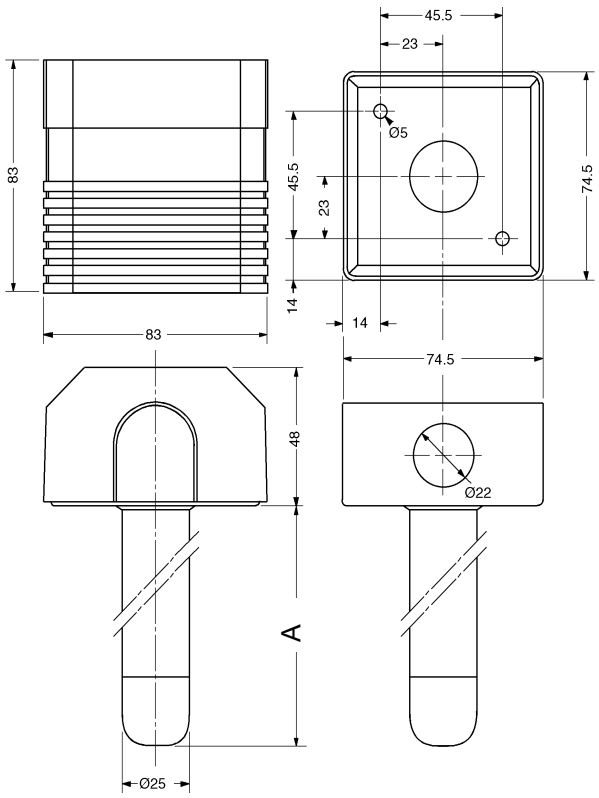


0…10 VDC temperature Output

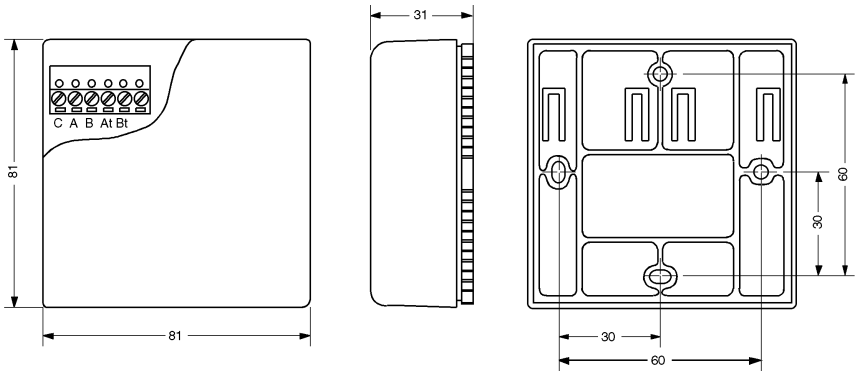


Pt100 temperature passive Output

*D*imensions (in mm)



HT-90xx-1D1 A = 153



HT-90xx-URW

Specifications

	HT-90xx-URW		HT-90xx-1D1
Humidity range:	0 to 100% RH		
Humidity output signal:	0 to 10 VDC linear		
Supply voltage:	12 to 30 VDC 24 VAC ±15%		12 to 17 VDC
Accuracy: **Humidity Transmitter:**	± 4% R.H. from 10 to 90% R.H. ± 6% R.H. from 0 to 10 % R.H. and 90 to 100% R.H.		
Accuracy: **Temperature Sensor:**	A99 type NTC K2 Pt 100/Pt 1000 0 to 10 VDC	± 0.5 K (between 0 and 60°C) ± 0.2 K (between 0 and 40°C) As specified in IEC751 Class A ± 0.7 K (between 0 and 40°C)	
Power consumption at 24 VAC nominal (no load):	Only RH transmitter With temp. Transmitter	0.3 W 0.5 W	
Output load:	≥ 5 kΩ		
Humidity response time:	Room enclosure Duct enclosure	40 sec. in still air 20 sec. in 3 m/s moving air	
Ambient operating : conditions:	0…60°C non condensing in any part of the sensor HT-90xx-1D1: minimum air flow 3 m/s		
Protection:	Room enclosure Duct enclosure	IP30 (EN60529) IP30 (EN60529)	
Materials:	Room enclosure Duct enclosure	self extinguishing ABS + PC polycarbonate LEXAN 950 and anodised aluminium 6061-F	
Weight:	Room enclosure Duct enclosure	0.12 kg 0.20 kg	
Terminal blocks:	Room models Duct models	plug in connectors accepting 1.5 mm^2 wires fixed connectors accepting 2.5 mm^2 wires	
CE **Compliance:**	EMC (89/336 EEC) according to the standard EN 50081-1 and EN 50082-1		

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office or representative. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.

Johnson Controls International, Inc.
Headquarters: Milwaukee, WI, USA
European Headquarters: Westendhof 8, 45143 Essen, Germany
European Factories: Lomagna (Italy), Leeuwarden (The Netherlands) and Essen (Germany)
Branch Offices: Principal European Cities.
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