

H-4100 Pneumatic Room Humidistat

The H-4100 Room Humidistat is designed to provide a proportional output signal to modulate pneumatic controlled devices in response to a change in relative humidity.

All models feature a CAB (cellulose acetate butyrate) sensing element and have a shock and vibration resistant mechanism which allows accurate output pressure changes corresponding to the sensed humidity conditions. A volume amplifier is incorporated to provide fast response time and an output flow capacity of 400 SCIM (109 mL/s).

Installation

Humidistat installation procedures are similar to thermostat installation procedures; refer to *T-4000 Technical Bulletin* for details.

The H-4100 can be mounted horizontally or vertically; air connections are made to barbed fittings for 5/32 in. O.D. polytubing. Various accessories are available to facilitate mounting the room humidistat on virtually any wall surface. The H-4100 can be concealed mounted using an aspirator wallbox and flush wallplate. Other accessories can be used for ceiling suspended mounting. Several kits are also available for converting existing humidistat installations. Refer to Table 1 for a complete list of mounting accessories available.

Set Point Adjustment

The method of set point adjustment depends on the type of instrument mounting and cover provision. For concealed mounted humidistats,



H-4100 Surface Mounted Humidistat with Concealed Adjustment



H-4100 Concealed Mounted Humidistat

Specifications

Product		H-4100 Pneumatic Room Humidistat
Operation	H-4100-201	Proportional - Direct Acting
	H-4100-203	Proportional - Reverse Acting
Sensing Element		CAB (Cellulose Acetate Butyrate)
Supply Pressure		13 to 25 psig (91 to 175 kPa)
		Nominal 20 psig (140 kPa) Air supply must be clean, dry and oil free.
Control Span		30% Marked Wet-Medium-Dry
Operating Range		10 to 95% RH
Sensitivity		Factory set at 2.5 PSI (17.5 kPa)/1% RH:
		Adjustable from .75 to 4 PSI ((5.3 to 28 kPa)/1% RH
Set Point		Factory Set at Medium=45% RH; Adjustable
Air Consumption		20 SCIM (5.5 mL/s)
Output Flow Capacity		400 SCIM (109 mL/s)
Ambient	Temperature	40 to 150°F (4 to 66°C)
Operating Limits	Humidity	0 to 100% RH *
Mounting	Surface	Horizontal or Vertical (Horizontal Dial Only)
	Concealed	With Aspirator Wall Box and Flush Wallplate
Accessories (Order Separately)		See Table 1.
Shipping Weight		0.4 lb. (.18 kg)

*The H-4100 may be ordered with corrosion resistant finish for high humidity atmospheres.

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

the wallplate must be removed to make set point adjustments. For surface mounted or ceiling suspended humidistat installations, concealed or exposed set point adjustment is available. The set point dial features a hex head drive designed to accept a T-4002-5012 adjusting knob (ordered separately). A T-4002-5003 restricted adjustment kit is also available (ordered separately) to limit the range of set point dial adjustment.

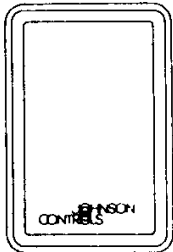
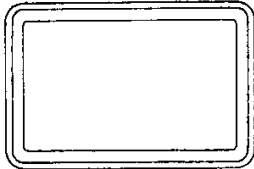
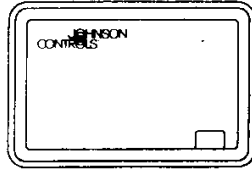
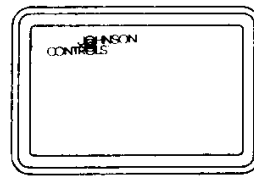
Repair Information

For a complete list of repair parts, refer to *T-4000-A.8 Repair Parts Bulletin*

Table 1: Accessories (Order Separately)

Humidistat, Mounting or Air Connection Accessory Description	Shipping Weight lb*	Code Number	Function
Room Instrument Mounting Bracket	0.3	T-4002-124	For surface mounting all humidistats and covers
Plaster Groundplate	0.2	T-4002-6038	For rough-in of surface mounted humidistats in masonry
Metal Wallbox	0.3	T-4002-6029	
Cover for Groundplate or Metal Wallbox	0.2	T-4002-5010	To keep dirt out of ground-plate and wallbox during construction
Restricted Adjustment Pin (Order in Multiples of 100)	0.2	T-4002-5003	To restrict adjustment of set point dial
Plastic Screw Anchors (Order in Multiples of 100)	0.5	F-1000-321	For mounting brackets and wallbox
Wire Guard For Exposed Tubing	0.3	T-4002-3000	
Wire Guard For Concealed Tubing	0.3	T-4002-3001	
Optional Wire Guard Mounting Plate	0.2	T-4002-6045	For surface mounted humidistat protection after construction
Cast Aluminum Guard and Mounting Bracket	0.3	T-4002-3004	
Plastic Guard	0.4	GRD10A-608	
Plastic Surface Mounting Back	0.5	T-4002-125	For surface mounted humidistats with exposed tubing
Terminal Connector with 2 Angle Fittings	0.1	T-4002-123	
Aspirator Wallbox Kit	0.5	T-4000-110	
Wallplate Cover Kit Beige Finish	0.4	T-4000-111	For concealed mounted humidistats without pushbuttons
Wallplate Cover Kit Stainless Steel Finish	0.4	T-4000-112	
2-Tube Sheathed Polyethylene Strain Relief Bushing	0.1	T-4000-101	For rough-in box or metal wallbox to instrument air system tubing adaptation (1/2 in. knockout)
1/2 in. Conduit (EMT) Connector	0.1	T-4000-103	
Wallbox Mounting Kit	0.2	TE-1800-9600	To adapt 4000 series brackets and covers to standard conduit wallboxes
Terminal Connector with 2 Straight Fittings	0.1	T-4002-122	
Terminal Connector Protector Cap (For Rough-in Only)	0.1	T-4000-100	For optional plug-in connection to 5/32 in. O.D. polyethylene tubing
Two 5/32 x 5/32 in. Elbow Fittings	0.1	F-500-45	
Ceiling Suspended Mounting Kit	0.5	T-4002-100	To provide a method of installing a humidistat other than wall mounting
Adjusting Knob Kit	0.5	T-4002-5012	To provide a means of external set point adjustment
Hypodermic Needle Test Probe	0.2	X-200-140	
Screw-in Gage	0.3	X-200-19	Calibration

*lb x 0.454 = kg

Beige Plastic Cover Selection Guide**T-4000-2144****T-4000-2138****T-4000-2141****T-4000-2139**



T-4002-124



F-1000-321



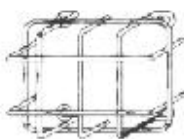
T-4002-6038



T-4002-6029



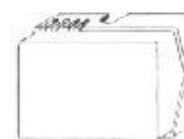
T-4002-5010



T-4002-3000
or
T-4002-3001



T-4002-6045



T-4002-3004



T-4002-125



T-4002-123



T-4000-101



T-4000-103



T-4002-122



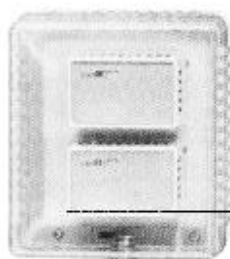
T-4002-5012



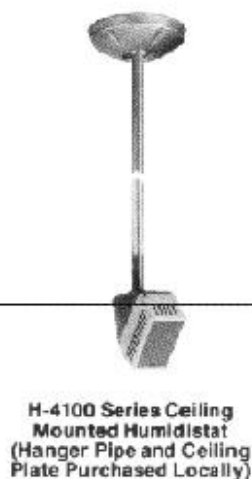
T-4000-100



T-4002-5003



GRD10A-608



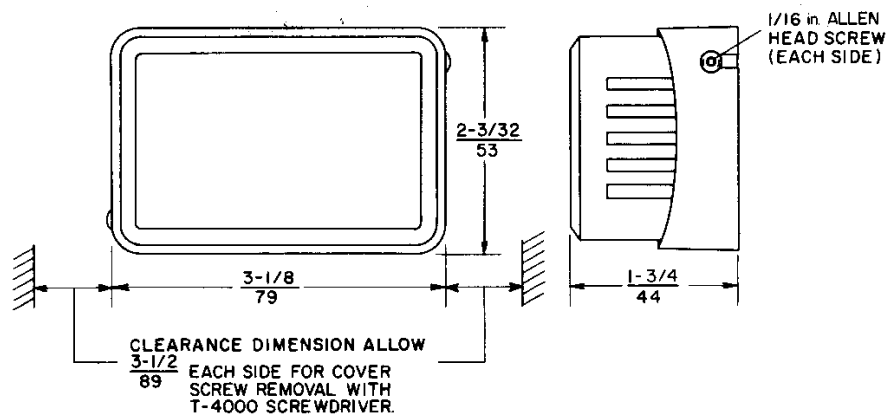
H-4100 Series Ceiling
Mounted Humidistat
(Hanger Pipe and Ceiling
Plate Purchased Locally)



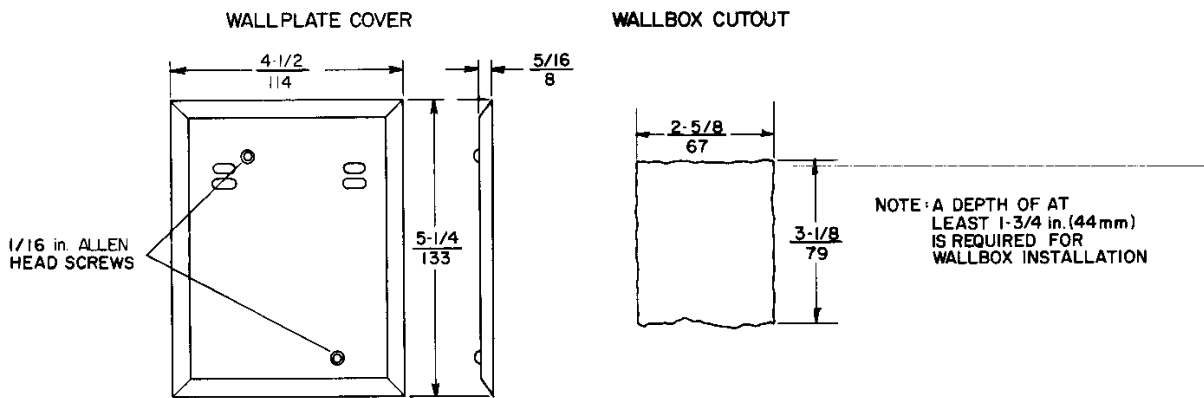
T-4002-100

**Table 2: Additional
Connection Accessories**

5/32 x 5/32 in. Coupler	F-300-31
5/32 x 1/4 in. Coupler	F-300-30
5/32 x 3/16 in. I.D. Coupler	F-100-20
5/32 x 5/32 x 5/32 in. Tee:	
Brass	F-700-83
Plastic	F-700-86
1/4 x 1/4 x 5/32 in. Tee	F-700-84
3/8 x 3/8 x 5/32 in. Tee	F-700-85
Anti-kink Spring	F-1000-322

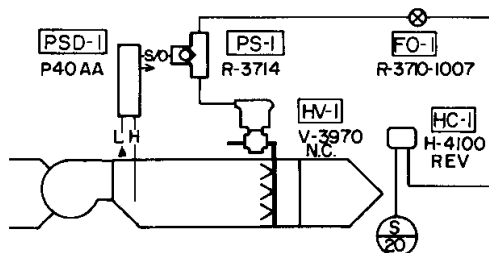
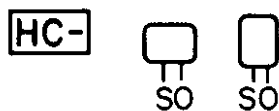


Surface Mounted Cover Dimensions $\frac{\text{in.}}{\text{mm}}$



Concealed Mounted Wallplate & Cutout Dimensions $\frac{\text{in.}}{\text{mm}}$

Application and Drawing Identification



Typical Application Using H-4100

**JOHNSON
CONTROLS**

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P.O. Box 423
Milwaukee, WI 53201

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