

TRUERH™ Series HH-6705 Duct Humidistat

Installation

IMPORTANT: The HH-6705 Series Duct Humidistat is designed for use only as an operating control. Where failure or malfunction of the HH-6705 could lead to an abnormal operating condition that could cause personal injury or damage to the equipment or other property, other devices (limit or safety controls) or systems (alarm or supervisory) intended to warn of, or protect against, failure or malfunction of the HH-6705 must be incorporated into and maintained as part of the control system.

Parts Included

- HH-6705-9N0GP duct humidistat
- No. 6-32 x 1/4 in. binder-head cover screw
- 3 in. (76 mm) outside diameter steel washer

Tools Required

- hole saw with 1-3/4 in. (45 mm) diameter blade
- drill with 3/32 in. (mm) drill bit
- 1/4 in. (7 mm) and 1/8 in. (3 mm) flat-blade screwdrivers
- gasket, sealer, or other material to seal the area between the unit and the duct

Location Requirements

IMPORTANT: To avoid damage to the circuit board and components, do not mount the unit in a location where high concentrations of corrosive vapors are present.

Place the humidistat in a location that complies with the following:

- **Position:** The humidistat is designed for duct mounting in any position, except with the probe tip pointed up.
- **Duct Diameter:** Recommended minimum diameter (round ducts) or width (square ducts) is 12 in. (305 mm).
- **Air Stratification** (when the unit is mounted on the discharge side of the fan): Recommended location is at least 8 ft (2.4 m) downstream from the humidification equipment, where duct air and water vapor are sufficiently mixed. Avoid areas where the probe may be exposed to condensation.

Setpoint

The setpoint is adjustable from 30 to 90% Relative Humidity (RH). Use a 1/8 in. (3 mm) flat-blade screwdriver to adjust the setpoint potentiometer located under the cover. (See Figure 1.)

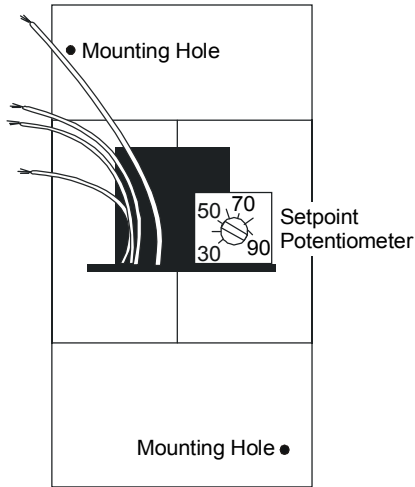


Figure 1: Adjusting the Setpoint

Mounting

Mount the humidistat as follows:

1. Remove any excess insulation from the duct that prevents the probe from extending a minimum of 3 in. (76 mm) into the airstream.
2. Use the hole saw to make a 1-3/4 in. (44.5 mm) hole in the duct for inserting the probe.

Note: If the duct hole is larger, use the 3 in. (76 mm) washer provided when installing the humidistat. (See Figure 2.)

3. Loosen the cover screw, and lift the cover off the unit. (See Figure 2.)

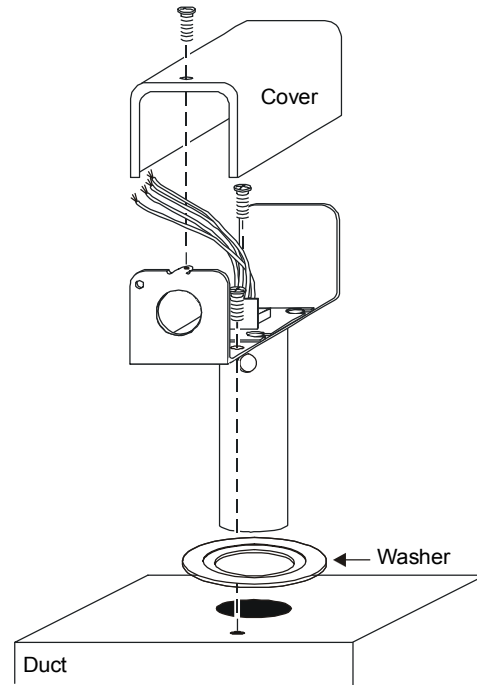


Figure 2: Mounting the Humidistat

4. Insert the probe into the duct, and mark the holes for the two mounting screws.
5. Remove the unit, and drill a 3/32 in. (2.4 mm) hole for each mounting screw.
6. Use a gasket, sealer, or other means to seal the area around the hole between the unit and duct.

IMPORTANT: Seal any holes created during installation to help reduce drafts and for more accurate humidity readings. Use the washer provided, in addition to one of the materials in Step 6 if the duct hole is larger than 1-3/4 in. (44.5 mm).

7. Reinsert the probe, and secure the housing to the duct using two No. 6 sheet metal screws (not provided).

Wiring



WARNING: Electrical Shock Hazard.
Disconnect the power supply before wiring connections are made to prevent possible electrical shock or damage to the equipment.

Observe the following when wiring the humidistat:

- Do not run low voltage wiring in the same conduit as line voltage wiring or other conductors that supply highly inductive loads.
- Use 18 or 24 AWG wire.
- Make all wiring connections in accordance with the National Electrical Code and all local regulations.

The power requirements of the HH-670 Series are 20 to 30 VDC at 33 mA or 20 to 30 VAC, 50/60 Hz at 45 mA (1.35 VA maximum). Make wiring connections using four color-coded, 6 in. (152 mm) 18 to 24 AWG lead wires. Designations are indicated in Table 1.

Table 1: Wire Designations

Wire Color	Designation
Red	Input Power
Black	Common
Yellow	Relay Contact
Yellow	Relay Contact

Troubleshooting

If the humidistat is not functioning properly:

1. Check all supply voltage connections and output wiring to make sure the wiring is correct.
2. Move the setpoint up and down to ensure the humidistat is responding. (The relay should switch on and off when the setpoint is adjusted above and below the humidity level being sensed.)

Note: The humidity in the duct must be within the 30 to 90% RH setpoint range before the HH-6700 responds.

3. If the troubleshooting suggestions fail to remedy the problem, replace the unit.

Additional Information

There are no accessories for the HH-6705-9N0GP humidistat. See Table 2 for product specifications.

Table 2: Specifications

Product	TRUERH™ Series HH-6705 Duct Humidistat
Power Requirements	20 to 30 VDC at 33 mA or 20 to 30 VAC, 50/60 Hz at 45 mA (1.35 VA maximum), Class 2
Output	Single-Pole, Single-Throw (SPST), normally open relay contact: Opens at setpoint on increasing RH Closes at 5% RH below setpoint on decreasing RH
Relay Contact Rating	Maximum: 4 ampere at 24 VAC; pilot duty 42.4 VA at 24 VAC, Class 2 Minimum: 100 mA at 5 VDC
Humidity	Element: All-Polymer Setpoint: Adjustable from 30 to 90% RH Sensing Range: 0 to 100% RH, non-condensing Differential: Fixed 5% RH
Ambient Operating Conditions	32 to 122°F (0 to 50°C) 0 to 100% RH, non-condensing; 86°F (30°C) maximum dew point
Survival Operating Conditions	-22 to 140°F (-30 to 60°C) 0 to 100% RH, non-condensing; 86°F (30°C) maximum dew point
Ambient Storage Conditions	-40 to 176°F (-40 to 80°C) 0 to 100% RH, non-condensing; 86°F (30°C) maximum dew point
Materials	Metal cover and housing with polymeric duct probe
Dimensions	Overall (H x W x D): 4.44 x 2.19 x 7.87 in. (113 x 56 x 200 mm) Probe (D x L): 1.62 x 6.12 in. (41 x 155 mm)
Shipping Weight	1.5 lb (0.7 kg)

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



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