

H-5210 Pneumatic Duct Humidity Transmitter

Features

- Ball Type Control Port for Increased Accuracy
- New Lever with Reinforced Edges for Increased Linearity
- Highly Sensitive CAB Element
- Integral Hypodermic Needle Test Point

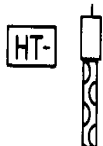
The H-5210 Humidity Transmitter is a pneumatic device used to sense duct humidity and transmit an air pressure signal to a pneumatic receiver-controller or indicator. Pneumatic feedback is incorporated in the transmitter design to provide an accurate proportional relationship between the measured humidity and the transmitted signal.

The H-5210 is a low volume output device installed with a .007 in. external restrictor for proper operation. It is furnished with an integral sheet steel plate for mounting directly onto a duct.

Operation

The H-5210 provides a 3 to 15 PSIG (21 to 105 kPa) output signal that is directly proportional to the sensed relative humidity. In a typical application, the output of the transmitter is connected to an indicator and/or receiver-controller.

Application and Drawing Identification



Mounting

To mount the H-5210 on a duct, cut a 2-3/8 to 2-1/2 in (60 to 64 mm) diameter hole in the duct. Insert the element through the hole and position the transmitter so that the element guard and mounting plate screw concealed under the gasket (see Fig. 3) do not contact the duct.

Using the mounting plate as a template, mark the six holes on the duct. Drill the holes for #8 sheet metal screws furnished and mount the instrument, making sure the gasket is properly aligned.

Repair Information

Field repairs must not be made. For a replacement H-5210, contact the nearest Johnson Controls branch office. Replacement covers are available; refer to Table 1 for ordering information.

Specifications

Product	H-5210-1001 Duct Humidity Transmitter
Action	Proportional, Direct Acting
Element	CAB (Cellulose Acetate Butyrate)
Element Guard Length	8-1/2 in. (216 mm)
Transmitter Sensing Range	0 to 100% RH
Output Pressure Range	3 to 15 PSIG (21 to 105 kPa)
Supply Pressure	20 PSIG (140 kPa) Nominal; 25 PSIG (175 kPa) Maximum Air Supply Must Be Clean, Dry, and Oil Free
Air Consumption and Output Flow Capacity	45 SCIM (12 mL/s) with .007 in. Restrictor
Ambient Temp Limits	-20 to 175°F (-29 to 79°C), Dry Bulb
Maximum Duct Air Velocity	2000 FPM (10 m/s)
Air Connection	1/8 in. NPT Barbed Fitting for 5/32 or 1/4 in. O.D. Polytubing
Mounting	With Sheet Metal Plate Furnished
Accessory (Order Separately)	R-3710 Series .007 in. Restrictor
Shipping Weight	1.2 lb (.54 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.



**Fig. 1: H-5210
Duct Humidity Transmitter**

Maintenance

If the CAB element becomes dirty due to contaminants in the air stream, it should be cleaned with a mild soap solution and a cotton swab. Care must be exercised at all times to avoid damaging the element.

Calibration (See Fig. 2)

The H-5210 is factory calibrated with a fixed span. The transmitter can be checked and fine tuned as follows:

1. Using a direct conversion hygrometer or digital wet/dry bulb thermometer, accurately measure the relative humidity at the element.
2. From the graph in Fig. 2, find the proper transmission pressure corresponding to the measured relative humidity.
3. Turn the adjusting screw (see Fig. 3) to the proper output pressure from Step 2. **Note:** Be careful not to move the slider while turning the adjusting screw.

Note: To achieve the highest degree of accuracy for a given application, calibrate the H-5210 when the ambient humidity is within the desired operating range.

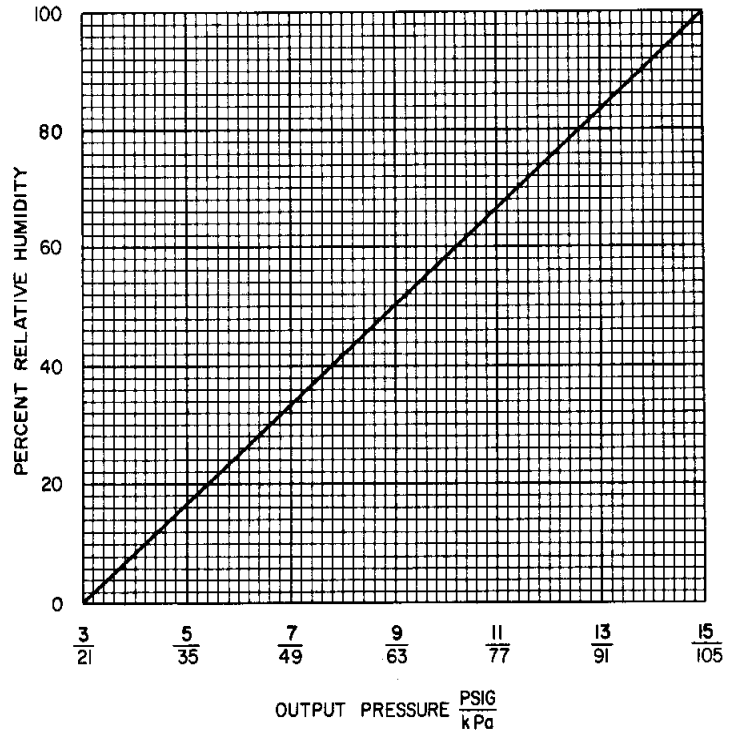


Fig. 2: Relative Humidity vs Output Pressure

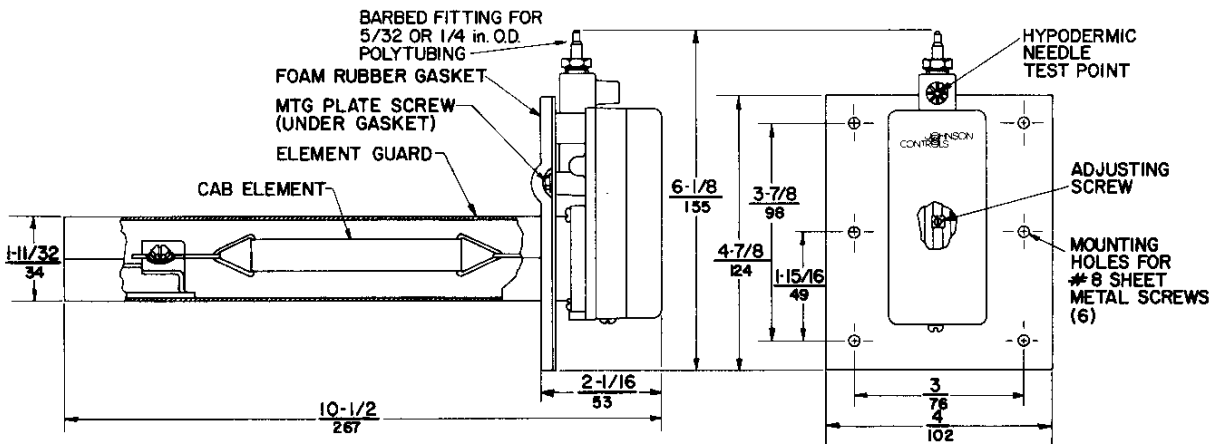


Fig. 3: Dimensions $\frac{\text{in.}}{\text{mm}}$

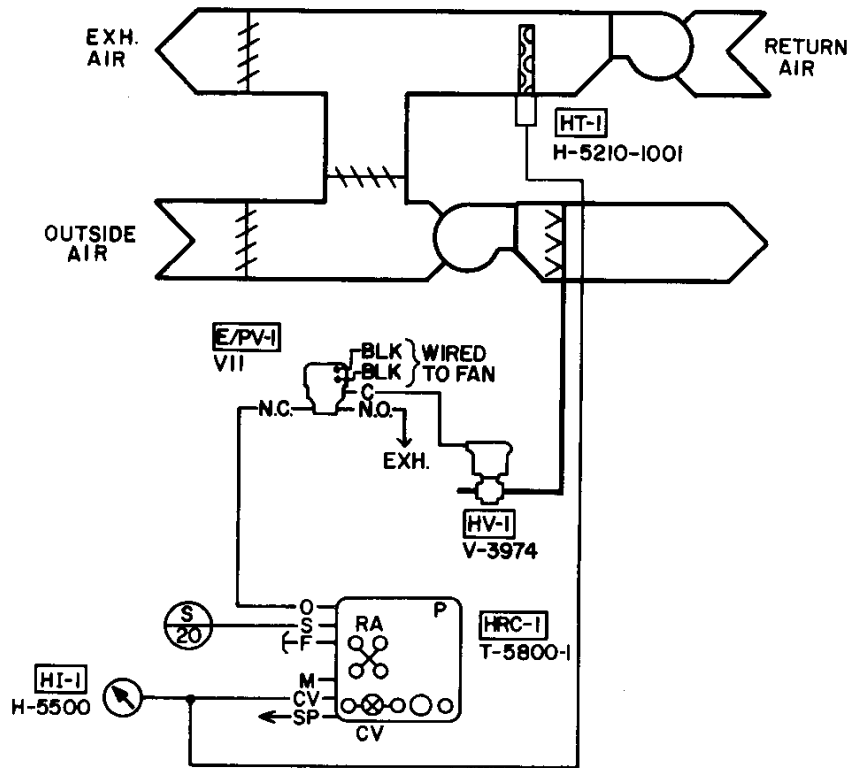


Fig. 4: Typical Application Using H-5210 to Transmit Return Air Duct Humidity

Table 1: Repair Parts

Description	Shipping Weight lb*	Code No.
Cover Kit: Includes Blank Cover and One Pan-Head		
Cover Mounting Screw	1.0	T-5210-602

*lb x 0.454 = kg

Notes

JOHNSON
CONTROLS

Controls Group
507 E. Michigan Street
P.O. Box 423
Milwaukee, WI 53202

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