

Room Humidity Transmitter General Instructions

APPLICATION

The H53-301 Humidity Transmitter measures room humidity and transmits a proportional pneumatic signal to a calibrated receiver gauge and/or receiver controller. The device is factory set to transmit a 3 to 15 psig signal over a 30 to 80% RH range.

This is a one pipe force-balance transmitter which utilizes an external restrictor in the supply line. The H53-301 incorporates a highly sensitive hygroscopic Nylon tape element and a ball valve for pneumatic feedback which insures accuracy and stability over the entire operating range.

SPECIFICATIONS

Action: Direct Acting - Proportional.

Humidity Range: 30 to 80% RH, non-adjustable.

Construction:

Components, Die cast aluminum, stainless steel and nylon.

Diaphragms, Fabric-reinforced neoprene.

Air Filter, Internal.

Maximum Operating Temperature: 140 °F (60 °C).

Supply Air Pressure: Clean dry, oil free air required (ref. EN-123).

Nominal, 20 psig (138 kPa).

Maximum, 30 psig (207 kPa).

Connections: Fittings for spring-reinforced 3/16" plastic tubing.

Calibration Point: See Figure 8.

Cover, Blank, provided with transmitter.

Scale, None.

Finish, Satin chrome painted aluminum.

Mounting: Upright position on wall.

Dimensions: See Figure 1.



ACCESSORIES

6-371	Mounting ring (use with mounting heads)
10-26	Mounting head, 1 tube copper
10-53	Metal thermostat guard
10-57	Mortar joint fitting, 2 tube copper
10-58	Mounting ring (use with N5-52)
10-59	Internal stop kit
10-62	Clear plastic cover thermostat guard
10-63	Insulating backplate, for plastic guards
10-64	Tubing assembly with eyelets and fittings
10-66	Mortar joint fitting, 2 "FR" tubes
10-67	Mounting ring, vinyl adhesive
10-72	Concealed adjustment cover, for metal covers
10-73	Drywall mounting fitting (snap-in)
10-76	Opaque plastic guard
10-77	Adaptor plate
10-78	Insulating backplate
10-81	Concealed adjustment cover, for plastic cover
MCS-GA	Gauge tap adaptor
N2-4	Calibration tool
N5-49	Adaptor (for use with N5-53)
N5-52	Bracket, drywall mount
N5-53	Bracket, stud mount rough-in
N5-95	Wall thermostat, conversion kit
N100-0010	0.017 scfm restrictor tee, plastic
N100-2501	In-line 0.017 scfm restrictor, plastic

PRE-INSTALLATION

Inspection

Visually inspect the carton for damage. If damaged, notify the appropriate center immediately. Visually inspect the device for obvious damage due to shipping. Return damaged parts.

Required Installation Items

- Piping diagrams
- Tools (not provided), appropriate screwdriver(s) for mounting screws
- Mounting screws, two (2) #5-40, provided
- Appropriate accessories

INSTALLATION

Caution:

1. Installer must be a qualified, experienced technician.
2. Make all connections in accordance with the piping diagram.
3. Do not locate the device in areas subjected to excessive vibration or corrosive atmospheres.
4. Transmitter should be mounted where it will be affected only by the average room humidity. Free circulation of air must exist at the selected location. Avoid locations that are affected by drafts or by radiant heat from the sun, water pipes, air ducts, etc.
5. Installation on outside walls should be avoided. If such a location is necessary, the transmitter should be mounted on an insulated backplate (accessory item).
6. Transmitter should be mounted **AFTER WALL SURFACES HAVE BEEN FINISHED**. Allow the device time to reach ambient conditions before calibrating.
7. Do not exceed ratings of the device.
8. Receiver gauge must be 3 to 15 psig range and graduated 30 to 80% RH to match transmitter output.
9. Nylon hygroscopic element must be kept clean. Do not touch with fingers or other foreign objects. Remove dust from element with clean, dry camel's-hair or sable artist's brush or equivalent.

Clean, Dry Oil Free Air Supplies for Pneumatic Systems

Caution: A refrigerated air dryer, particulate filter, and a coalescing filter will provide clean, dry, oil free air required (reference EN-123).

Compressor oil must be non-paraffin mineral base or naphtha base. Synthetic or paraffin base oils will destroy pneumatic controls and void the warranty.

MOUNTING INSTRUCTIONS

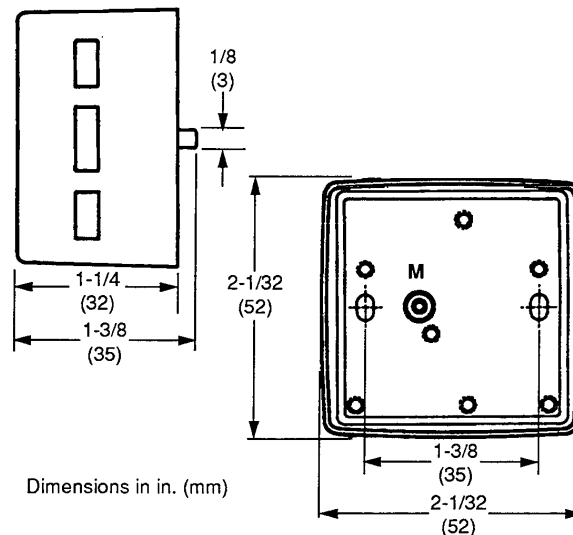


Figure-1 Mounting Dimensions.

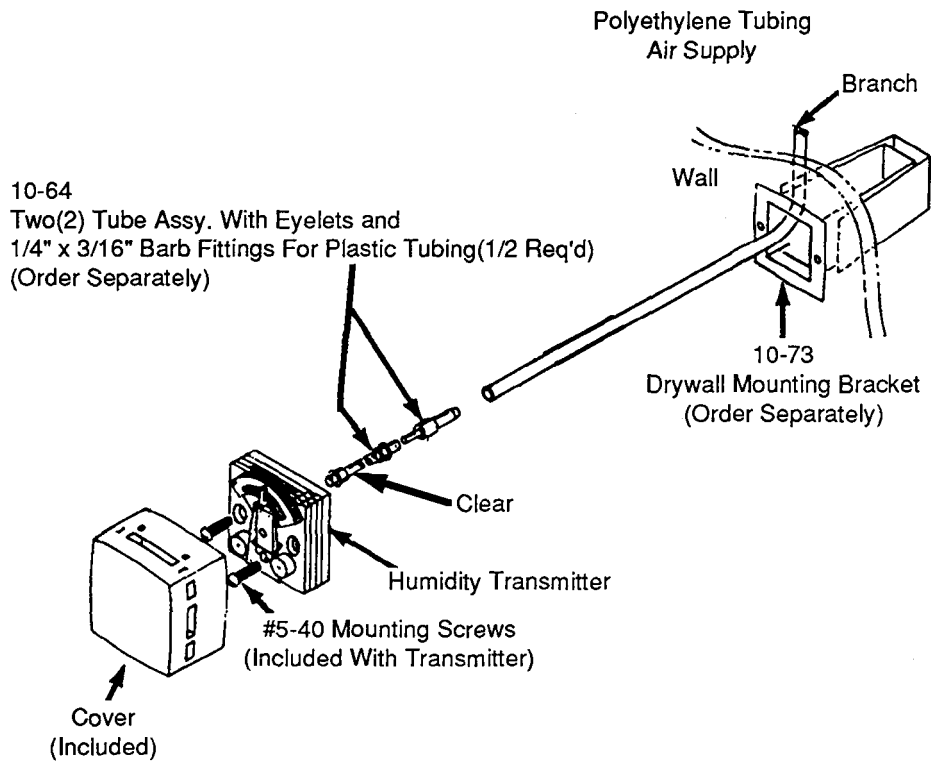


Figure-2 Typical Snap-In Drywall Mounting.

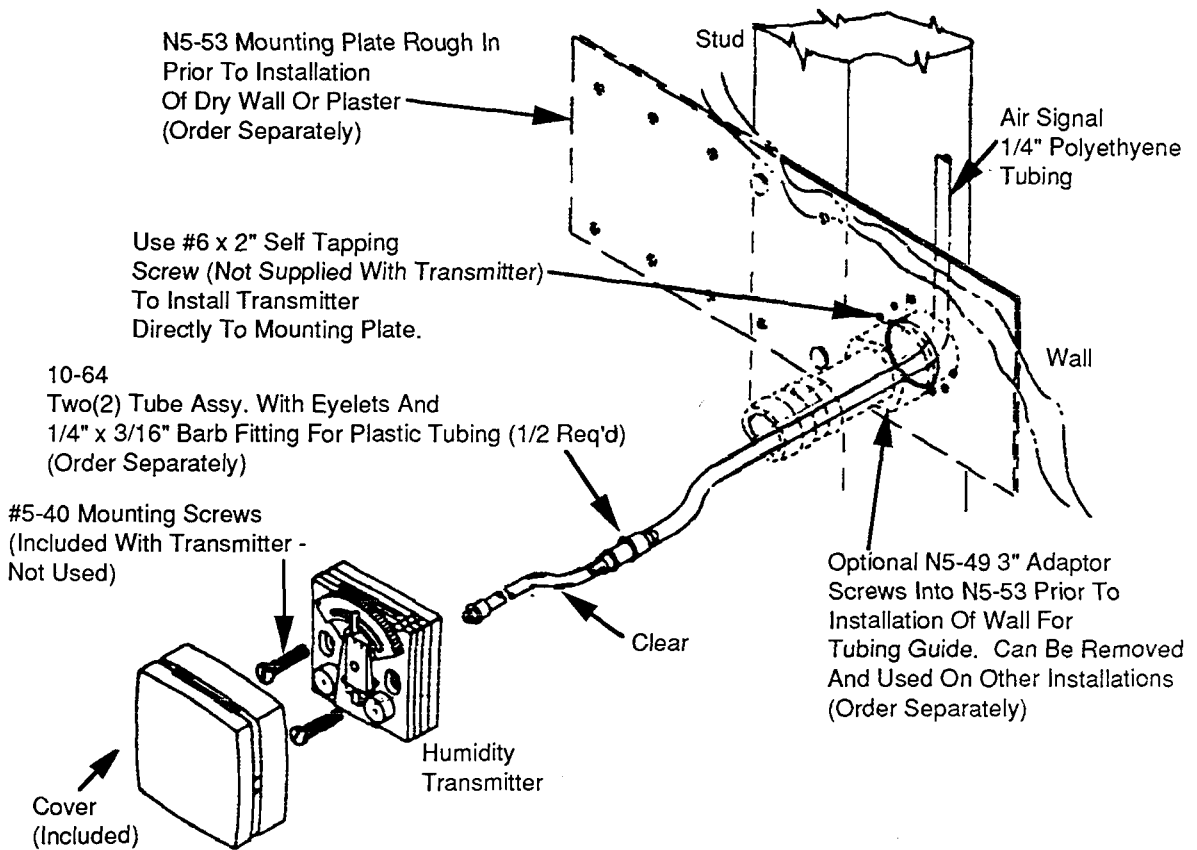


Figure-3 Typical Stud Mounting.

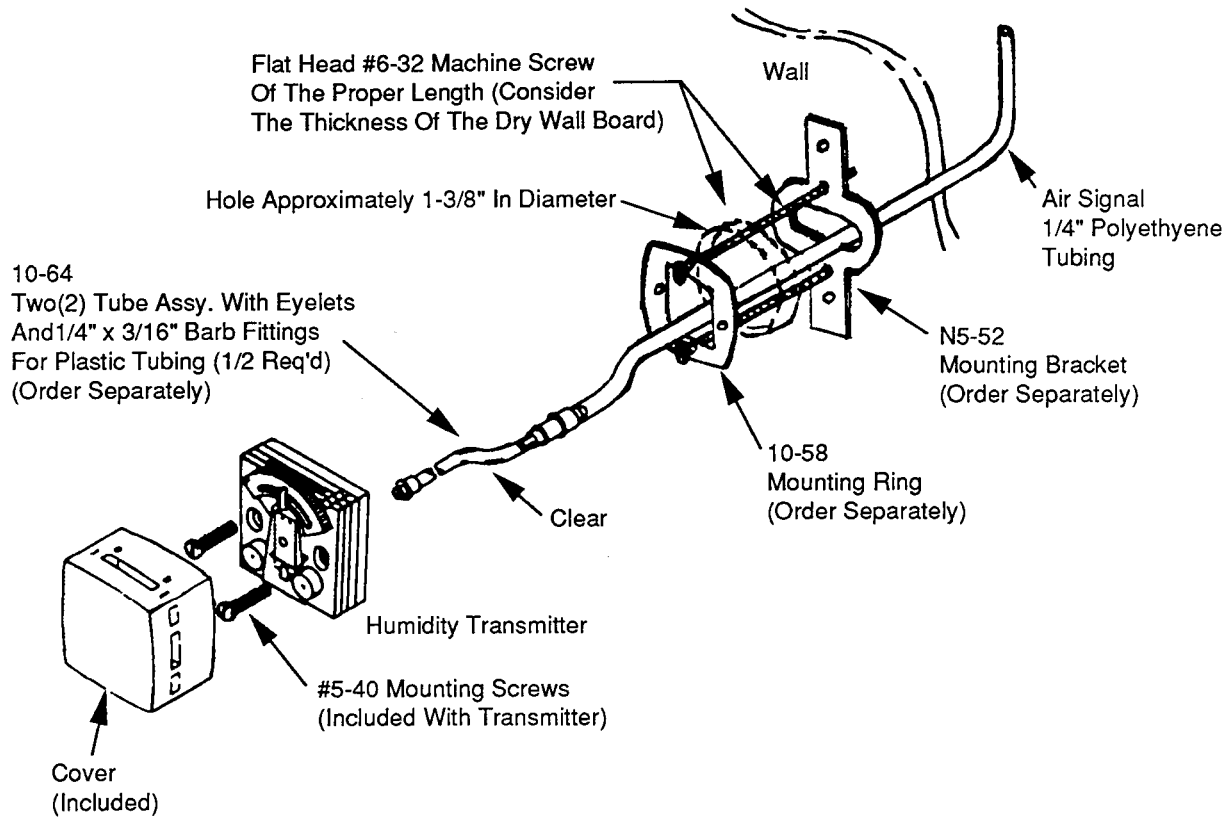


Figure-4 Typical N5-52 Drywall Mounting.

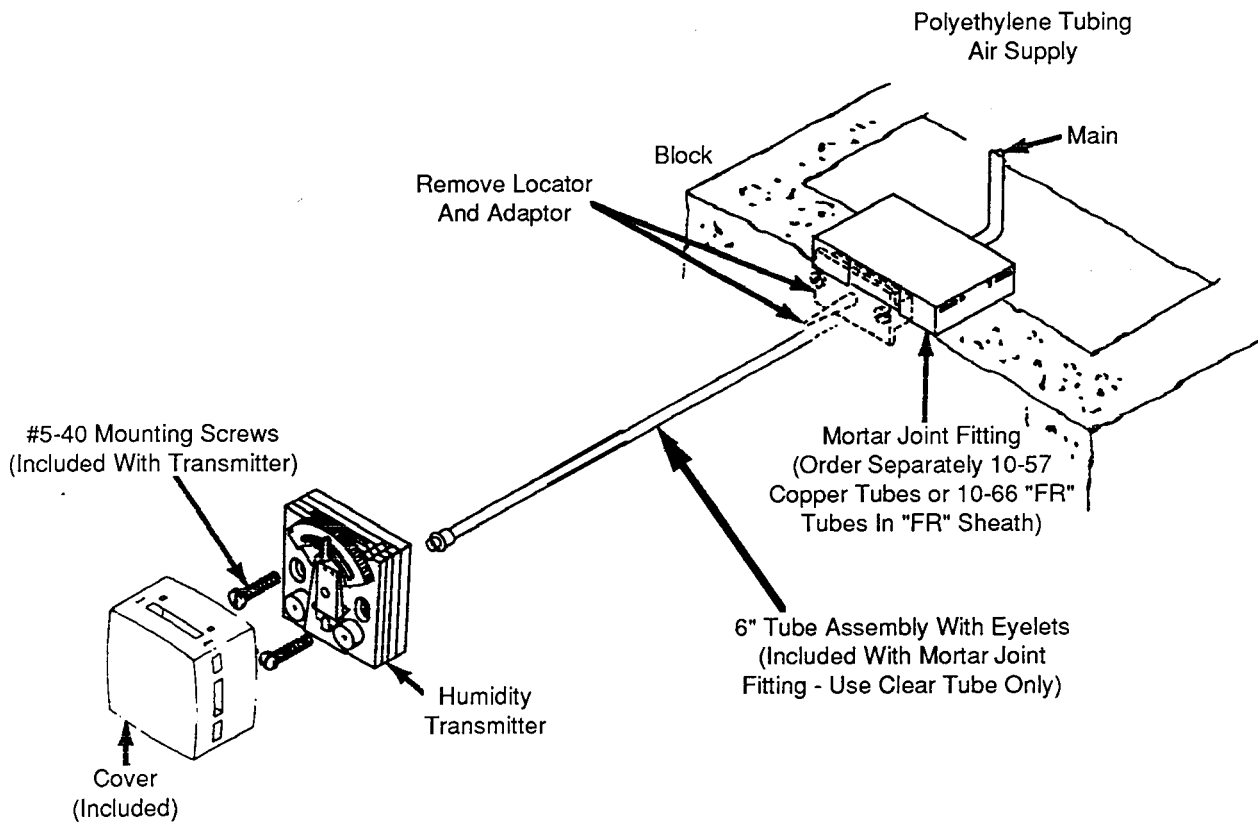


Figure-5 Typical Mortar Joint Fitting in Masonry Wall.

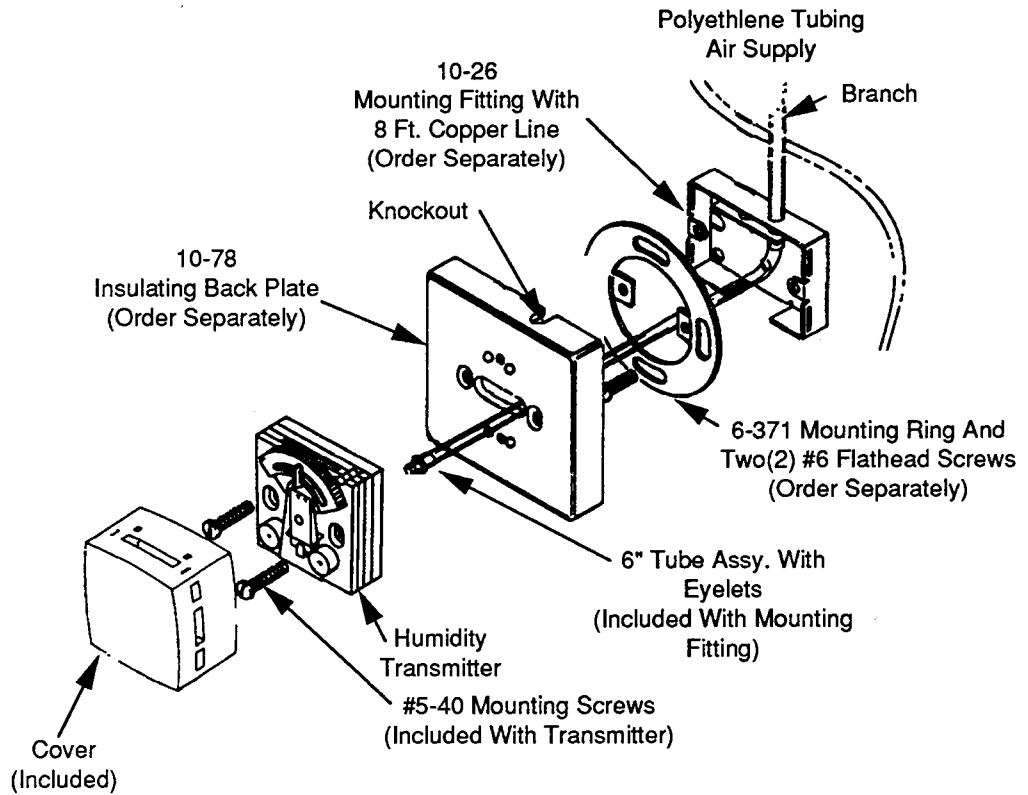


Figure-6 Typical Surface Mount.

CALIBRATION

See Figures 7 and 8.

After mounting, check calibration. Calibration is accomplished by turning calibration screw clockwise to decrease branch pressure or counterclockwise to increase the branch pressure.

Caution: Do not touch the hygroscopic element.

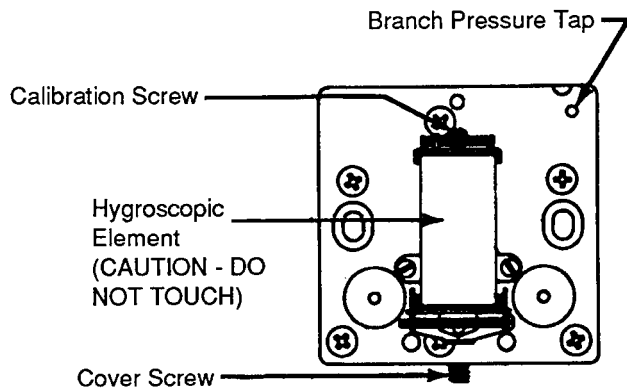


Figure-7 H53-301 Shown with Cover Removed.

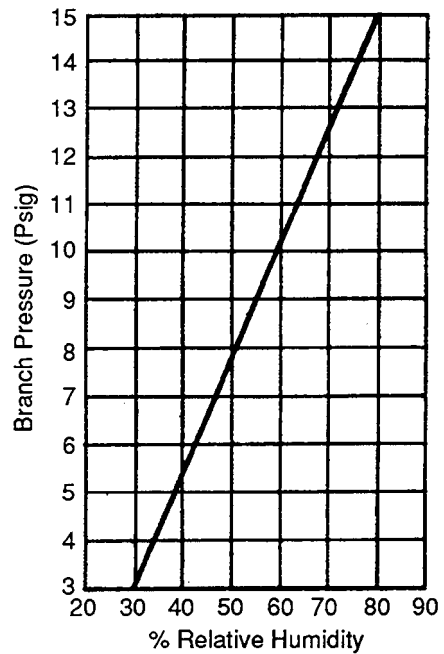


Figure-8 Relative Humidity vs. Branch Pressure.

TYPICAL APPLICATION

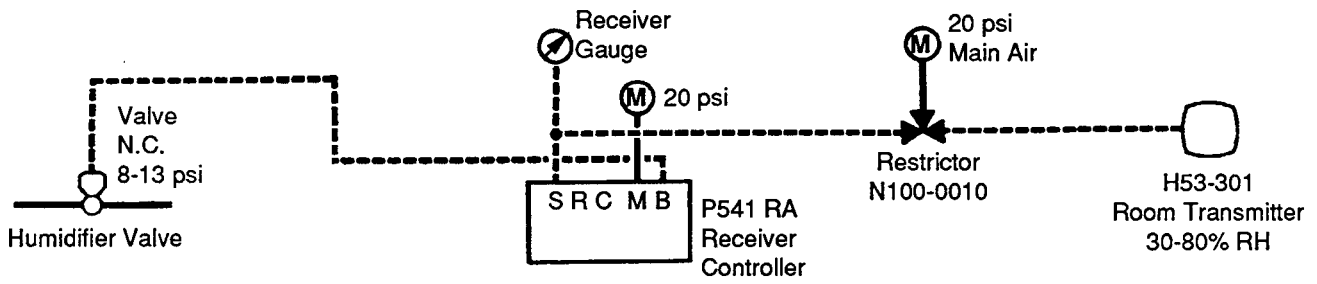


Figure-9 Typical Application H53-301 Room Transmitter.

MAINTENANCE

Regular maintenance of the total system is recommended to assure sustained optimum performance.

REPAIR

None - replace the entire device.

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