

# INSTALLATION INSTRUCTIONS

## HR Designer Series Room RH & RH/T Transmitters



### IMPORTANT WARNINGS

- Only qualified trade installers should install this product
- This product is not intended for life-safety applications
- Do not install in hazardous or classified locations
- The installer is responsible for all applicable codes
- De-energize power supply prior to installation or service

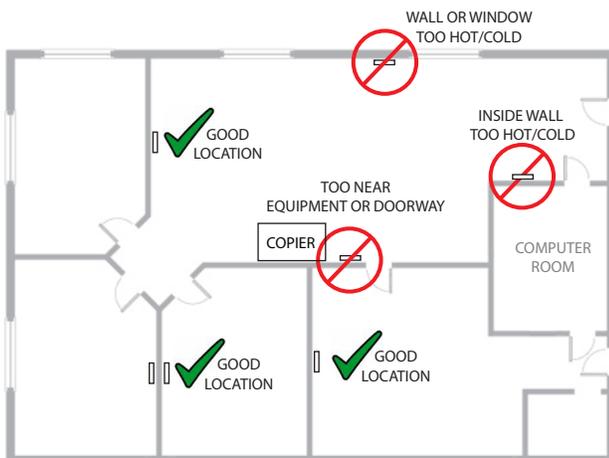
### PRODUCT APPLICATION LIMITATION:

Senva products are not designed for life or safety applications. Senva products are not intended for use in critical applications such as nuclear facilities, human implantable device or life support. Senva is not liable, in whole or in part, for any claims or damages arising from such uses.

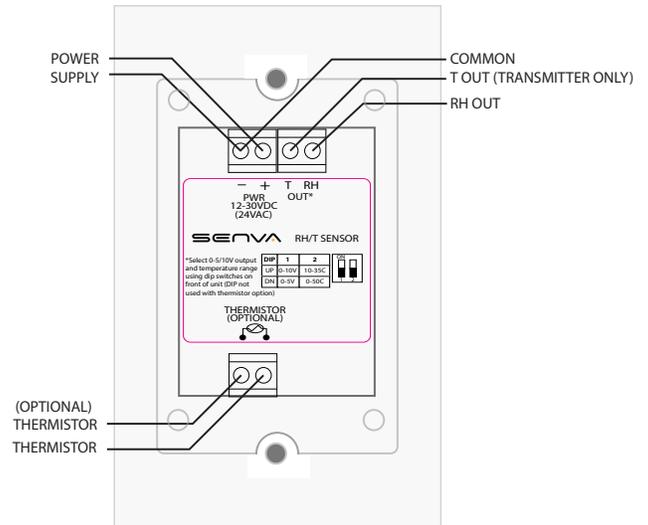
## INSTALLATION

1. **IMPORTANT!** Locate sensor in an area away from ventilation sources and heat generating equipment and appliances. Sensor should be mounted at light switch height in a vertical orientation. Use insulating material behind sensor to ensure reading accuracy.

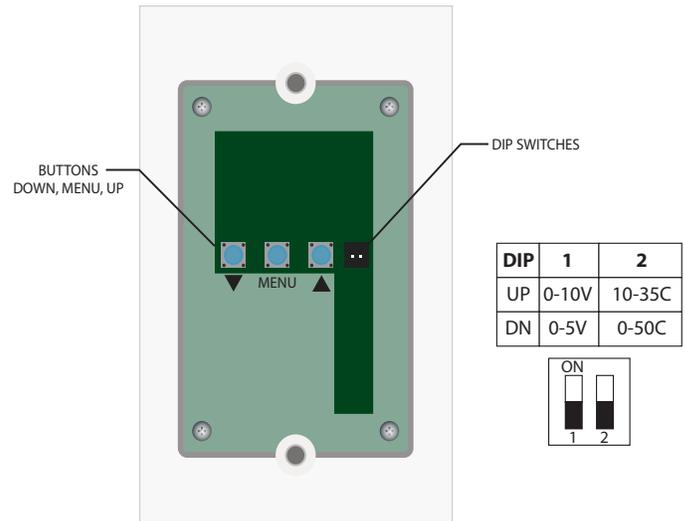
NOTE: Do not install sensor in multi-gang electrical boxes with line voltage or other electrical devices.



2. Wire sensor as shown.



3. Set DIP switch positions to accommodate your application. DIP switch 2 only applies to analog scaling when transmitter temperature output option is selected.



4. Install insulation in junction box, then install base plate and sensor assembly. Sensor must be installed in the orientation shown, with sensor near bottom left corner.

5. Snap on decorative trim ring to complete installation.

## OPERATION

Press center MENU button to cycle between (1 press) %RH offset, and (2 presses) temperature offset (transmitter version only). A red LED will blink to indicate %RH offset setting and glow solid to indicate temperature offset setting in °F.

The left ▼ arrow and right ▲ arrow can be used to decrease or increase offset values in 0.1 increments up to ±5 (% or °).

## SPECIFICATIONS

Power supply		12-30VDC/24VAC <sup>(1)</sup>
Outputs	RH and Temperature (option)	3-wire 0-5V or 0-10V <sup>(4)</sup> (selectable)
Output scaling	RH	0-100%RH
	Temperature	50-95°F (10-35°C) or 32-122°F (0-50°C) (selectable)
Thermistor/RTD options		Yes, see ordering table in catalog
Relative Humidity	Accuracy	2% models: ±2% max 0 to 100% RH, ±1.5% typ 0 to 80% RH @25°C
		3% models: ±3% max 0 to 100% RH, ±2% typ 0 to 100% RH @25°C
	Resolution	0.01%RH
	Hysteresis	±0.8%RH
	Repeatability	0.08% RH
	Non-linearity	Factory linearized <1%RH
	Temperature coefficient	Fully compensated by on-board sensor
	Response time <sup>(2)</sup>	8s
	Output update rate	0.5s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.25%RH per year
	Element Recommended Operating conditions <sup>(3)</sup>	41 to 140°F (5 to 60°C) @ 20% to 80% RH
Temperature Transmitter	Accuracy	2% RH models, <±0.25°C; 0.1°C typ@25°C
		3% RH models, <±0.3°C; 0.25°C typ@25°C
	Resolution	0.01°C
	Repeatability	0.04°C
	Response time <sup>(2)</sup>	2s
	Output update rate	0.5s
Element Operating range	-40 to 140°F (-40 to 60°C)	
Environmental	Enclosure Rating	IP20/NEMA 1
	Unit Temp Rating	-40 to 70°C (-40°F to 158°F)

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.

(2) Time for reaching 63% of reading at 25°C and 1 m/s airflow.

(3) Long term exposures to conditions outside normal range or high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

(4) 15-30VDC/24VAC power supply voltage required for 10 Volt output. Power consumption 100mA max AC, 50mA max DC

### TROUBLESHOOTING

Symptom	Solution
No output	Check wiring. Ensure power supply meets requirements.
Temp or RH reading error	Verify control panel software is configured for correct output scaling.
	Verify accuracy of test instrument. Observe installation and calibration guidelines
	Verify unit is located away from sources of hot/cold.
	Verify RH / T sensing element is inserted properly
	Install insulation foam gasket provided to prevent thermal conduction from inside wall.
	Perform calibration only if necessary.

### CALIBRATION

Senva RH sensors are factory calibrated to NIST traceable standards. No field calibration is necessary or recommended. However, to facilitate compliance with job requirements and commissioning procedures, provisions for field calibration are provided:

1. Locate calibration instrument and sensor in close proximity to each other in a controlled environment free of drafts, people, and equipment to reduce influence on RH and temperature.
2. Compare output of sensor to calibration instrument, and note difference. (In 0-10v mode, 1v = 10%RH)
3. Using the buttons on front of unit, adjust offset value for %RH as needed. Factory calibration may be restored by setting offset back to 0.