

Saturated Environment Relative Humidity Transmitter

HX98-1



- ✓ Waterproof Sensing Element and Housing
- ✓ Compact Transmitter with Built-in Sensor
- ✓ Bulk Polymer Resistance RH Sensor
- ✓ RTD Temperature Measurement Sensor
- ✓ Temperature Compensation
- ✓ Resistant to Contamination

Applications

- ✓ Greenhouses
- ✓ Textile Mills
- ✓ Food Processing
- ✓ Shipping Containers
- ✓ Swimming Pools

OMEGA's relative humidity transmitter is a waterproof RH sensing element and package which is ideally suited for monitoring relative humidity and temperature in high RH/harsh environment applications or where washdowns are required. The unit is designed for continuous monitoring of relative humidity and temperature with $\pm 2\%$ RH accuracy.

Both the sensor and electronics are contained in an epoxy-hardened enclosure designed for continuous service. A water-tight membrane filter is installed over the RH sensor for increased protection against high RH, contaminants and washdowns. The unit is designed to withstand 100% saturation.

The sensor incorporates a bulk polymer resistance element. The polymer is impervious to most contaminants and, since it is a bulk resistance device, surface contaminants such as dust will not alter the accuracy of the readings.

The unit is provided with continuous temperature compensation which adjusts for temperature-induced change in the RH sensor output. The compensation provides high measurement accuracy over the entire operating range of the instrument.

HX98-1 shown smaller than actual size.

Waterproof mating connector included.

Specifications

Humidity Sensing Element: Resistance change of bulk polymer sensor

Temperature Sensing Element: 100 Pt RTD

Performance

Accuracy: @ 25°C (77°F) $\pm 2\%$ RH (30 to 95% RH including hysteresis, linearity and repeatability); $\pm 0.5^\circ\text{C}$

Temperature Effect: Less than 0.11% per °C (0.06% per °F)

Sensitivity: 0.1% RH

Repeatability: 0.5% RH

Linearity: See accuracy

Hysteresis: Less than 1%

Operating Range

Sensor Electronics: 0 to 100% RH, -20 to 54°C (-4 to 129°F)

Maximum Air Velocity: 10,000 ft/minimum

Output Ranges: 2-wire, loop-powered; 4 to 20 mA for 0 to 100% RH into 0 to 900 Ω ; 4 to 20 mA for -28.9 to 60°C (-20 to 140°F)

Adjustment

Zero: $\pm 20\%$, non-interactive

Span: $\pm 10\%$, non-interactive

Long-Term Stability: Less than 2% drift per year typical

Power

Supply Voltage: 12 to 36 Vdc

Max Load: Ω = supply -10 Vdc x 50 A

Note: Minimum supply voltage of 15 Vdc is required for 10V output units

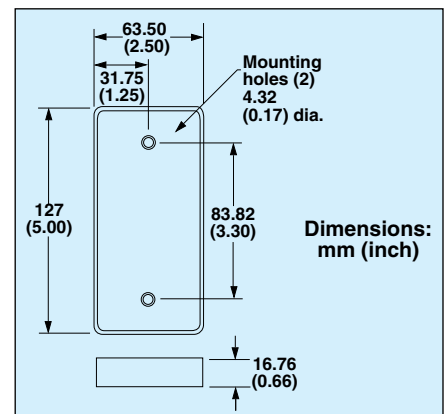
Wiring Connection:

Deutsch 4-position waterproof connector (mating connector provided)
(For front wiring only; flying leads for back wiring)

Storage Temperature:

-65 to 70°C (-85 to 158°F)

Optional Case: 304 SS (HX98-CASE), protects face from mechanical damage



To Order

Model No.	Description
HX98-1	RH/temperature transmitter (front wiring)
HX98-2	RH/temperature transmitter (rear wiring)
HX98-CASE	304 SS case, 16.78 (0.66") thick
HX98-MC	Spare mating connector
PSR-24S	Regulated power supply, 24 Vdc, 400 mA, screw terminal
PSR-24L	Regulated power supply, 24 Vdc, 400 mA, UL stripped leads
PSR-24L-230	Regulated power supply, 24 Vdc, 400 mA, stripped leads, 230 Vac input, CE
PSU-93	Unregulated power supply, 16 to 23 Vdc, 300 mA max, screw terminal

Comes complete with waterproof mating connector and operator's manual.

* To order 3-point NIST-calibration add suffix "-NIST" to model number for an additional cost.

Ordering Example: HX98-1-NIST, RH/TEMP transmitter (front wiring), with HX98-MC, spare mating connector and NIST traceable calibration.