

RH & Temperature Passive Transmitters

HD49... SERIES - PASSIVE TRANSMITTERS FOR RELATIVE HUMIDITY, TEMPERATURE & DEW POINT

INTRODUCTION

The HD49... series of passive transmitters provides a reliable solution for measuring temperature, relative humidity, and dew point temperature in various environments. Designed to be integrated into a 4...20 mA current loop, these transmitters are ideal for temperature and humidity control in applications such as: HVAC/BEMS (Heating, Ventilation, Air Conditioning, and Building Energy Management Systems), pharmaceutical industry, museums and clean rooms, Ventilation ducts, Industrial and civil facilities, public spaces, including canteens, auditoriums, gyms, and high-density farms, greenhouses and agricultural sectors. The HD49 series ensures accurate and dependable long-term performance, thanks to its temperature-compensated capacitive sensor and robust design. Factory calibrated and ready to use, these transmitters offer seamless integration for monitoring and control systems.

FEATURES

Versatile Installation Options

Available in multiple configurations to suit your specific needs:

Horizontal probe for duct mounting (HD49...TO)

Vertical probe for wall mounting (HD49...TV)

Remote probe connected by a cable (HD49...TC) with cable lengths of 2, 5 or 10 m.

Temperature Range Options

Choose between the standard temperature range (-20...+80 °C) or the extended range (-40...+150 °C) for demanding applications.

Durable Construction

The probes are protected by a stainless steel or PTFE filter, safeguarding sensors from dust and particles. Alternative filters are also available for specific applications.

Customizable Probe Lengths

Probes are offered in two lengths: 135 mm or 335 mm, catering to varied installation requirements.

CONFIGURATION & MEASUREMENT

Passive Design for Current Loops

Specifically engineered for 4...20 mA current loop systems, the HD49 series guarantees compatibility with various remote displays, recorders, or PLCs.

Precise Measurements

Equipped with a temperature-compensated capacitive sensor, the HD49 series ensures accurate and reliable readings of temperature, relative humidity, and dew point temperature over time.

Easy Calibration

Calibrate the relative humidity sensor using saturated salt solutions (HD75 for 75% RH, and HD33 for 33% RH) and the HD48TCAL software, ensuring optimal performance over time.



PASSIVE DESIGN FOR CURRENT LOOPS

Specifically engineered for 4...20 mA current loop systems, it guarantees compatibility with various remote displays, recorders, or PLCs.



PRECISION AND RELIABILITY

Advanced capacitive sensor technology with temperature compensation ensures accurate, long-term measurements of temperature, humidity, and dew point.



VERSATILE PROBE CONFIGURATIONS

Horizontal, vertical, and remote probe options with varying lengths adapt to diverse installation needs across industries.



EXTENDED TEMPERATURE RANGE

Operates in challenging environments with standard (-20...+80 °C) and extended (-40...+150 °C) temperature range options.



READY-TO-USE AND LOW MAINTENANCE

Factory calibrated for immediate use, with durable components like stainless steel filters protecting against dust and particles. Minimal maintenance required.

Measurement specifications

Sensor	RH capacitive
Temperature	NTC Pt100 (only versions with horizontal probe or probe with cable and extended range)
Dew Point	Quantity calculated from relative humidity and temperature
Measuring range	RH 0...100%
Temperature	-20...+80 °C -40...+150 °C (only versions with horizontal probe or probe with cable and extended range)
Dew Point	-20...+80 °C
Resolution	RH 0.1 % Temperature 0.1 °C Dew Point 0.1 °C
Accuracy	RH $\pm 1.5\%$ (0...90%) / $\pm 2\%$ (90...100%) @ T=15...35 °C (1.5 + 1.5% of measured value)% @ T=remaining range Temperature NTC sensor = ± 0.3 °C @ T=0...70 °C ± 0.4 °C @ T=remaining range Pt100 sensor = ± 0.3 °C Dew Point Refer to the table in the manual
Repeatability	RH 0.4 % Temperature 0.1 °C Dew Point 0.5 °C

Ordering codes

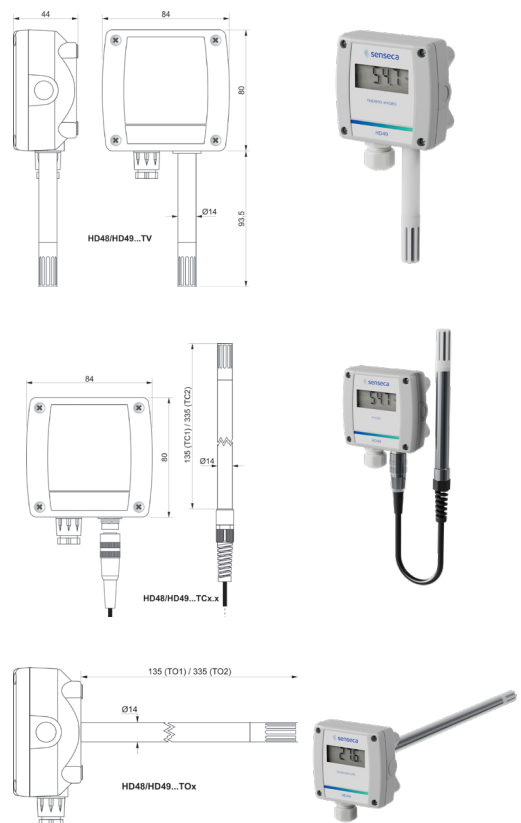
HD49	Display Blank = without LCD L = with LCD Cable length (only for probes with cable "TC") 2 = 2 m 5 = 5 m 10 = 10 m Type of probe TC1 = probe with cable, stem 135 mm TC2 = probe with cable, stem 335 mm TO1 = horizontal fixed probe, stem 135 mm TO2 = horizontal fixed probe, stem 335 mm TV = vertical fixed probe Temperature range Blank = -20...+80 °C (default) E = -40...+150 °C (only ...TC and ...TO models, except HD4977) Measured quantities 01 = relative humidity 07 = temperature 17 = relative humidity and temperature 77 = dew point and temperature
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PC connecting cable and accessories must be ordered separately.

Technical specifications

Output	2-wire 4...20 mA
Power supply	12...40 Vdc
Power Consumption	equal to output signal
Electrical connections	Screw terminal block, max 1.5 mm ² , PG9 cable gland
Connection to PC	- RS232 serial port - USB port with optional adapters
RH sensor operating conditions	-20...+80 °C -40...+150 °C (only versions with horizontal probe or probe with cable and extended range)
Instrument operating conditions	-20...+60 °C / 0...95 %RH
Storage temp.	-20...+80 °C
Materials	- housing: ABS - probe: PBT (TV) or Inox (TC/TO) with stainless steel grid (standard) or PTFE (option E) filter
Weight	From 120 g approx. to 900 g approx. (depending on the model)
Protection degree	IP65

Dimensions



V 1.0