HD4801T...
HD48V01T...
HD4817T...
HD48V17T...
HD4877T...
HD48V77T...

TEMPERATURE, RELATIVE HUMIDITY & DEW POINT TRANSMITTERS

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ISO 9001:2015 CERTIFIED

Certificate No. IQSC202010014

Description

HD48.. Series of Transmitters Measure Temperature, Relative Humidity and Dew Point and provide depending on the version a Current (4…20mA) or a Voltage (0…10V) linear analog outputs signal for transmission to a remote display, recorder, controller or data processing unit.

The HD48...series of transmitters are designed for conditioning and ventilation applications (HVAC/BEMS) in the following sectors: pharmacy, museums, clean rooms, ventilation ducts, crowded places, canteens, auditoria, gyms or high-density farms, as well as industrial and civil sectors.

The HD48... transmitters measure relative humidity with a well proven capacitive sensor and temperature with a precision NTC sensor; the sensors in combination with an accurate electronics guarantee precise and reliable measurements in the course of time. A stainless steel 20µm filter protect the sensors against dust particles and high air velocity (other filters are available for different applications).

The transmitters are factory calibrated and no further adjustments are required. All series are available in three different versions: with orizontal probe (HD48...TO...) for duct mounting, with vertical probe (HD48...TV...) for wall mounting and with remote probe (HD48...TC...) having the probe connected to the electronics by means of a cable (2, 5, or 10 meters long). The probes can be supplied in two lengths (135mm or 335mm). **Optionally, 4-digit LCD display is available. It allows to visualize a selected quantity among those detected by the instrument (°C, °F, %RH or DP).**

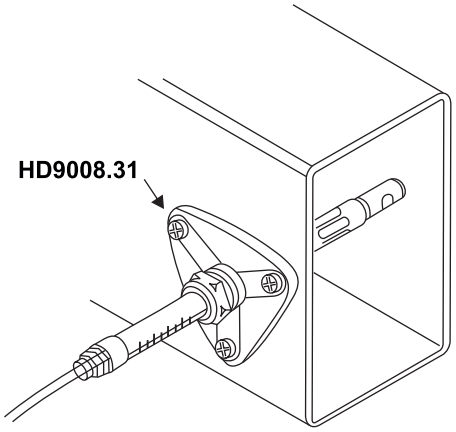
Many different accessories are available for the installation: for example to fix the probe to the duct, you can use, the HD9008.31 flange, a 3/8" universal biconical connection or a PG16 metal cable gland (ø10…14mm).

Installation Notes

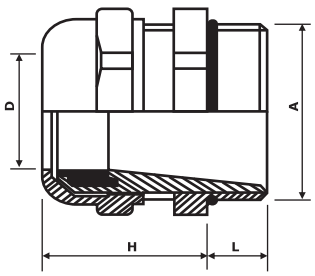
- To fix the probe inside a ventilation duct, a pipe , etc. you can use, for example, HD9008.31 flange, a PG16 metal cable gland (ø10…14mm) or a 3/8" universal biconical connection.

Technical Specifications :

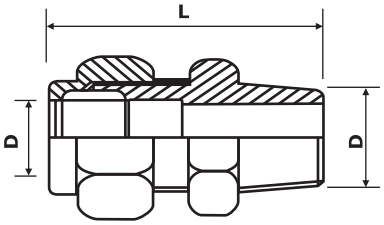
Relative Humidity Measurement		
Sensor	Capacitive polymer 150pF	
Measuring Range	5…98%RH	
Measurement Accuracy	±2% (15..90%RH), ±2.5% in the remaning range	
Repeatability	0.4%RH	
Temperature Measurement		
Sensor	NTC 10kΩ	
Measuring Range	-20…+80°C	
Measurement Accuracy	±0.3°C (0..+70°C) ±0.4°C (-20..0°C, +70..+80°C)	
Repeatability	0.05°C	
Dew Point		
Sensor	Calculated Paramenter from Humidity & Temperature	
Measuring Range	-20…+80°C DP	
Measurement Accuracy	±1°C DP (0..40°C, 15..90%RH) ±2°C DP 0..40°C and 90..98%RH, 5..15%RH) ±3°C DP (-20..0°C, +40..+80°C and 90..98%RH, 5..15%RH) not specified (0..5%RH)	
Repeatability	0.5°C DP	
Analog output		
HD4801T...models	Humidity Output	4…20mA (0...100%RH), R_L < 500Ω 22mA out of measuring range
HD48V01T models	Humidity Output	0…10Vdc (0...100%RH), R_L > 10kΩ 11Vdc out of measuring range
HD4817T...models	Humidity Output	4…20mA (0...100%RH), R_L < 500Ω 22mA out of measuring range
	Temperature Output	4...20mA (-20...+80°C), R_L < 500Ω 22mA out of measuring range
HD48V17T...models	Humidity Output	0…10Vdc (0...100%RH), R_L > 10kΩ 11Vdc out of measuring range
	Temperature Output	0…10Vdc (-20...+80°C), R_L > 10kΩ 11Vdc out of measuring range
HD4877T...models	Dew Point Output	4...20mA (-20...+80°C DP), R_L<500Ω 22mA out of measuring range
	Temperature Output	4...20mA (-20...+80°C), R_L < 500Ω 22mA out of measuring range
HD48V77T...models	Dew Point Output	0…10Vdc (-20...+80°C DP), R_L >10kΩ 11Vdc out of measuring range
	Temperature Output	0…10Vdc (-20...+80°C), R_l > 10kΩ 11Vdc out of measuring range
Power Supply and Connections		
Supply Voltage	16...40Vdc or 24 Vac ±10%	
Electrical Connections	Terminal block and PG9 cable grip	
General specifications		
Electronics Working Temperature	0...+60°C	
Probe Working Temperature	-20…+100°C	
Storage Temperature	-20…+80°C	
Electronics Protection Class	IP66	
Case Dimensions	80 × 84 × 44	



HD9008.31 Flange



PG16 Metal Cable Gland
D = 10…14mm
L = 6.5mm
H = 23mm
A = PG16



Universal Biconical Connector
L = 35mm
D = 14mm
A = 3/8"

Electrical Connections

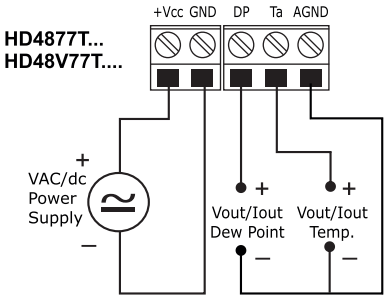
Power Supply

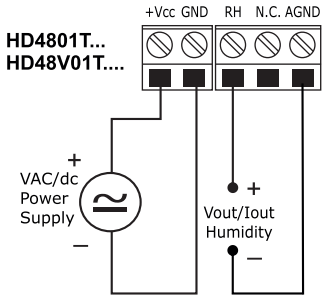
Power the instrument at the voltage shown in the electrical specifications: power supply terminals are marked as +Vcc and GND.

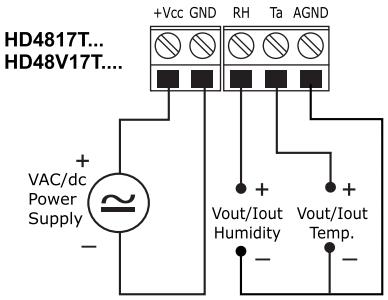
Analogue Output

According to the model, the output signal comes from:

- RH and AGND terminals for Relative Humidity Transmitters,
- RH and AGND, Ta and AGND terminals for Temperature / Relative Humidity Transmitters.
- DP and AGND, Ta and AGND terminals for temperature / dew point transmitters.





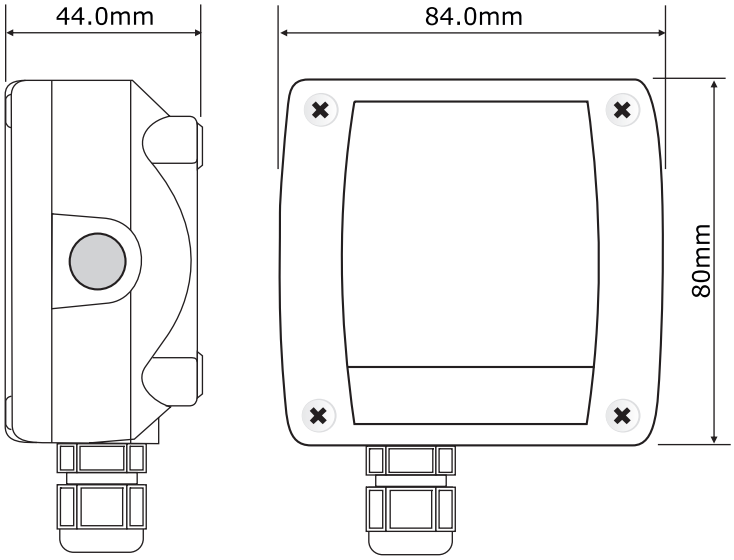


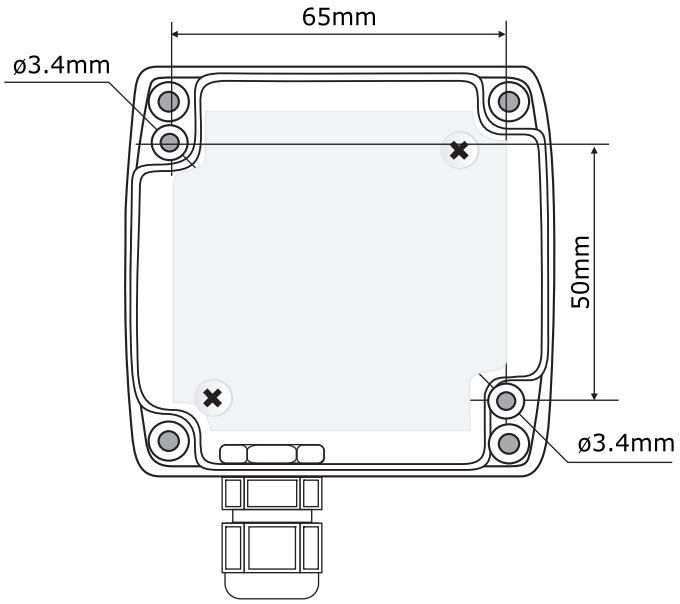
Relative Humidity Calibration

The instruments are supplied factory calibrated and ready to use. If it is necessary, it is possible to perform the calibration of the relative humidity sensor using the saturated salt solutions **HD75** (75% RH saturated salt solution) and **HD33** (33% RH saturated salt solution) and connecting the instrument to the PC using HD48TCAL kit.

HD48TCAL kit includes RS27 cable for connecting HD4801T, HD4817T and HD4877T to the PC and a CDRom for operative systems Windows 98 to XP that guides the user in the relative humidity calibration procedure.

Dimension

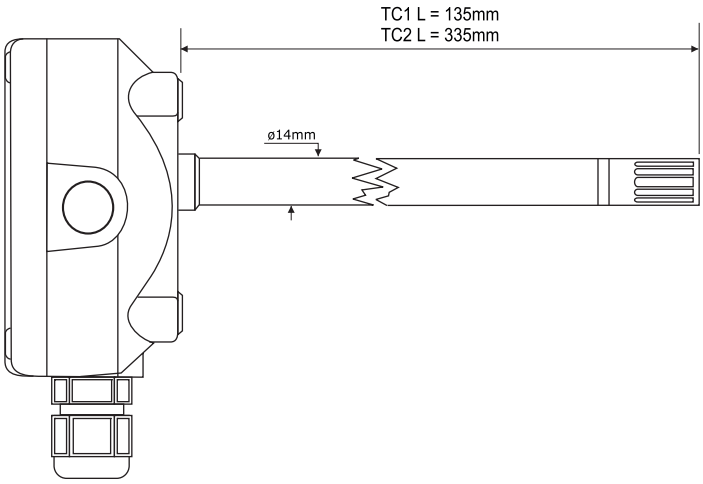




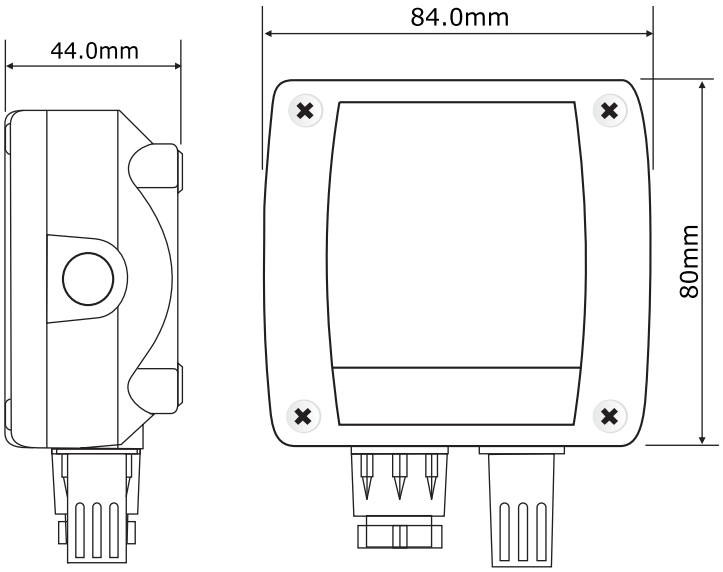
HD4817TO1 HD4877T250 HD4817TO2

Probe Dimension

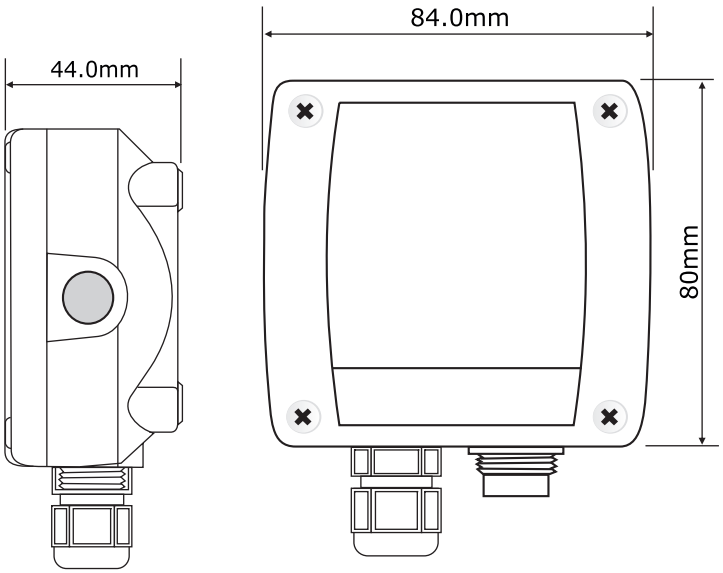
TO Series

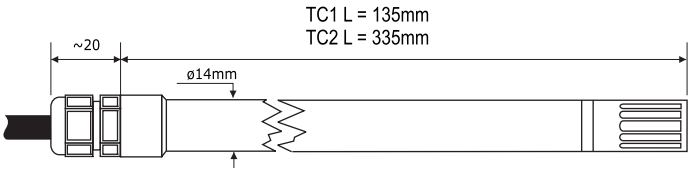


TV Series



TC Series





ORDERING CODES

HD48 T L

- **L** = with LCD display
- Cable lenght
  - **2** = 2m
  - **5** = 5m
  - **10** = 10m
- Probe type
  - **TO1** = 135mm
  - **TO2** = 335mm
  - **TC1** = 135mm
  - **TC2** = 335mm
  - **TV** = wall mounting
- **01** = %RH output
  17 = Temperature and %RH outputs
  77 = Temperature and dew point outputs
- **No Sign** = 4…20mA analogue output
  V = 0…10Vdc analog output

Code Examples

HD4801TV: Wall mounting digital transmitter for measuring relative humidity. Relative humidity range 5...98%RH. Analog output: 4…20mA (0...100%RH). Sensor operating temperature -20...+80°C, electronics operating temperature -10…+60°C. Power supply 16...40Vdc or 24Vac.

HD4817TO1: Digital transmitter for measuring temperature and relative humidity in ducts. Version with AISI304 steel probe, 14mm diameter and 135mm length, joined to the electronics enclosure.
Relative humidity range 5...98%RH, temperature range -20...+80°C. Analog outputs: 4…20mA (0...100%RH) for RH and 4...20mA (-20...+80°C) for temperature. Sensors operating temperature -20...+80°C, electronics operating temperature -10…+60°C. Power supply 16...40Vdc or 24Vac.

HD48V17TC2.5: Digital transmitter for measuring temperature and relative humidity. Version with AISI304 steel probe, 14mm diameter and 335mm length, connected to the electronics through cable 5m long.
Relative humidity range 5...98%RH, temperature range -20...+80°C.
Analog outputs: 0…10V (0...100%RH) for RH and 0...10V (-20...+80°C) for temperature. Sensors operating temperature -20...+80°C, electronics operating temperature -10…+60°C. Power supply 16...40Vdc or 24Vac.

HD4877TO2: Digital transmitter for measuring dew point temperature (°C DP) and temperature in ducts. Version with AISI304 steel probe, 14mm diameter and 335mm length, joined to the electronics enclosure.
Dew point range -20...80°C DP, temperature range -20...+80°C.
Analog outputs: 4…20mA (-20...80°C DP) for DP and 4...20mA (-20...+80°C) for temperature. Sensors operating temperature -20...+80°C, electronics operating temperature -10…+60°C. Power supply 16...40Vdc or 24Vac.

Accessories

HD48TCAL: The kit includes **RS27**, RS232 null modem serial connection cable with 9 poles sub-D 9 female and 3 pole connector for COM port, and CDRom for operative systems Windows 98 to XP that guides the user in the relative humidity calibration procedure.

HD75: 75% RH saturated solution for calibrating the relative humidity sensor, complete with thread for probes with Ø 14mm and Ø 26mm.

HD33: 33% RH saturated solution for calibrating the relative humidity sensor, complete with thread for probes with Ø 14mm and Ø 26mm.

HD9008.31: Wall flange with cable outlet to fix probes with Ø 14m.

PG16: stainless steel gland (AISI304) for probes with Ø 14m.

P5: stainless steel grid protection for probes Ø 14m.

P6: 20µ sintered stainless steel protection for probes Ø 14m.

P7: 10µ PTFE protection for probes Ø 14m.

P8: stainless steel grid and Pocan protection for probes Ø 14m.