HD2717T… - HD2817T… SERIES

To both series, it is possible to connect the **S.TC2.480.2** probe for the measurement of humidity and dew point in compressed air systems, or the **S.481.2** probe for the measurement of temperature and humidity in pipes.

The probes are factory calibrated and ready to use, they are provided with a **SICRAM2** module which stores the calibration data of the probes, allowing their interchangeability.

The instruments **measure**:
- Temperature in Celsius or Fahrenheit scales
- Relative humidity

and calculate:
- Absolute humidity
- Mixing Ratio
- Dew point
- Wet bulb temperature

All models have both current and voltage outputs.
Some models are fitted with two control relays and one alarm relay, configurable by the user.
All models are fitted with a multistandard RS232/RS485 serial port and an auxiliary RS232C standard serial output. The RS485 serial output allows the management of more than one device in a network.
The models HD2717T… can be with or without LCD. The display shows on the first line the relative humidity or a derived parameter and on the second line the temperature in degrees Celsius or Fahrenheit; in the models HD2817T…, the graphic backlit LCD shows contemporaneously three measured physical quantities (or the real time graphic) of one of the measured quantities.
The **data logger function** allows to store the measures with a selectable storage interval.
The instrument setup remains permanently stored, while the real time clock is protected by an apposite Lithium battery against temporary mains voltage interruptions.
The power supply can be chosen, at the time of placing the order, between 24 Vac/dc or universal 90…240 Vac.

HD2717T… - HD2817T… SERIES
TRANSMITTER, INDICATOR, ON/OFF REGULATOR, TEMPERATURE AND HUMIDITY DATA LOGGER WITH INTERCHANGEABLE PROBE

The instruments of the **HD2717T…** and **HD2817T…** series are transmitters, indicators, and ON/OFF regulators with data logging functions; they measure temperature and humidity.
The models of the HD2817T… are fitted with a graphic 128 x 64 backlit display.
The main feature of these instruments is their **interchangeable probe.** The probe can be replaced by the user without process interruption. Thus, the probe can be calibrated or repaired at a later time.
The instrument is available in different versions: with **horizontal probe** (**S.TO**), **vertical probe (S.TV)** or with **remote probe** (**S.TC**), having the probe connected to the electronics by means of a cable of various lengths. The S.TO and S.TV probes are made of stainless steel AISI304, the S.TC probes can be of stainless steel AISI304 or Technopolymer PBT (plastic material).

Instrument versions and available probes

Display (optional only for HD2717T… series)	
HD2717Tx.**0**x	No display
HD2717Tx.**D**x	Custom LCD
HD2817Tx.**D**x	Graphic LCD

Relay	
HD2717Tx.x**0** HD2817Tx.D**0**	Absent
HD2717Tx.x**R** HD2817Tx.D**R**	2 control relays with change-over contact 1 alarm relay with normally open contact

Type of probe	
HD2717**T**.xx HD2817**T**.Dx	Instrument with vertical probe (S.TV) or probe with cable (S.TC)
HD2717**TO**.xx HD2817**TO**.Dx	Instrument with horizontal probe S.TO.

Horizontal Probe S.T02

HD2717T - Model without dispaly

HD2717T - Model with dispaly

HD2817T

Types of probes

Probes with cable

S.TC

Stem material
Blank = AISI304, P7 filter, max. 150 °C
HT = AISI304, P6 filter, max. 180 °C
P = PBT, P7 filter, max. 120 °C

Cable length
2 = 2 m; **5** = 5 m; **10** = 10 m

Stem length
1 = 135 mm
2 = 335 mm

Vertical probe

S.TV	Stem length =130 mm. AISI304. P8 filter.

Horizontal probes

S.TO1	Stem length =135 mm. AISI304. P7 filter.
S.TO2	Stem length =335 mm. AISI304. P7 filter.

Probes with cable for the measurement of humidity and dew point in compressed air systems or pipes

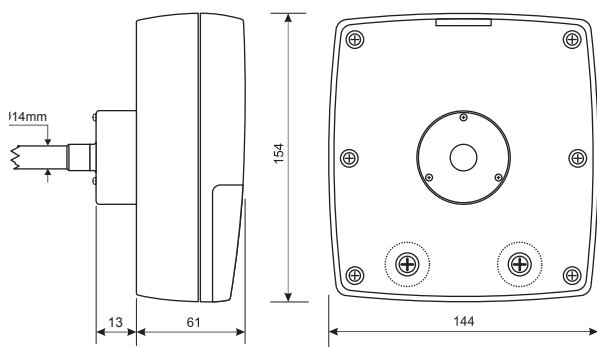| S.TC2.480.2	Cable length 2 m. 1/4" quick coupling Italian standard. AISI 304 measuring chamber.
S.481.2	Cable length 2 m. G ½" threading. 15µ sintered AISI 316 stainless steel filter.

PC connection

The transmitters are equipped with a multistandard RS232C/RS485 port and one RS232C auxiliary serial port for connection to a PC.
The auxiliary RS232C port can be connected to a USB PC port via the CP27 cable with integrated USB/RS232C converter.

Terminal board
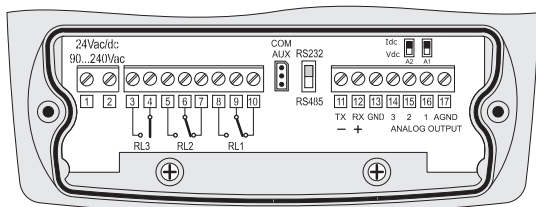
Dimensions
144 x 154 x 61 mm

Technical specifications (@ 24Vac and 20 °C)

Inputs

Temperature	Sensor	Pt100
	Measuring range	-50…+200 °C
	Resolution	0.1 °C
	Accuracy	±0.25 °C
Humidity	Sensor	Capacitive
	Measuring range	RH = 0…100 %RH AH = 0…600 g/m³ DP & Tw = -50…+100 °C MR = 0…2000 g/kg of dry air
	Resolution	0.1 %RH
	Accuracy	±1.5 %RH (0…90 %RH) ±2.0 %RH (elsewhere) @T=15…35 °C ±(1.5+1.5% of the measured value) %RH @ T = remaining range
Accuracy of the calculated physical quantities	See tables in the next page	Accuracy of the Dew point @ T = 20 °C ± 2°C DP (-40…-20 °C DP) ± 1.5°C DP (-20…0 °C DP) ± 1°C DP (0…+20 °C DP)
Response time		3 min with filter (at 20 °C and 0.5 m/s)

Same specifications reported above apply for **S.TC2.480.2** and **S.481.2** probes (for measuring humidity of the air in pipes), with the **following exceptions**:

S.TC2.480.2 / S.481.2

Temperature	Measuring range	-40…+60 °C
Dew Point	Measuring range	-40…+60 °C DP
	Accuracy @ T = 20 °C	± 2 °C DP (-40…0 °C DP) ± 1 °C DP (0…+20 °C DP)
Environmental Conditions	Working Temperature	-40…+80 °C
	Working Pressure	0…16 bar (S.TC2.480.2) -1…8 bar (S.481.2)

Outputs

Communications	Type	RS232C and RS485 Multidrop
	Baud Rate	9600 baud 57600 baud non-permanent
Analog outputs	Number	2 (HD2717T…) 3 (HD2817T…)
	Output types	4…20 mA; 0…20 mA 0…10 Vdc; 2…10 Vdc
	Load resistance	Current output: 500Ω max Voltage output: 100kΩ min
	Resolution	16bit
	Accuracy analog outputs	±0.05% f.s. @20 °C
Relays	Operating relays	2 SPDT operating relays 3 A / 250 Vac resistive load
	Alarm relay	1 SPST normally open 3 A / 250 Vac resistive load

Wall flange with grommet for probe Ø 14 mm

| Instrument		
Power supply	24 Vac/dc ± 10% or 90…240 Vac depending on model, 50…60 Hz Average consumption 3 W	
Data logger	Storage capacity	9000 samples in max. 256 sessions
	Storage type	Circular memory
	Stored parameters	All the parameters and the status of the outputs are stored.
	Storage interval	1, 2, 5, 10, 20, 60 s 2 and 4 min
Internal clock	Type	Real time with Lithium backup battery
	Accuracy	±1 min/month
Operating conditions	Temperature	-20…+60 °C
	Relative humidity	0…90 %RH non-condensing
	Static operating pressure of the sensors	max. 12 bar
	Storage temperature	-30…+80 °C
Weight	600 g approx.	
Material	ABS	
Degree of protection	IP65	

Accuracy of the calculated physical quantities

The accuracy of the calculated physical quantities depends on the accuracy of the relative humidity and temperature calibration.

Accuracy of the dew point measurement (DP) as a function of RH

		Relative Humidity (%)					
		10	30	50	70	90	100
Temperature (°C)	-20	0.92	0.49	0.30	0.22	--	--
	0	1.05	0.56	0.35	0.25	0.20	0.18
	20	1.18	0.75	0.45	0.34	0.27	0.23
	50	1.27	0.88	0.56	0.42	0.33	0.30
	100	1.30	1.17	0.76	0.58	0.47	0.42

Accuracy of the Dew Point Td (°C) in S.TC2.480.2 and in S.481.2
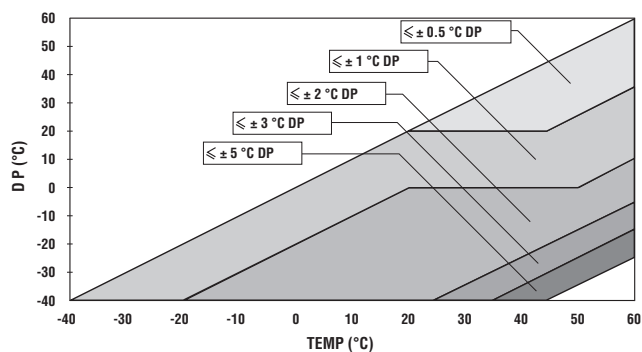
Accuracy of the absolute humidity (g/m³)

		Relative Humidity (%)					
		10	30	50	70	90	100
Temperature (°C)	-20	0.015	0.020	0.025	0.030	---	---
	0	0.08	0.10	0.11	0.13	0.14	0.15
	20	0.28	0.33	0.40	0.44	0.50	0.55
	50	1.36	1.56	1.74	1.92	2.13	2.19
	100	9.37	10.2	11.3	12.3	13.2	13.5

Accuracy of the mixing ratio (g/kg)

		Relative Humidity (%)					
		10	30	50	70	90	100
Temperature (°C)	-20	0.014	0.017	0.020	0.024	---	---
	0	0.06	0.08	0.09	0.10	0.12	0.13
	20	0.24	0.29	0.34	0.39	0.44	0.45
	50	1.28	1.54	1.85	2.20	2.53	2.66
	100	12.5	23.2	46.2	136.0	---	---

ORDERING CODES

HD2717T…: Transmitter, indicator and ON/OFF regulator for temperature and humidity, with data logging functions. Equipped with two analog outputs, current (0÷20 mA and 4÷20 mA) or voltage (0÷10 Vdc and 2÷10 Vdc) outputs. RS232/RS485 serial outputs for PC connection. RS27 cable is included only for transmitters without display.

HD2817T…: Transmitter, indicator and ON/OFF regulator with display and data logger function for temperature and humidity. Equipped with three analog outputs in current (0÷20 mA and 4÷20 mA) or voltage (0÷10 Vdc and 2÷10 Vdc). RS232/RS485 serial outputs for PC connection.

Both are supplied with DeltaLog12 software downloadable from Delta OHM website.

Model, power supply and type of probe have to be specified when placing the order. For probes ordering codes (S.TV - S.TCx.xx - S.TOx), see dedicated paragraph in the previous page.

Accessories have to be ordered separately.

HD2717

Power Supply
Blank = 90…240 Vac
/24 = 24 Vac/dc

Relay
0 = without relay
R = with relay

Display
0 = without display
D = with display

Probe type
T = model for vertical probe or probe with cable
TO = model for horizontal probe

HD2817 . D

Power Supply
Blank = 90…240 Vac
/24 = 24 Vac/dc

Relay
0 = without relay
R = with relay

Probe type
T = model for vertical probe or probe with cable
TO = model for horizontal probe

Accessories

RS27: Cable for null-modem RS232 serial connection with 9 poles sub-D connector for PC and 3-pole connector for COM AUX port (**included with transmitters without display**).

CP27: USB to COM AUX serial converter.

HD75: 75 %RH saturated solution.

HD33: 33 %RH saturated solution.

HD11: 11 %RH saturated solution.

HD9008.21.1: Flange with support, hole Ø26 mm for installation of S.TC probes in vertical position, **distance from the wall 250 mm. S.TC probes series require HD9007T26.2 adapter.**

HD9008.21.2: Flange with support, hole Ø26 mm for installation of S.TC probes in vertical position, **distance from the wall 125 mm. S.TC probes series require HD9007T26.2 adapter.**

HD9007T26.2: Adapter from Ø26 mm to Ø14 mm for supports HD9008.21.1 and HD9008.21.2 for S.TC series probes.

HD9008.31: Wall flange with cable outlet to fix probes with Ø14 mm.

PG16: Stainless steel gland (AISI304) for probes with Ø14 mm.

Protection for humidity probes Ø 14, thread M12x1

P6: 10 μm sintered stainless steel protection. Operating temperature: -40…180 °C.

P7: 20 μm PTFE protection. Operating temperature: -40…150 °C.

P8: PBT and 10 μm stainless steel grid protection. Operating temperature: -40…120 °C.