Delta OHM

Measuring instruments design and manufacture

HD2817T...

[GB] Transmitter, indicator, ON/OFF regulator, temperature and humidity data logger with interchangeable probe

made in italy

[GB] Description

The instruments of the HD2817T... series are transmitters, indicators, and ON/OFF regulators with data logging functions, they measure temperature and humidity.
They are fitted with a graphic 128x64 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 three 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 POCAN (plastic material).
The probe is factory calibrated and ready to use, it is provided with a SICRAM2 module which stores the calibration data of the probe, allowing the interchangeability of the probes. The instruments measure:

- Temperature in Celsius or Fahrenheit temperature scale
- Relative humidity

and calculate:

- Dew point
- Absolute humidity
- Mixing Ratio

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 HD2817T... are fitted with a large graphic backlit LCD (128x64 pixel). The display 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 24Vac/dc or universal 90...240Vac.

Instrument versions and available probes

Relay	
HD2817Tx.D0	Absent
HD2817Tx.DR	2 control relays with change-over contact. 1 alarm relay with normally open contact.

Type of probe	
HD2817Tx.Dx	Instrument with vertical probe **S.TV** or probe with cable **S.TC**.
HD2817TO.Dx	Instrument with horizontal probe **S.TO**.

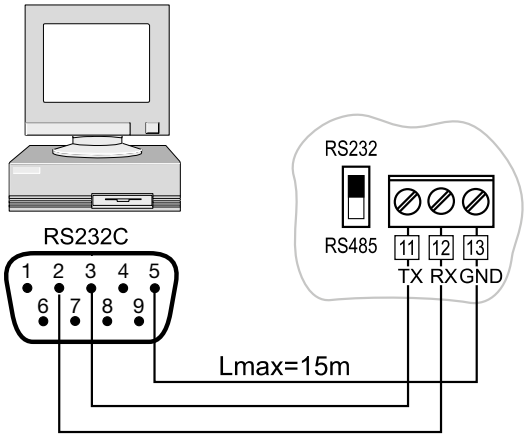
Probes complete with SICRAM2 module for instruments HD2817Tx.Dx	
S.TV	Vertical probe L= 130mm
The material of the S.TC...probes can be chosen between stainless steel AISI304 or POCAN plastic material.	
S.TC1.2	Probe L=130mm with cable 2m
S.TC1.2P	Probe L=130mm with cable 2m (POCAN probe)
S.TC1.5	Probe L=130mm with cable 5m
S.TC1.5P	Probe L=130mm with cable 5m (POCAN probe)
S.TC1.10	Probe L=130mm with cable 10m
S.TC1.10P	Probe L=130mm with cable 10m (POCAN probe)
S.TC2.2	Probe L=330mm with cable 2m
S.TC2.2P	Probe L=330mm with cable 2m (POCAN probe)
S.TC2.5	Probe L=330mm with cable 5m
S.TC2.5P	Probe L=330mm with cable 5m (POCAN probe)
S.TC2.10	Probe L=330mm with cable 10m
S.TC2.10P	Probe L=330mm with cable 10m (POCAN probe)

Probes complete with SICRAM2 module for instruments HD2817TO.xx	
S.TO1	horizontal probe L= 130mm
S.TO2	horizontal probe L= 330mm

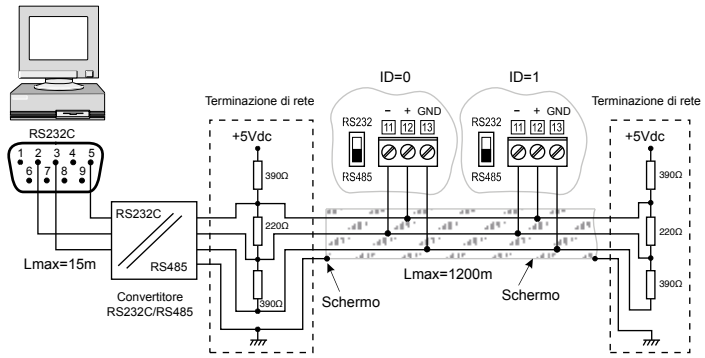
HD2817TC.Dx

HD2817TO.Dx

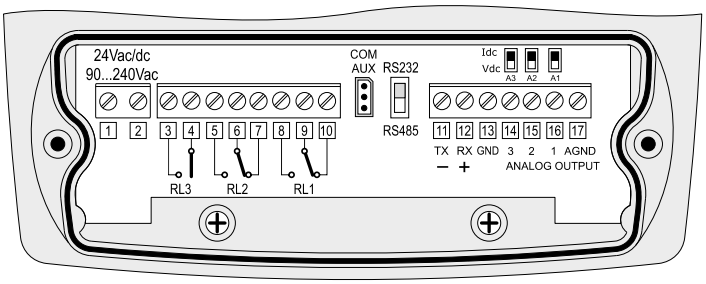
Probes



PC: instrument connection with serial communication protocol RS232C.



PC: instrument connection with RS485 communication protocol for distances up to 1200m by RS232C/RS485 converter.



Terminal board

Wall fastening plate.

Technical specifics (@ 24Vac and 20°C)

Inputs		
Temperature	Sensor	Pt100 classe 1/3 DIN
	Working range of the sensor	-50 ... +200°C (-58 ...+392°F)
Humidity	Relative humidity %RH	5 ... 98%RH
	Working range of the sensor in temperature	-50 ... +150°C (Special configurations up to 180°C available on request)
	Dew point TD	-50 ... +100°C
	Absolute humidity	0 ... 600g/m^3
	Mixing ratio	0 ... 2000g/kg of dry air
Accuracy of the Measured physical quantity	Temperature Pt100	±0.25°C
	Relative humidity %RH	±2.5%RH (5...90%RH) ±3.0%RH (90...98%RH)
Accuracy of the calculated physical quantity	See table in the following chapter	
Response time		3min with grid protection (at 20°C and 0.5m/s)

Outputs		
Communications	Type	RS232C and RS485 Multidrop
	Baud Rate	9600 baud 57600 baud non-permanent
Physical quantities	Measured	Temperature, relative humidity
	Calculated	Dew point, absolute humidity, mixing ratio.
Analog outputs	Number	3
	Output types	4...20mA; 0...20mA 0...10Vdc; 2…10Vdc
	Load resistance	Current output: 500Ω max Voltage output: 100kΩ min
	Resolution	16bit
	Accuracy analog outputs	±0.05% f.s. @20°C
	In case of measuring error (exceeding of the operating limits, faulty or not connected probe,....)	Idc = 22mA Vdc = 11V
Relay	Control relay	2 x 3A/250Vac Load resistance, 1 change-over contact
	Alarm relay	1 x 3A/250Vac Load resistance, 1 with normally-open contact

Instrument		
Power supply	Versions	24Vdc / 24Vac 50…60Hz, ±10%
		90 ... 240Vac 50…60Hz
	Average consumption	3W
Data logger	Storage capacity	9000 samples in max. 256 sessions
	Storage type	Circular memory
	Stored parameters	Dew point, temperature, relative humidity, absolute humidity, mixing ratio, analog outputs 1 and 2, relay status 1, 2, 3.
	Storage interval	1, 2, 5, 10, 20, 60 seconds, 2 and 4 minutes
Real time clock	Type	Real time with Lithium buffer battery
	Accuracy	±1min/month
Software		DeltaLog12 for Windows® 98 to XP operating systems
Display	Graphic backlit LCD	128x64 pixel
Ambient working conditions of the electronics	Operating temperature	-20…+60°C
	Relative humidity	0…90%RH - No condensate
	Static working pressure of the sensors	12 bar max.
	Storage temperature	-30…+80°C
Housing	L x H x W	143x154x61
	Weight	600g
	Material	ABS
	Degree of protection	Electronics 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. The provided values refer to an accuracy of ±2.5%RH, ±0.25°C, 1013.25mbar.

Accuracy of the Dew Point Td (°C)

		Relative Humidity (%)					
		10	**30**	**50**	**70**	**90**	**100**
Temperature (°C)	**-20**	2.50	1.00	0.71	0.58	--	--
	0	2.84	1.11	0.78	0.64	0.56	0.50
	20	3.34	1.32	0.92	0.75	0.64	0.62
	50	4.16	1.64	1.12	0.90	0.77	0.74
	100	5.28	2.07	1.42	1.13	0.97	0.91

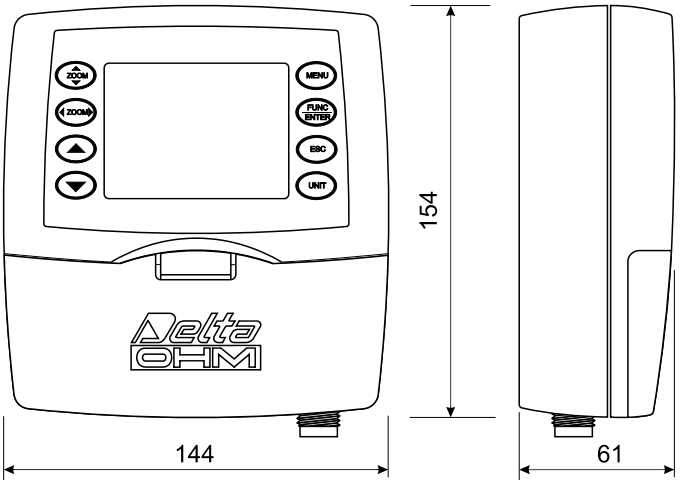
Accuracy of the absolute humidity (g/m³)

		Relative Humidity (%)					
		10	**30**	**50**	**70**	**90**	**100**
Temperature (°C)	**-20**	0.020	0.030	0.035	0.038	---	---
	0	0.12	0.15	0.16	0.18	0.20	0.21
	20	0.45	0.49	0.54	0.59	0.64	0.66
	50	2.07	2.27	2.48	2.67	2.87	2.96
	100	14.81	15.78	16.75	17.72	18.57	19.06

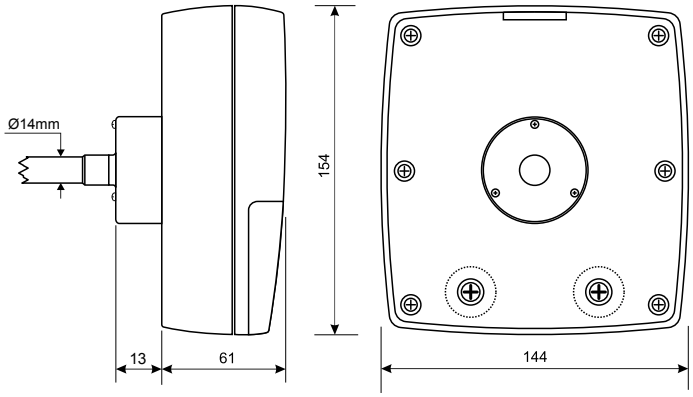
Accuracy of the mixing ratio (g/kg)

		Relative Humidity (%)					
		10	**30**	**50**	**70**	**90**	**100**
Temperature (°C)	**-20**	0.020	0.022	0.026	0.029	---	---
	0	0.09	0.11	0.12	0.13	0.15	0.15
	20	0.37	0.41	0.46	0.51	0.55	0.58
	50	2.04	2.32	2.61	2.90	3.25	3.42
	100	19.06	36.00	75.9	228.9	---	---

Dimensions



Versions HD2817Tx.Dx for vertical probes TV or with cable TC



Version HD2817TOx.Dx for horizontal probes

Ordering codes

HD2817T...: Transmitter, indicator, and ON/OFF regulator for temperature and humidity, with data logging functions. Fitted with 2 analogue current outputs (0...20mA and 4...20mA) or voltage outputs (0...10Vdc and 2...10Vdc). RS232/RS485 serial ports for connection to PC. **Uses interchangeable SICRAM2 probes** with microprocessor for the storage of the probe's calibration data. **Visualizes the data on a large graphic backlit LCD.** Power supply 24Vac/dc or universal 90...240Vac. Includes software DeltaLog12, instructions manual. (Transmitters without display are supplied with serial cable RS27).

Power supply, type of probe and accessories have to be specified at the moment of placing the order.

Models with vertical probe (S.TV) or separated probe with cable (S.TC)

HD2817T.D0: Model without relay.

HD2817T.DR: Model with configurable control relays (2) and alarm relay (1).

Models for horizontal duct probe (S.TO)

HD2817TO.D0: Model without relay.

HD2817TO.DR: Model with configurable control relays (2) and alarm relay (1).

Interchangeable temperature and humidity probes with SICRAM2 module, vertical S.TV or with cable S.TC

S.TV: Vertical probe. Length of stem 130mm.

The material of the S.TC...probes can be chosen between stainless steel AISI304 or POCAN plastic material.

S.TC1.2: Probe with cable. Length of stem 130mm, length of the cable 2m.

S.TC1.2P: Probe with cable. Length of stem 130mm, length of the cable 2m. Made of POCAN.

S.TC1.5: Probe with cable. Length of stem 130mm, length of the cable 5m.

S.TC1.5P: Probe with cable. Length of stem 130mm, length of the cable 5m. Made of POCAN.

S.TC1.10: Probe with cable. Length of stem 130mm, length of the cable 10m.

S.TC1.10P: Probe with cable. Length of stem 130mm, length of the cable 10m. Made of POCAN.

S.TC2.2: Probe with cable. Length of stem 330mm, length of the cable 2m.

S.TC2.2P: Probe with cable. Length of stem 330mm, length of the cable 2m. Made of POCAN.

S.TC2.5: Probe with cable. Length of stem 330mm, length of the cable 5m.

S.TC2.5P: Probe with cable. Length of stem 330mm, length of the cable 5m. Made of POCAN.

S.TC2.10: Probe with cable. Length of stem 330mm, length of the cable 10m.

S.TC2.10P: Probe with cable. Length of stem 330mm, length of the cable 10m. Made of POCAN.

Interchangeable temperature and humidity probe with SICRAM2 module, horizontal S.TO

S.TO1: Horizontal probe for instrument HD2817TO.xx. Length of stem 130mm.

S.TO2: Horizontal probe for instrument HD2817TO.xx. Length of stem 330mm.

Accessories

RS27: RS232 null-modem serial connection cable with 9 poles sub-D 9 female connector and 3 pole connector for COM AUX port. (Included in the supply of the instruments without display).

DeltaLog12: Further unit of software for PC connection, data download, instrument setup, and management of an instrument network. For operative systems Windows® 98 to XP.

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

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

To version with disconnected probe

HD9008.21.1: Flange with support, ∅ 26mm hole for the installation of S.TC probes in vertical position, 250mm distance from the wall. The probes of the series S.TC require the adapter HD9008.26/14 from ∅ 26mm to ∅ 14mm.

HD9008.21.2: Flange with support, ∅ 26mm hole for the installation of S.TC in vertical position, 125mm distance from the wall. The probes of the series S.TC require the adapter HD9008.26/14 from ∅ 26mm to ∅ 14mm.

HD9008.26/14: Adapter from ∅26mm to ∅14mm for the supports HD9008.21.1 and HD9008.21.2, for probes of the series S.TC.

HD9008.31: Wall flange with cable outlet to fix probes with ∅ 14mm.

PG16: Stainless steel gland (AISI304) for probes with ∅ 14mm.

P5: Stainless steel grid protection for probes ∅ 14mm.

P6: 20µ sintered stainless steel protection for probes ∅ 14mm.

P7: 10µ PTFE protection for probes ∅ 14mm.

P8: Stainless steel grid and Pocan protection for probes ∅ 14mm.

HD2817 Tx . D x

Relay
0 = without relay
R = with relay

Probe type
T = Model for vertical probe or with cable (S.TV, S.TC)
TO = Model for horizontal probe (S.TO)

Manufacture of portable and bench top instruments
Current and voltage loop transmitters
Temperature - Humidity - Pressure
Air speed - Light - Acoustics
pH - Conductivity - Dissolved Oxygen - Turbidity
Elements for weather stations - Thermal Microclimate

SIT CENTRE N°124
Temperature - Humidity - Pressure - Air speed
Photometry/Radiometry - Acoustics

CE CONFORMITY
- Safety: EN61000-4-2, EN61010-1 Level 3
- Electrostatic discharge: EN61000-4-2 Level 3
- Electric fast transients: EN61000-4-4 livello 3, EN61000-4-5 Level 3
- Voltage variations: EN61000-4-11
- Electromagnetic interference sucseptibility: IEC1000-4-3
- Electromagnetic interference emission: EN55020 class B

RoHS 2002/95/EC

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