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# HD2817T..., TRANSMITTER, INDICATOR, ON/OFF REGULATOR, TEMPERATURE AND HUMIDITY DATA LOGGER WITH INTERCHANGEABLE PROBE

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.

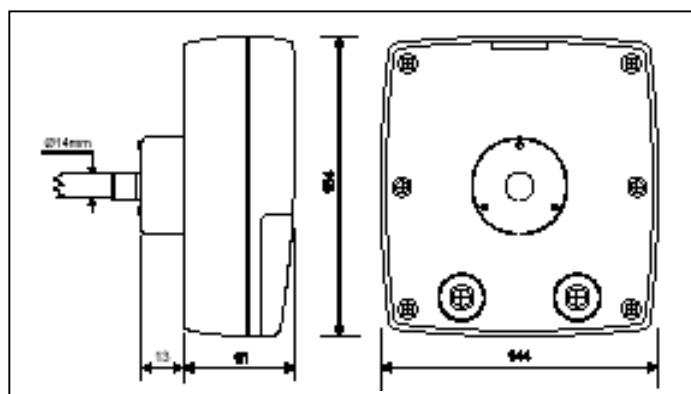
### Technical specifics (@ 24Vac and 20°C)

Power supply	2 versions	24Vcc / 24Vca 50..60 Hz $\pm 10\%$
		90...240Vca 50...60 Hz
	Average consumption	3W
Datalogger	Storage capacity	9000 samples in max. 256 sessions
	Storage type	Circular memory
	Stored parameters	Temperature, relative humidity, dew point, absolute humidity, mixing ratio, analog outputs 1 and 2, relay status1, 2, 3.
	Storage interval	1, 2, 5, 10, 20, 60 seconds. 2 and 4 mi.
Real time clock	Type	Real time with Lithium buffer battery
	Accuracy	$\pm 1$ min./moth
Software		DeltaLog 12 (W98 a XP)
Visualizador	Graphic backlit LCD	128 x 64 pixel
Ambient working conditions of the electronics	Operating temperature	-20 to 60 °C
	Relative humidity	0 a 90 % no condensate
	Static working pressure of the sensors	12 bar max
	Storage temperature	-30 to 80 °C
Housing	L x H x W	143 x 154 x 61 mm
	Weight	600g
	Material	ABS

# Technical specifics (@ 24Vac and 20°C)

Input		
Temperature	Sensor	Pt100 class 1/3DIN
	Working range of the sensor	-50 to 200 °C -58 to 232 °F
Humidity	Relative humidity	5 to 98 %HR
	Working range of the sensor in temp.	-50 to 150 °C On request up to 180 °C
	Dew point TD	-50 to 100 °C
	Absolute humidity	0 to 600 gr/m <sup>3</sup>
	Mixing Ratio	0 to 2000 g/kg of dry air
Accuracy of the measured physical quantities	Temperature Pt100	± 0,25 °C
	Relative humidity	± 2,5 %HR (5 to 90 %HR) ±3 %HR (90 to 98 %HR)
Accuracy of the calculated physical quantities	See table	
Response time		3min with grid protection (at 20°C and 0.5m/s)

Outputs		
Communications	Type	RS232C , RS 485 Multidrop
	Baud Rate	9600 baud 57600 baud non permanent
Physical quantities	Measured	Temperature Relative humidity
	Calculated	Absolute humidity Mixing ratio Dew point
Analog outputs	Number	2
	Types	4..20 mA; 0..20 mA 0..10 Vcc; 2..10Vcc
	Load resistance	Current output 500Ω Max Voltage output 100kΩ Max
	Resolution	16 bit
	Accuracy	±0,05% f.s. @ 20°C
	In case of measuring error (exceeding of the operating limits, faulty or not connected)	I = 22 mA V = 11V
Relay	Working relay	2 x 3A/250Vac Load resistance, 1 change-over contact
	Alarm relay	1 x 3A/250Vac Load resistance, 1 with normally open contact



## 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)

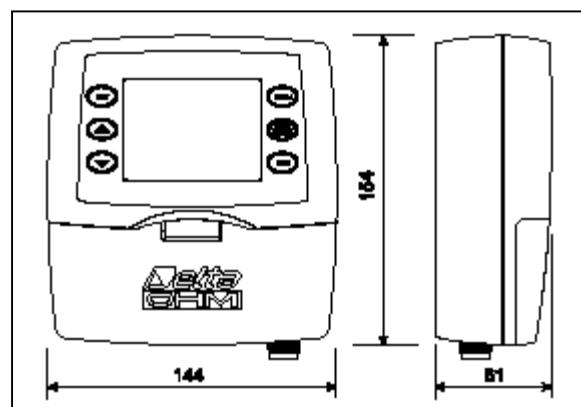
Relative humidity (%)							
		10	30	50	70	90	100
Temperature °C	-20	2,50	1,00	0,71	0,58	--	--
	0	2,84	1,11	0,78	0,64	0,56	0,50
	20	3,34	1,32	0,92	0,75	0,64	0,62
	50	4,16	1,64	1,12	0,90	0,77	0,74
	100	5,28	2,07	1,42	1,13	0,97	0,91

## 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	--	--



**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.**

**HD2817T.D0:** Model without relay.

### Models for horizontal duct probe (S.TO)

**HD2817TO.D0:** Model without relay.

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

### Interchangeable temperature and humidity probe with SICRAM2 module, horizontalS.TO

HD2817 Tx.                    x                    x  
    Relay  
    O = Without relay  
    R = With relay

   Display  
    O = Without display  
    D = With display LCD

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



## 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  $\varnothing$  14mm and  $\varnothing$  26mm.

**HD33:** 33%RH saturated solution for checking the relative humidity sensor, complete with thread for probes  $\varnothing$  14mm and  $\varnothing$  26mm

**HD9008.21.1:** Flange with support,  $\square$  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  $\varnothing$  26mm to  $\varnothing$  14mm.

**HD9008.21.2:** Flange with support,  $\square$  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  $\varnothing$  26mm to  $\varnothing$  14mm.

**HD9008.26/14:** Adapter from  $\varnothing$  26mm to  $\varnothing$  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  $\varnothing$  14mm. PG16: Stainless steel gland (AISI304) for probes with  $\varnothing$  14mm.

**P5:** Stainless steel grid protection for probes  $\varnothing$  14mm.

**P6:** 20 $\mu$  sintered stainless steel protection for probes  $\varnothing$  14mm.

**P7:** 10 $\mu$  PTFE protection for probes  $\varnothing$  14mm.

**P8:** Stainless steel grid and Pocan protection for probes  $\varnothing$  14mm.

