

QUICK GUIDE

HTP501 - Humidity/Temperature Probe with Modbus RTU

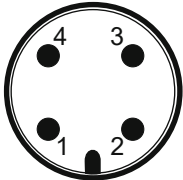
Find this document and further product information on our website at www.epluse.com/htp501.

Electrical Connection



Important note:

The manufacturer cannot be held responsible for personal injuries or damage to property as a result of incorrect handling, installation, wiring, power supply and maintenance of the device.



M12 device plug front view

Pin number	Function
1	Supply voltage 24 V DC class III ⚡ (Europe)/class 2 (North America)
2	RS485 B (D-)
3	GND
4	RS485 A (D+)

Modbus Setup

	Factory settings	Selectable values
Baudrate	9600	9600, 19200, 38400, 57600, 115200
Data bits	8	8
Parity	Even	None, even, odd
Stop bits	1	1, 2
Modbus address	69	1...247

The recommended settings for multiple devices in a Modbus RTU network are 9600, 8, Even, 1. The HTP501 represents 1 unit load in a Modbus network.

Device address, baud rate, parity and stop bits can be set via:

1. PCS10, Product Configuration Software and the appropriate configuration cable HA011018. The PCS10 can be downloaded free of charge from www.epluse.com/pcs10.
2. Modbus protocol in the register 60001 (0x00) and 60002 (0x01).
See Application Note Modbus AN0103 (available at www.epluse.com/htp501).

The serial number in ASCII format is located at read register address 30001-30008 (16 bits per address). The firmware version is located at register address 30009 (bit 15...8 = major release; bit 7...0 = minor release). The sensor name is located at register address 30010.

Communication settings (INTEGER 16 bit)		
Parameter	Register number ¹⁾ [DEC]	Protocol Address ²⁾ [HEX]
Write register: function code 0x06		
Modbus address (Slave ID)	1	0x00
Modbus protocol settings ³⁾	2	0x01
Device information (INTEGER 16 bit)		
Parameter	Register number ¹⁾ [DEC]	Protocol Address ²⁾ [HEX]
Read register: function code 0x03 / 0x04		
Serial number (as ASCII)	1	0x00
Firmware version	9	0x08
Sensor Name	10	0x09
Status/Error	602	0x259
Application Parameter (FLOAT 32 bit)		
Parameter	Register number ¹⁾ [DEC]	Protocol Address ²⁾ [HEX]
Read and write register: Read function code 0x03 / Write function code: 0x10		
Air pressure ⁴⁾	5001	0x1388

1) Register number starts from 1.

2) Protocol address starts from 0.

3) For Modbus protocol settings see Application Note Modbus AN0103 (available on www.epluse.com/htp501).

4) Ambient pressure in mbar, with 2 decimal digits (e.g. 1008.25), factory setting: 1013.25 mbar

Modbus Register Map

FLOAT 32 bit:			
Parameter	Unit	Register number ¹⁾ [Dec]	Register address ²⁾ [HEX]
Read register: function code 0x03 / 0x04			
Temperature T	°C	1003	0x3EA
	°F	1005	0x3EC
	°K	1009	0x3F0
Relative humidity RH, Uw	% RH	1021	0x3FC
Water vapour partial pressure e	mbar	1101	0x44C
	psi	1103	0x44E
Dew point temperature Td	°C	1105	0x450
	°F	1107	0x452
	°K	1147	0x47A
Wet bulb temperature Tw	°C	1109	0x454
	°F	1111	0x456
	°K	1145	0x478
Absolute humidity dv	g/m ³	1113	0x458
	gr/ft ³	1115	0x45A
Mixing ratio r	g/kg	1121	0x460
	gr/lb	1123	0x462
Specific enthalpy h	[kJ/kg]	1125	0x464
	[ft lbf/lb/kg]	1127	0x466
	[BTU/lb]	1129	0x468
Frost point temperature Tf	°C	1131	0x46A
	°F	1133	0x46C
	°K	1149	0x47C
Ice bulb temperature Ti	°C	1237	0x4D4
	°F	1239	0x4D6
	°K	1241	0x4D8

1) Register number starts from 1

2) Register address starts from 0

Installation



Please note:

For accurate measurement it is essential that the temperature of the probe body and the sensing head is the same as the temperature of the air to measure. Avoid mounting the HTP501 in a way which creates temperature gradients along the probe.

- The device and mainly the sensing head shall not be exposed to extreme mechanical stress.
- The device must be operated with the filter cap on at all times. Do not touch the sensing element inside the sensing head.
- While replacing the filter cap (because of pollution for instance) against an original E+E spare one please take very good care to not touch the sensing elements.

INFORMATION

+43 7235 605 0 / info@epluse.com

E+E Elektronik Ges.m.b.H.
Langwiesen 7 • 4209 Engerwitzdorf • Austria
Tel: +43 7235 605-0 • Fax: +43 7235 605-8
info@epluse.com • www.epluse.com

LG Linz Fn 165761 t • VAT No. ATU44043101
Place of Jurisdiction: 4020 Linz • DVR0962759

