

# STH 304 Remote Mount High-Temperature T+RH Transmitters

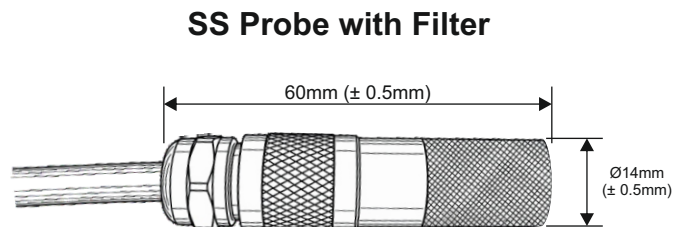
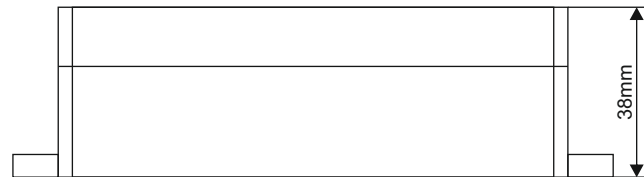
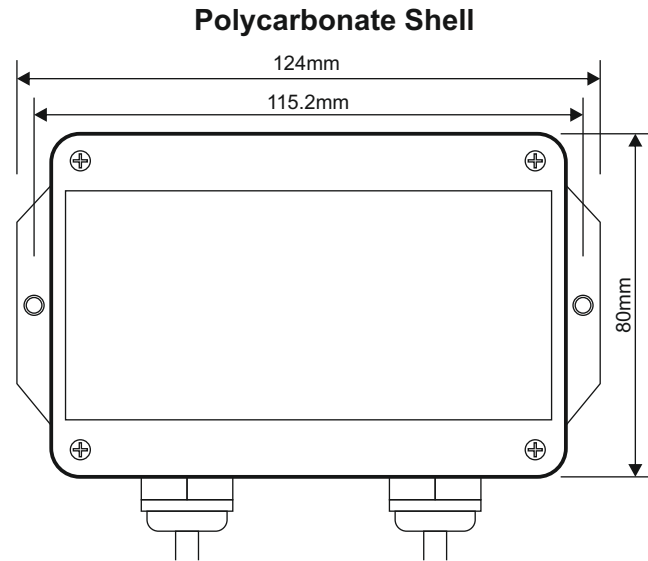
## Installation Manual

**PPI**

101, Diamond Industrial Estate, Navghar,  
Vasai Road (E), Dist. Palghar - 401 210.  
Sales : 8208199048 / 8208141446  
Support : 07498799226 / 08767395333  
E: sales@ppiindia.net, support@ppiindia.net

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### ► Dimensions (mm)



### ► Wiring Instructions

Function	Wire Color	Signal Description
<b>Power Supply</b>	Red	+VDC Supply Input
	Black	Supply Common (GND)
<b>Analog (mA/V) Temperature Output</b>	Brown	Temperature Signal (+)
	Blue	Temperature Signal Return (-)
<b>Analog (mA/V) Humidity Output</b>	Grey	Humidity Signal (+)
	White	Humidity Signal Return (-)
<b>Digital RS485 MODBUS RTU</b>	Yellow	A+
	Green	B-

### ► MODBUS COMMUNICATION (RS485 RTU)

#### Setting Device ID & Baud Rate

The Transmitter is supplied with default device ID = 1 & baud rate = 9600 bps. To change device ID and / or baud rate observe the below points :

- Change one parameter at a time.
- Use function code = 6 (write single holding register).
- Use device ID = 0.
- Use parity = None.
- Use the existing set baud rate value.
- Power cycle the transmitter for the changes to take effect.

#### 1. Setting Device ID

MODBUS Address : 0x0100 (256).

Settable Range : 1 to 247.

The example code below shows setting the device ID = 8.

Device ID	Function Code	Register Address (H, L)		Data (H, L)		CRC-16 (L, H)	
0x00	0x06	0x01	0x00	0x00	0x08	0x88	0x21

## 2. Setting Baud Rate

MODBUS Address : 0x0101 (257).

Settable Range : 1 = 1200 bps, 2 = 2400 bps, 3 = 4800 bps,  
4 = 9600 bps, 5 = 19200 bps, 6 = 115200 bps.

The example code below shows setting the baud rate = 9600 bps.

Device ID	Function Code	Register Address (H, L)		Data (H, L)		CRC-16 (L, H)	
0x00	0x06	0x01	0x01	0x00	0x04	0xD9	0xE4

## Reading Temperature & Humidity Values

To read the temperature & humidity values follow the below rules :

- Use function code = 3 (read one or more input registers).
- Use the existing set device ID value.
- Use parity = None.
- Use the existing set baud rate value.

Parameter	Address	Data Type	Description
Temperature (0.01 °C resolution)	0	16-Bit Signed Integer	0.01 °C Resolution. Examples : 0x0B2E = 28.62 °C 0xFBFF = -10.25 °C
Humidity (0.01 % resolution)	1	16-Bit Signed Integer	0.01% Resolution. Example : 0x129D = 47.65%
Temperature (0.1 °C resolution)	4	16-Bit Signed Integer	0.1 °C Resolution. Examples : 0x011E = 28.6 °C 0xFF9A = -10.2 °C
Humidity (0.1 % resolution)	5	16-Bit Signed Integer	0.1% Resolution. Example : 0x01DC = 47.6%
Sensor Status	3 & 7	16-Bit Signed Integer	0 = OK, 1 = Fault

### Example :

Reading Temperature & Humidity values with 0.1 °C and 0.1 %RH resolution from the transmitter with device ID = 1.

### Query

Device ID	Function Code	Register Address (H, L)		Quantity (H, L)		CRC-16 (L, H)	
0x01	0x03	0x00	0x04	0x00	0x02	0x85	0xCA

Response : Temperature = 27.1 °C & Humidity = 49.0 %RH

Device ID	Function Code	Data Byte Counts	Temp Value (H, L)	%RH Value (H, L)		CRC-16 (L, H)	
0x01	0x03	0x04	0x01 0x0F	0x01	0xEA	0x4B	0xD3

