SERRATA
INSTRUMENTS

HPT-O-330-A
HPT-O-330-D
Atmospheric Temperature, Humidity and Pressure Sensor

Atmospheric Temperature, Humidity & Pressure Sensor is a professional measurement of air temperature, relative humidity & barometric pressure. Sensors are built-in the water-proof and anti-UV shelter. It is widely used in agriculture, forestry, meteorology as well as a climate chamber, warehousing and other places.

FEATURES

- High Sensitivity
- Fast response time
- Long service life
- Low consumption
- Good stability of output

Parts:

1. Sensor:1
2. Radiation shield and bracket(optional):1
3. Clamp(optional):1

SPECIFICATIONS

Item	Technical Specification		
	Temperature	Humidity	Pressure
Range	-40-60℃	0-100%RH	600-1100 hPa
Resolution	0.1℃	0.5%RH	0.1 hPa
Accuracy	±0.5℃	±3%RH	±1hPa
Long term stability	<0.1℃/year	<0.5%RH/year	<0.1mbar/year
Supply	Mark on the label		
Output Signal	3 x 4-20mA or Rs485 Modbus		
Current Consumption	<40mA(current output)		
Operating Temperature	-40℃-+80℃		
Ingress Protection	IP65		
Storage	10-60℃@20%-90%RH		
Weight(unpacked)	700g		
Shelter material	Anti-UV engineering plastics		

OUTPUT CHARACTERISTICS

- **Current**

T=(I-4)/16*100-40, (where T = temperature(℃),I = output current(mA))

H=(I-4)/16*100%, ((where H = humidity(RH),I = output current(mA)))

MOUNTING

- Install the product in stable environment area, avoid direct sunlight, away from windows air-conditioning, heating and other equipment. Otherwise it will cause measurement inaccuracies.
- Fixing rail is optional.

ELECTRICAL CONNECTIONS

Cable	Current (3 x 4-20 mA)	Cable	RS485
Red	V+	Red	V+
Brown	T-Signal	Yellow	RS485A/RXD
Black	V-	Black/Blue	V-
White	H-Signal	Green	RS485B/TXD
Yellow	P-Signal		

Note: This product has been tested and complies with European CE requirements for EMC directive.

WARRANTY

This product is warranted to be free of defects in materials and construction for a period of 12 months from date of lead time.

Liability is limited to repair or replacement of defective item.

Communication Protocol（MODBUS）

Transmission mode: MODBUS-RTU,**Baud rate:** 9600bps,**Data bits:**8,**Stop bit:**1,**Check bit:**no

Slave address:the factory default is01H (set according to the need,00H to FCH)

- **The 03H Function Code Example: Read The Atmospheric Temperature, Humidity & Pressure**

Host Scan Order(Slave addr:0x01):

01 03 00 00 00 03 05CB

Slave Response:

01 03 06 01 21 0164 2728 C76E

Temperature:(0121)H=(298)D,289**/10**=28.9(℃)

Humidity:(0164)H=356(D), 356**/10**=35.6%)

Pressure:(2728)H=10024(D),10024**/10**=1002.4(mbar)

- **The 03H Function Code Example: Read The Atmospheric Temperature & Humidity**

Host Scan Order(Slave addr:0x01):

01 03 00 00 00 02 C40B

Slave Response:

01 03 04 0114 0164 BBB0

Temperature:(0114)H=(276)D,276**/10**=27.6(℃)

If the data≧0x8000, for example:0xFF05,according to the following method to calculate：

0xFF05-0xFFFF-0x01=(65285)D-(65535)D-(1)D=(-251)D,-251/10=-25.1(℃)

Humidity:(0164)H=356(D),356**/10**=35.6(%)

- **The 03H Function Code Example: Read The Atmospheric Temperature**

Host Scan Order(Slave addr:0x01):

01 03 00 00 00 01 840A

Slave Response:

01 03 02 0114 B9DB

Temperature:(0114)H=(276)D,276**/10**=27.6(℃)

- **The 06H Function Code Example: Modify the slave address(fixed command,ensure that no other devices on the bus)**

Host Scan Order (Changed 01H to 02H):

01 06 00 00 00 02 08 0B

Slave Response:

01 06 00 00 00 02 08 0B

If you forget the original address, you should use the broadcast address(FEH) (ensure that no other devices on the bus at this time).

Note:

1. All underlined is fixed bit;

2. The last two bytes is CRC check command.

CE Complies with applicable CE directives.

Manual subject to change without notice. Version 2.0