HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

HTE201

Highly Accurate RH + T Measurement

Range Selection

IP30

IP30 Protection

User Programmable Parameter & Unit

RTD Pt100/Pt1000 temperature measurement option

Dual Row LCD Display

radix®

HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

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HTE201 Transmitter can be used for the different parameters given below :

RH+T TRANSMITTER

RH & DEWPOINT TRANSMITTER

SUMMER SIMMER INDEX TRANSMITTER

LINEARISED OUTPUT CORRESPONDING TO ENTHALPY

WATER VAPOUR PRESSURE & SATURATED WATER VAPOUR PRESSURE

ABSOLUTE HUMIDITY TRANSMITTER

HEAT INDEX

LINEARISED OUTPUT CORRESPONDING TO MIXING RATIO

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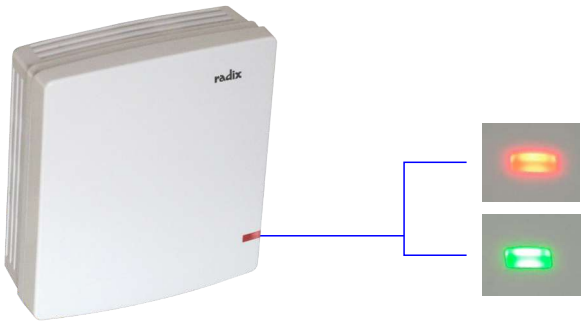
HTE201

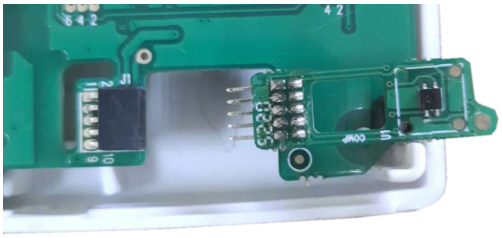
HEALTH/STATUS LED



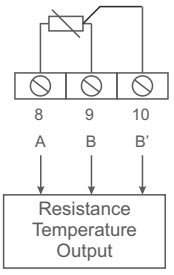
DUAL ROW DISPLAY

STYLISH HOUSING WITH VENTS FOR AIR FLOW ACROSS SENSOR FOR BETTER ACCURACY

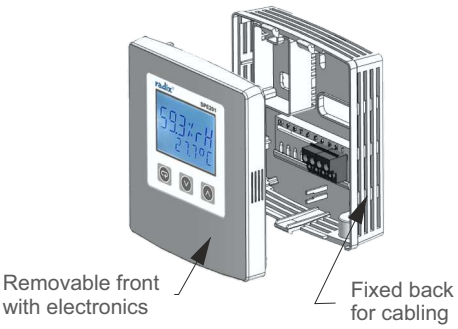
REPLACEABLE RH+T SENSOR



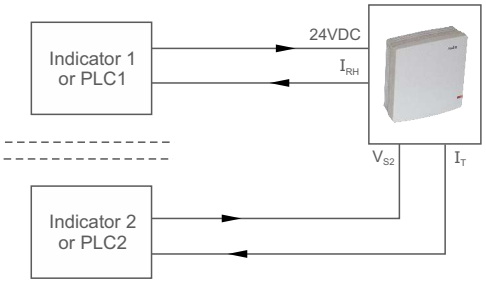
THERMISTOR / RTD Pt100/Pt1000 RESISTANCE TEMPERATURE OUTPUT OPTION



2-PART HOUSING WITH FIXED BACK & REMOVABLE ELECTRONICS FOR CONVENIENT INSTALLATION



4~20 mA ISOLATED OUTPUTS FOR RH & T



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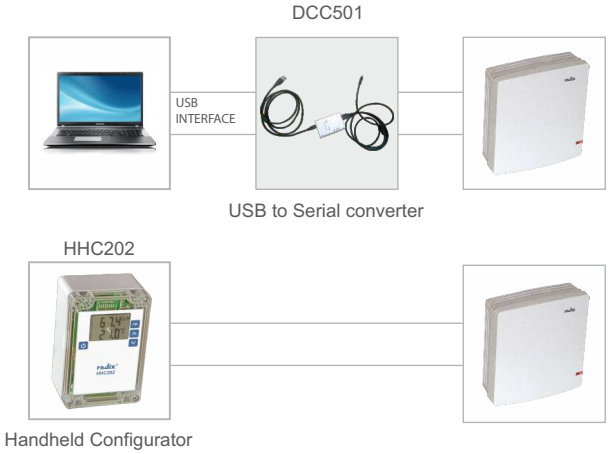
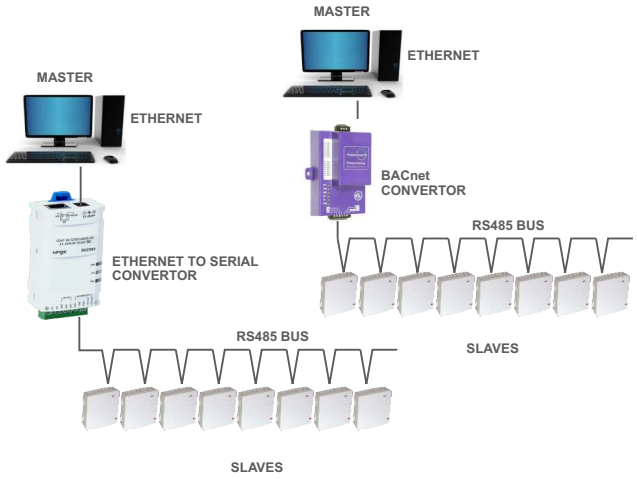
PARAMETER CONFIGURATION

Using Handheld Configurator / PC Based Configurator



COMMUNICATION : RS485 / MODBUS RTU BACnet MS/TP



DIP selectable slave addresses upto 32

ABOUT HTE201

HTE201 accurately measures humidity using capacitive sensor technology & temperature using band gap sensor technology or RTD.

It gives one or two, 2-wire, loop powered outputs, or 0~10V DC outputs that can be assigned to RH, T or Dewpoint using keys or PC based configurator. Temperature output can be an analog output or a resistance output from Class A RTD, Pt100, Pt1000 or Thermistor output.

HTE201 supports MODBUS RTU or BACnet MS/TP communication.

APPLICATIONS

- Commercial buildings
- Outdoor temperature and relative humidity reference
- Greenhouses
- Swimming halls
- Storage rooms & cooling chambers
- Air economizers, Air quality

HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

HTE201

SPECIFICATIONS

All specifications at ambient of 25 °C, unless specified otherwise

INPUTS	
Integral sensor type	a. Smart Sensor for RH and/or temperature
	b. i) Smart Sensor for RH ii) RTD : Pt100 / Pt1000, Class A
INDICATION	
Display	Dual row LCD display
Digits	6-digit, 10.5 mm height
	7-digit, 6.94 mm height
Resolution	1 & 0.1 for RH (<100%RH), Temperature and Dewpoint
Backlight	Enable/Disable option
LED indication (if no display provided)	Green : Successful RH+T measurement
	Red : Sensor failure
OUTPUTS	
Analog output	4~20 mA loop powered, max load 800 Ω @ 24V DC
	0~10V DC, Load > 1K (0~1V DC, 0~5V DC outputs available on request)
Resistance output	Resistance output for Various Thermistors and RTD sensors Pt100/Pt1000)
ACCURACY	
RH	± 2% RH, ± 3% RH
	See Fig 1, Table 1 and ordering information
Temperature	± 0.5 °C for bandgap temperature sensor,
	± 0.2 °C for RTD
Dewpoint	±1 °C
ELECTRICAL CONNECTION	
Removable screw terminal block suitable for cable 14~22 AWG	
Torque	4kgf.cm / M2.5
COMMUNICATION	
Port	RS485
Protocol	MODBUS RTU
	BACnet MS/TP
Slave ID	User programmable (1~247) for RS485
	Autodetect for BACnet
Supported baud rate	4800, 9600, 19200, 38400, 57600, 115200 for RS485
	Autodetect baudrate for BACnet
ISOLATION	
Mutual isolation between supply and RS485 output	1000V AC RMS, 50 Hz / 1 second, 500 V / minute

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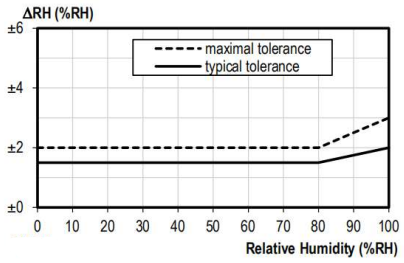
SPECIFICATIONS

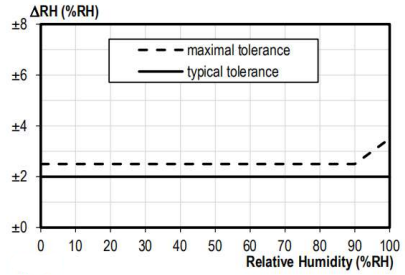
All specifications at ambient of 25 °C, unless specified otherwise

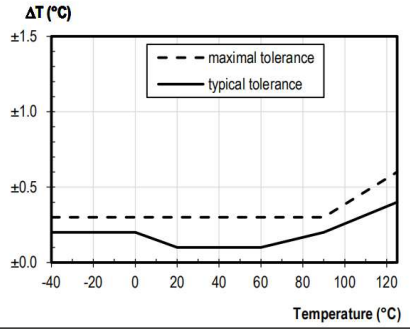
PERFORMANCE		
Response time	RH : 8 seconds for $t_{63\%}$	
	T : 5 to 30 seconds for $t_{63\%}$	
Hysteresis	± 1 %RH	
Repeatability	± 0.1 %RH & ± 0.1 °C	
Long term drift (for RH+T sensor)	RH : <0.25 %RH/yr	
	T : <0.02 °C/yr	
Environment	Air & Neutral gas	
Temperature effect on accuracy	± 0.5% of span / 25 °C	
Supply voltage effect	± 0.002% of span / V	
Supply ripple effect, 50/60 Hz, 5 Vp - p	± 0.005% of span	
POWER SUPPLY		
4~20 mA loop powered models	8~30V DC, < 200 mW power consumption	
0~10V DC output models	18~30V AC/DC, < 1 W power consumption	
TEMPERATURE, HUMIDITY		
Parameters	**Operating Range**	**Storage Range**
RH	0~100 %RH	0~100 %RH non-condensing
Temperature & Dewpoint	-40~50 °C (-40~122 °F) without display	-40~70 °C (-40~158 °F) without display
Temperature & Dewpoint	-5~50 °C (23~122 °F) with display	-20~70 °C (-4~158 °F) with display
MECHANICAL		
Dimensions	See Fig 2	
Mounting	Wall mount	
Material	Polycarbonate (White)	
Protection	IP30	
PROGRAMMABLE PARAMETERS		
Unit		
Range		
Offset		
Output assignment		
Backlight enable/disable		
Resolution		
CERTIFICATION		
Directive 2011/65/EU RoHS Compliant		

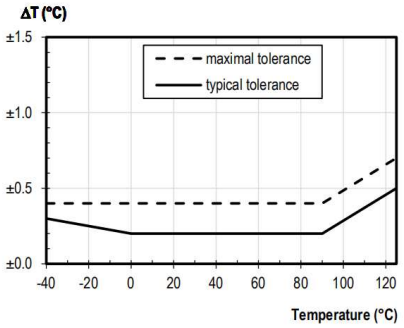
ACCURACY OF RH & T

Fig 1









For 2810 XXXXX2X order code (2% RH)

For 2810 XXXXX3X order code (3% RH)

TABLE 1

Sr. No.	Order Code	Accuracy
1	2% : 2810 xxxxxx2x	±1.5% (10 to 90 %RH), ±3% (5 to 10%, 90 to 95 %RH)
2	3% : 2810 xxxxxx3x	±2% (10 to 90 %RH), ±3% (5 to 10%, 90 to 95 %RH)

HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

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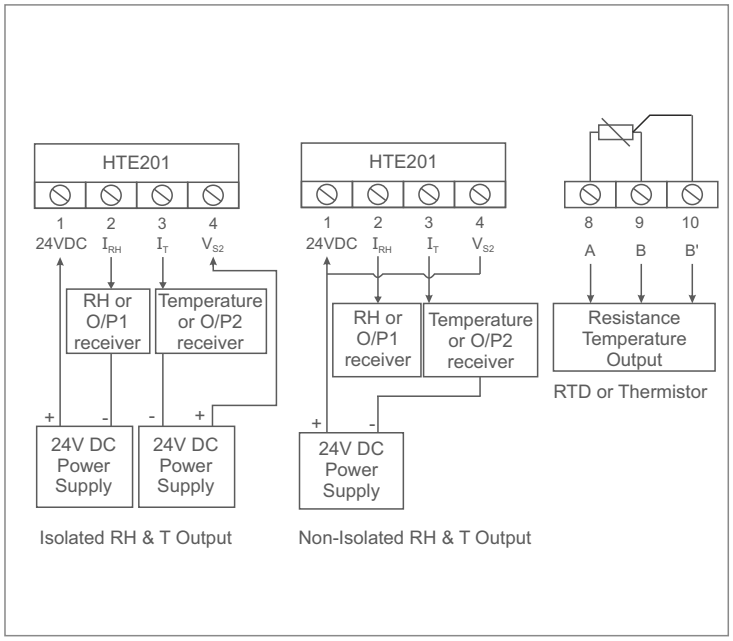
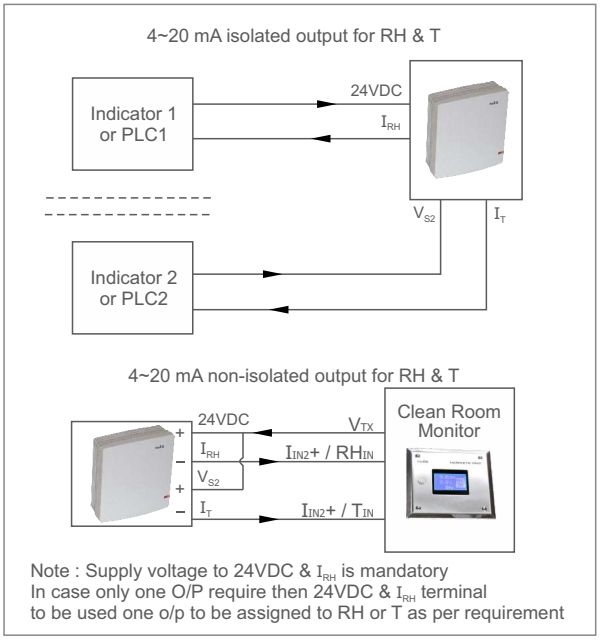
CONNECTION DIAGRAMS

4~20 mA loop powered

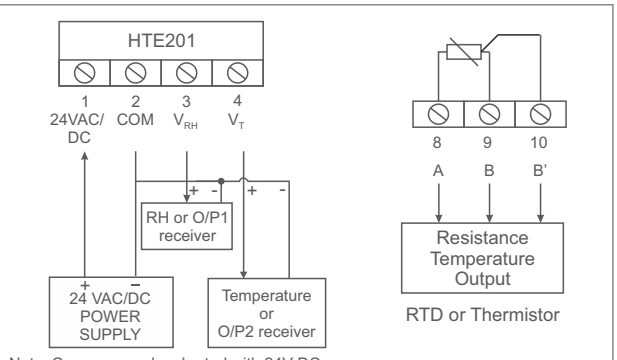




Note : Supply voltage to 24VDC & I_{RH} is mandatory
In case only one O/P require then 24VDC & I_{RH} terminal to be used one o/p to be assigned to RH or T as per requirement

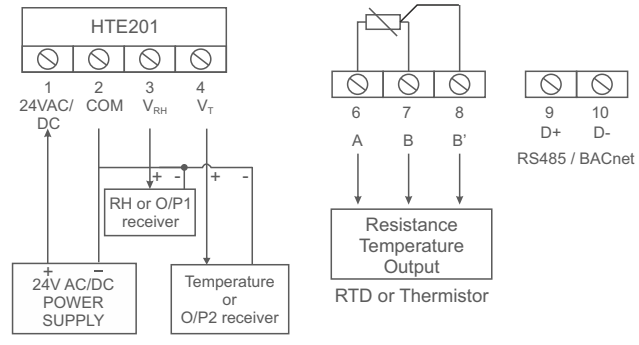
Voltage Output

2810xxx2xx1 (Voltage output without RS485)

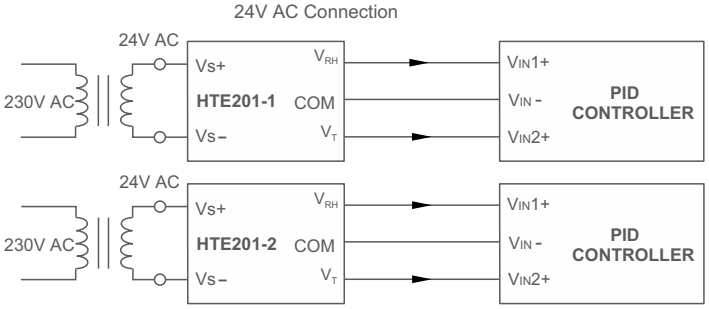


Note: Common can be shorted with 24V DC

2810xxx2xx2 (Voltage output with RS485 / BACnet)



Note: Common can be shorted with 24V DC-



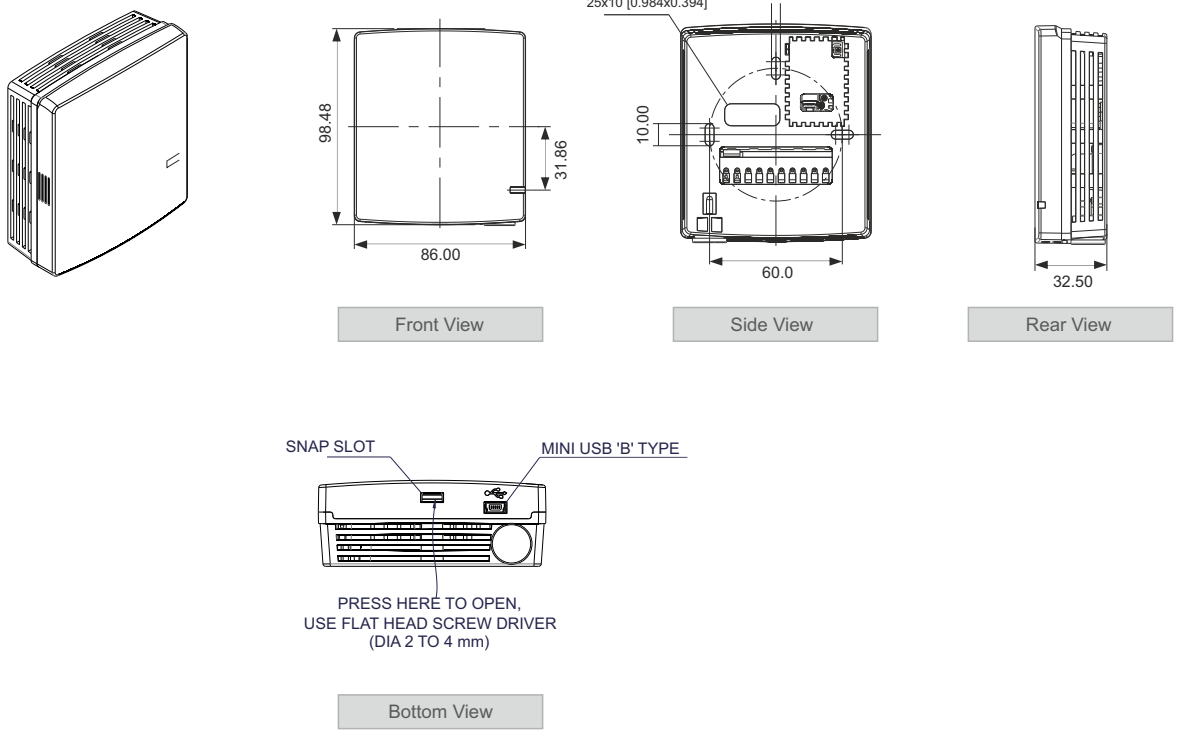
Note : Each HTE201 should have a separate winding or transformer

HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

HTE201

DIMENSIONS mm

Fig 2



FEATURES SUMMARY

- 2 x 2-wire, 4~20 mA or 0~10V DC outputs with RTD resistance output option
- Any or both outputs can be assigned to RH or T or Dewpoint or specific derived physical quantity
- RH & T range selection, parameter configuration and calibration with
  - USB to serial converter (DCC501)
  - Handheld configurator (HHC202)
  - Inbuilt LCD and 3 keys
- Health / status (Heartbeat) LED
- Calculated physical quantities
  - Dewpoint
  - Absolute humidity
  - Heat index
  - Enthalpy
  - Air density
- Isolated RS485 / MODBUS RTU or BACnet MS/TP
- Replaceable RH+T sensor
- Convenient installation with 2-part housing with fixed back and removable electronics
- Stylish housing with vents for air flow across sensor for better accuracy

HUMIDITY / TEMPERATURE / DEWPOINT TRANSMITTER

HTE201

ORDERING INFORMATION

CODE	SPECIFICATIONS	1	2	3	4	5	6	7
2810								
1	**Configuration**							
	RH & Temperature	1						
	RH, Temperature & Dewpoint	2						
	RH, Temperature, Dewpoint, Absolute humidity, Enthalpy, Heat index, Air density etc.	3						
2	**LCD Display**							
	None		N					
	Provided		D					
3	**Temperature Measurement**							
	Smart sensor (Bandgap)			1				
	RTD : Pt100			2				
	RTD : Pt1000			3				
4	**RH Output**							
	4~20 mA loop powered **				C			
	0~10 VDC output				V			
	None				N			
5	**Temperature Output**							
	None					N		
	Analog output (same as RH output)					1		
	Pt100* resistance output					2		
	Pt1000* resistance output					3		
	3000 Ω NTC Thermistor					4		
	10,000 Ω Type 3, NTC Thermistor					5		
	10,000 Ω Type 3, NTC Thermistor, 11K shunt resistor					6		
	20,000 Ω NTC Thermistor					7		
	10,000 Ω Type 2, NTC Thermistor					8		
	1801 Ω NTC Thermistor					9		
	2.252K Ω NTC Thermistor					10		
6	**%RH Accuracy**							
	2%						2	
	3%						3	
7	**Communication**							
	None							N
	MODBUS RTU							R
	BACnet MS/TP							B

* IEC 60751-95, Class A, RTD sensor
* For other RTD resistance outputs, contact sales@radix.co.in

** 4~20 mA loop powered output can not be given if communication output present

CODE-1-2-3-4-5-6-7

Order Code Format : XXXX-X-X-X-X-X-X-X

Example

HTE201, RH & Temperature, Smart Sensor (Bandgap) 4~20 mA loop powered, %RH Accuracy : 2%, 2810-1-N-1-C-N-2-N

CONFIGURATORS

Product	Model	Order Code
USB-to-Serial Converter	DCC501	2555 0
Handheld Configurator	HHC202	2863 1

ENQUIRIES

Instruments : sales@radix.co.in ● + 91 9324934061
Sensors : sensors@radix.co.in ● + 91 9321415829
Gauges : gauges@radix.co.in ● + 91 8591305907
Automation : automation@radix.co.in ● + 91 9320997925
Level : level@radix.co.in ● + 91 8591305907
Flow : flow@radix.co.in ● + 91 8591305907

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