Humidity / Temp Transmitter

Descriptions

Humidity & Temperature transmitters are designed for environment monitoring and controlling in industrial, commercial and other buildings. These transmitters can be used for indoor air temperature and humidity monitoring in various industrial plant, clean room, lab, machine room, office and commercial building, airport, station, library and stadium. The modbus interface is documented and integrator friendly. They also have transducer outputs for connecting as analog inputs to all popular control systems. Various models are available:Duct Mount,Wall Mount,Room Mount and 2 meter cable.BACnet MS/TP and

HUM-W   HUM-D

Highlights

• High performance digital sensors and circuits, ensure accurate measurement and temperature compensation
• Good long term stability and reliability
• 100% field changeable sensors, no re-calibration needed
• Fast response
• Multiple output signals selectable: 4-20mA, 0-5V or 0-10V
• Display in degrees Fahrenheit or Celsius (connection to Modbus)
• HUM-C is same as HUM-W but with extended cable to connect the sensor
• Featured as pluggable sensor pipe
• Dew point and enthalpy can be configured by register list
• BACnet MS/TP and Modbus RTU protocols over RS485,with an ethernet port.

HUM-C

Specifications

General	
Power	15 to 24V AC or DC, ±10%
Current Output Load	< 500Ω
Display	LCD screen for wall outdoor / room mount and duct mount
Display Resolution	0.1°C, 0.1% RH
Temperature Limit	-30~70°C, 0~95% RH(Non condensing)
Plastic Housing	Flammability rating UL 94HB
Connector	UL File E365137, Vol. 1
Protection	IP65, outdoor rated for duct and wall mount models; IP30 for room mount
Filter	Sintered Stainless steel, 60um pore size

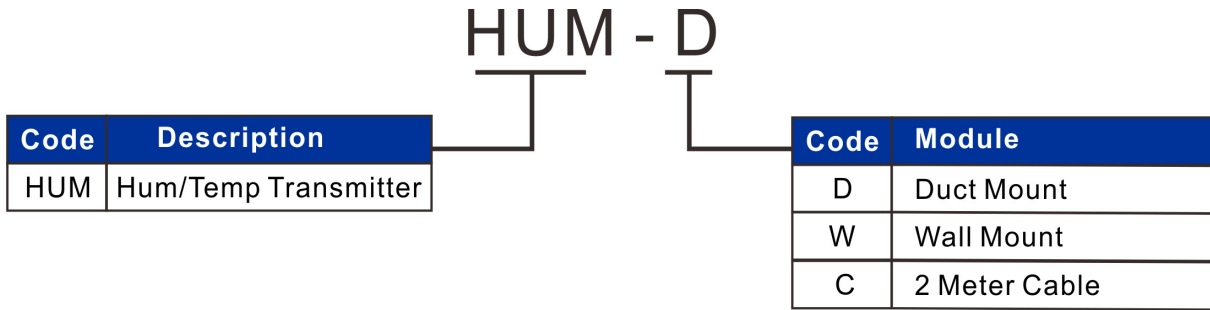|	Relative Humidity	Temperature
Sensor	Capacitance polymer	10K internal
Range	0~100% non condensing	-30~70°C(-22~158°F)
Output	4-20mA, 0-5V or 0-10V, RS 485	4-20mA, 0-5V or 0-10V, RS 485
Accuracy	3% RH (25°C, 20~80% RH)	< ±0.5°C @ 25°C
Hysteresis	< ±1% RH	
Response time	< 10s (25°C, in slow air)	
Drift	< ±0.5% RH / year	

Humidity / Temp Transmitter

Note:

1. The default setting for the transducers is 0 to 10V, over the range 0 to 100 Degrees C. If you're using the 10V transducer output signal, the sensor needs to be powered with at least 15V AC or DC.
2. For application not using the 10V transducer output signal, using 4-20ma signal, 0-5V transducers, or Modbus/Ethernet only, in this case you can use 12V AC or DC.

Approvals

Plastic Enclosure	PA66 UL 94 V0 file E194560
Connectors	PA66 UL 94V0 file E3651 37
PCB	FR-4 Epoxy Glass Cloth UL E360179

Part Number Scheme

HUM - D

Code	Description
HUM	Hum/Temp Transmitter

Code	Module
D	Duct Mount
W	Wall Mount
C	2 Meter Cable

Dimensions

HUM-D/W

3.4in (85.0mm)

2.4in (61.6mm)
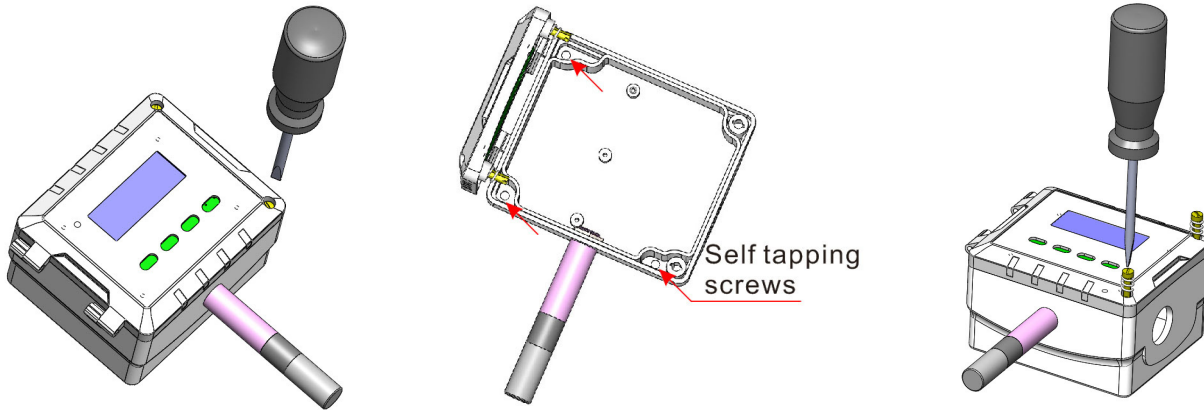
3.9in (100.0mm)

4.3in (108.0mm)

TEMP & HUMIDITY

Humidity / Temp Transmitter

Installation Mounting

HUM-D & HUM-W

1) Unfasten the slotted screw on the enclosure. Turn the slotted screw ½ a turn till it pops out.

2) There are three small holes, indicated with the red arrows, inside the box. Use these holes to fasten the unit to the wall with self tapping screws.

Self tapping screws

Humidity / Temp Transmitter

Register List

Modbus

Humidity/Temp Transmitter w/Bacnet uses MODBUS protocol to communicate with others.Below is the register list.

Address	Register and Description
6	Address. Modbus device address
15	Baudrate. 0=9.6kbaud, 1=19.2kbaud 2=38.4kbaud 3=57.6kbaud 4=115.2kbaud
21	Protocol switch. 3 = MODBUS,0=Bacnet MSTP.
100	Room temperature reading in DegF. Can also write to this register for single point calibration.
373	Relative humidity reading in percentage,the same to register304
482	Dew point in unit C
490	Enthalpy of the air, [kJ/kg]
538	Light sensor value.The resolution is 0.1 lux;
...	......

Bacnet

Humidity/Temp Transmitter w/Bacnet also uses Bacnet protocol to communicate with others.Below is the register list.

Variable	Variable and Description
3	Modbus ID
8	Uart BaudRate.0=9.6kbaud, 1=19.2kbaud 2=38.4kbaud 3=57.6kbaud 4=115.2kbaud
10	Protocol
12	Dew point
15	Enthalpy
...	......
Input	**Input and Description**
1	Temperature
2	Humidity
Output	**Output and Description**
1	Analog output1
2	Analog output2

*For more register list details,please downloaded an excel spreadsheet (03ModbusBacnetRegisterL-ist. xls) at the following link: *http://tinyurl.com/ybaj9d3u*

Humidity / Temp Transmitter

Stucture Graphic

*Ethernet Port

Connect

Standard Ethernet Cable
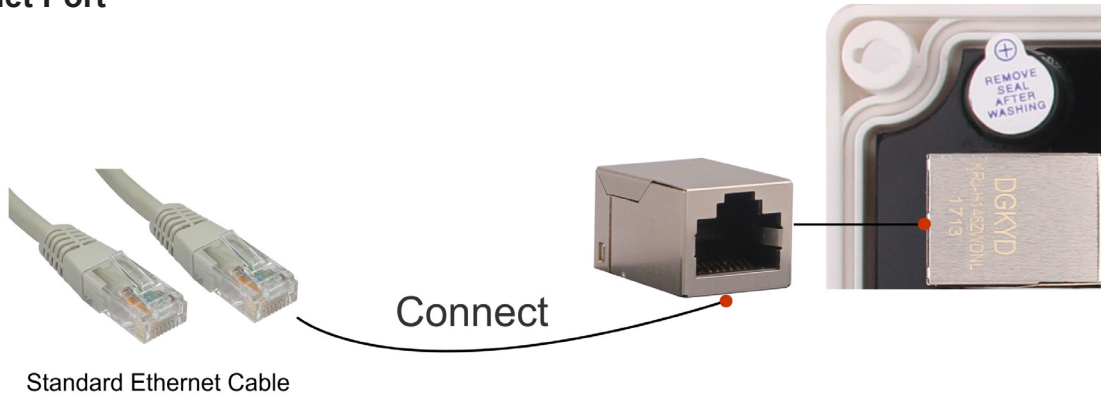
Ethernet Implementation:
A family of computer networking technologies commonly used in local area networks (LANs) and metropolitan area networks .Ethernet has largely replaced competing wired LAN technologies such as token ring, FDDI and ARCNET.Features such as the 48-bit MAC address and Ethernet frame format have influenced other networking protocols. The primary alternative for some uses of contemporary LANs is Wi-Fi, a wireless protocol standardized as IEEE 802.11.

HUM-D & HUM-W
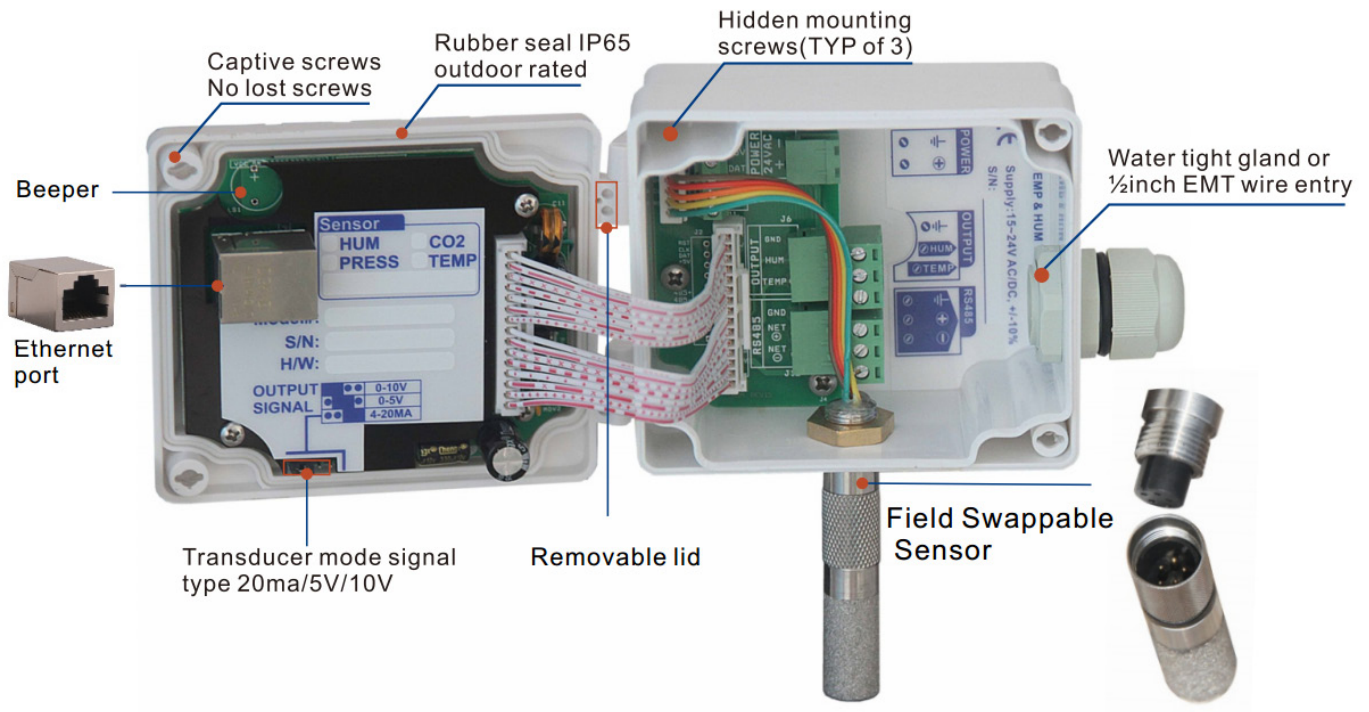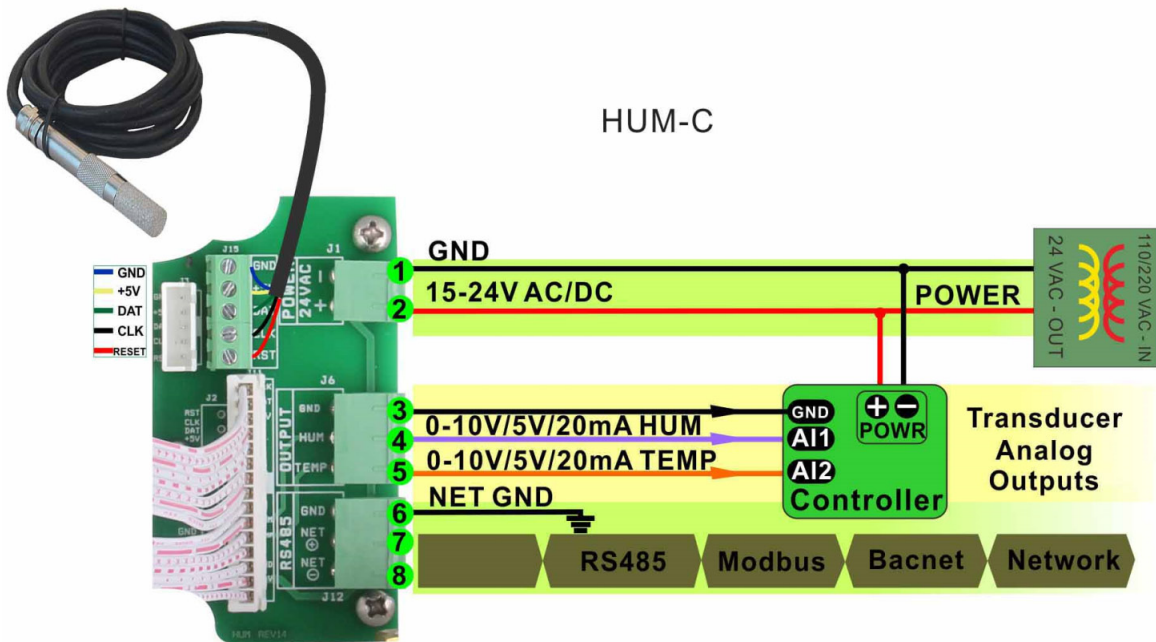
Humidity / Temp Transmitter

Wiring Diagram

The diagram below shows the wiring for the usual transducer mode of operation for the humidity / temperature transmitter. The transducer outputs connect to a master controller using the traditional analog output signals, 0-5V, 0-10V, 4-20mA.
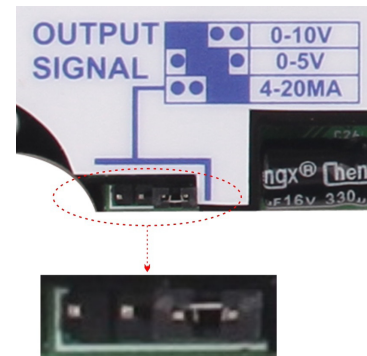
HUM-D & HUM-W Rev 25
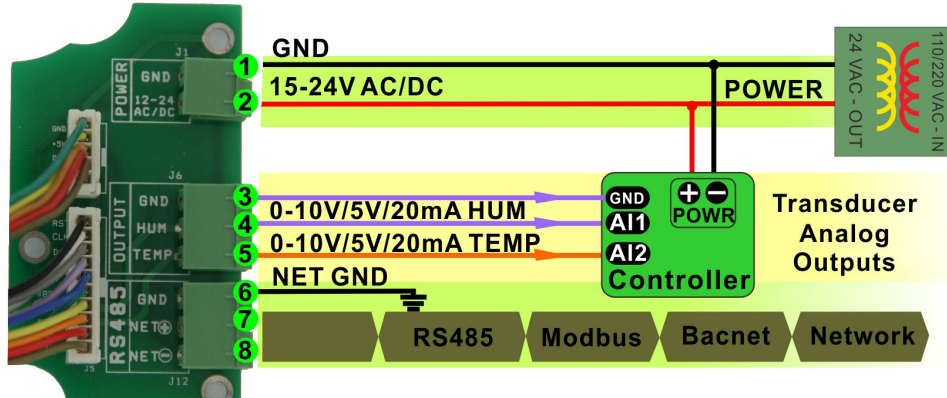
HUM-C
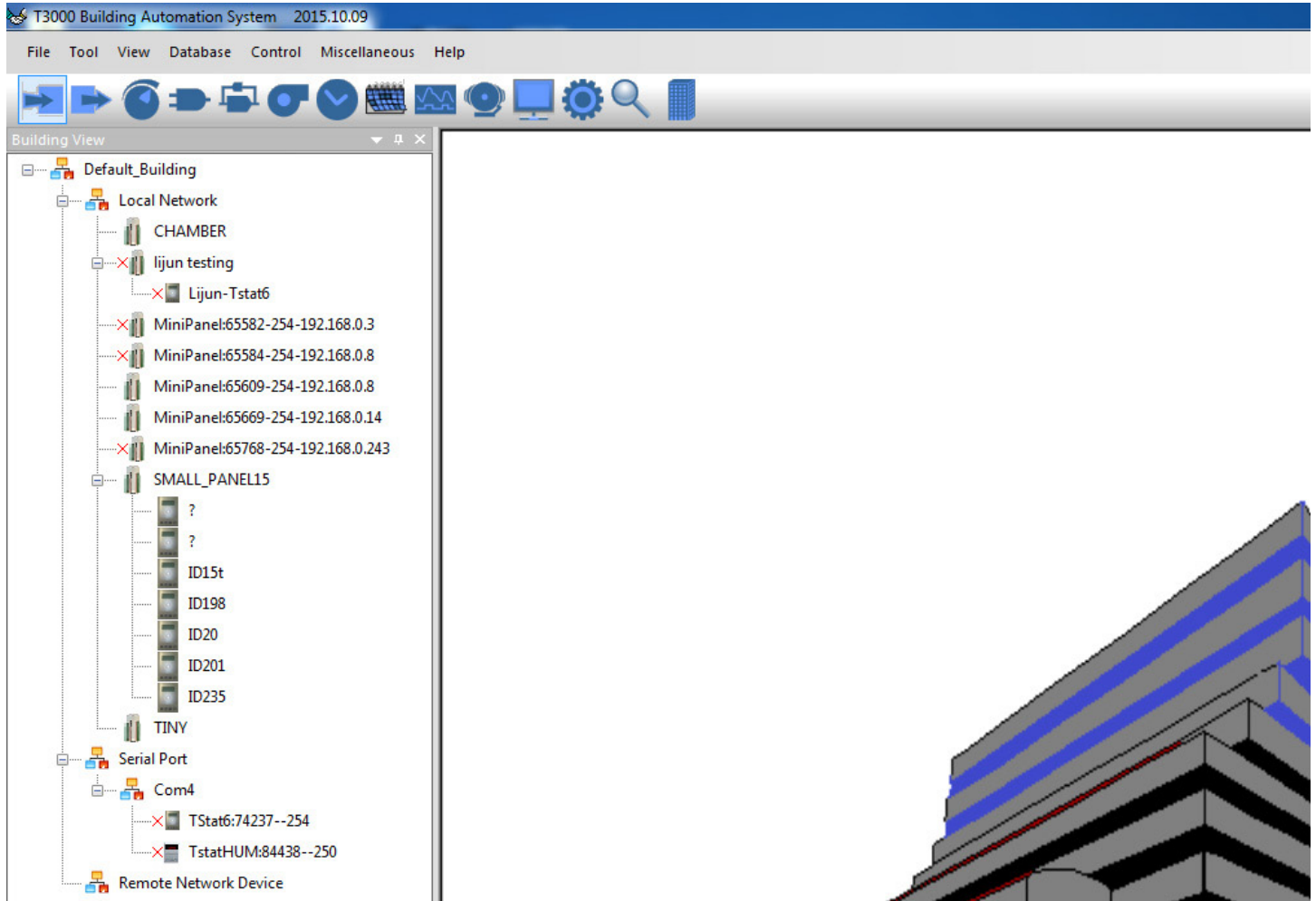

Output Jumper Settings

In this mode the device acts as a traditional transducer where it sends out three analog signals, all you need to do is to set this one single jumper to the appropriate signal type: 4-20mA, 0-10V, or 0-5V.
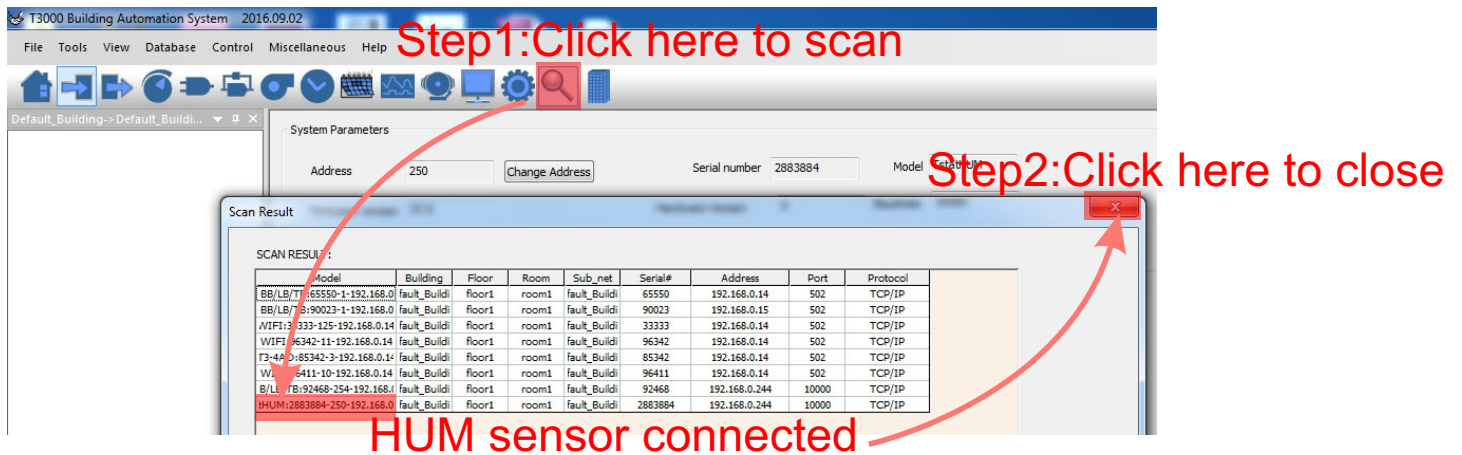
T3000 Operation

1. Connect HUM to PC by RS485.
2. Open T3000 and it show the following view.

Humidity / Temp Transmitter

3. Click the button to scan, the following view will appear and close it as the picture shows.

Step1:Click here to scan

Step2:Click here to close

HUM sensor connected

4.Click the HUM log and it will show all the information.

In input setting view, there are temperature, humidity and dew point.In output setting view, when you click the humidity, an arrow appears, you can choose humidity or dew point.

Step3:Click the logo

Table appears

Selectable
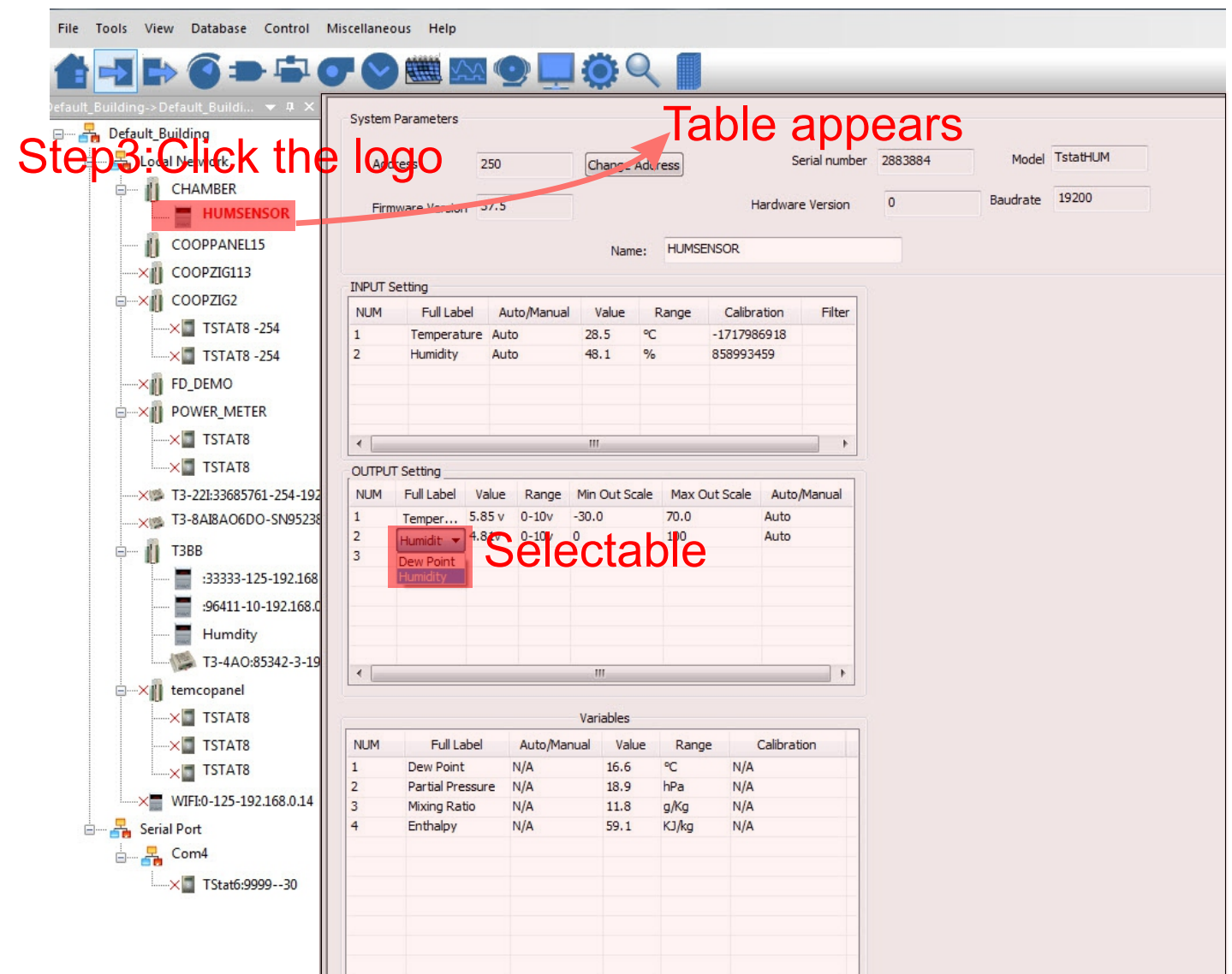
Humidity / Temp Transmitter

T3000 calibration

The picture shows T3000 calibration of HUM.Do as the follows:
You can click to change value or calibration,also to choose User Table or Factory Table:

Humidity / Temp Transmitter

T3000 calibration

Click here

Show a table

Click here to choose User Table

Click here to add NUM

Click here to choose Factory Table

Humidity / Temp Transmitter

Connecting to the device using Bacnet

The device can be connected using Bacnet.Below are the steps:
Step1.Download Yabe software as the link:*https://tinyurl.com/ycrt9jep* and install it.
Step2.Connect the device to the computer,select Bacnet protocol.Start the Yabe software,add the device.
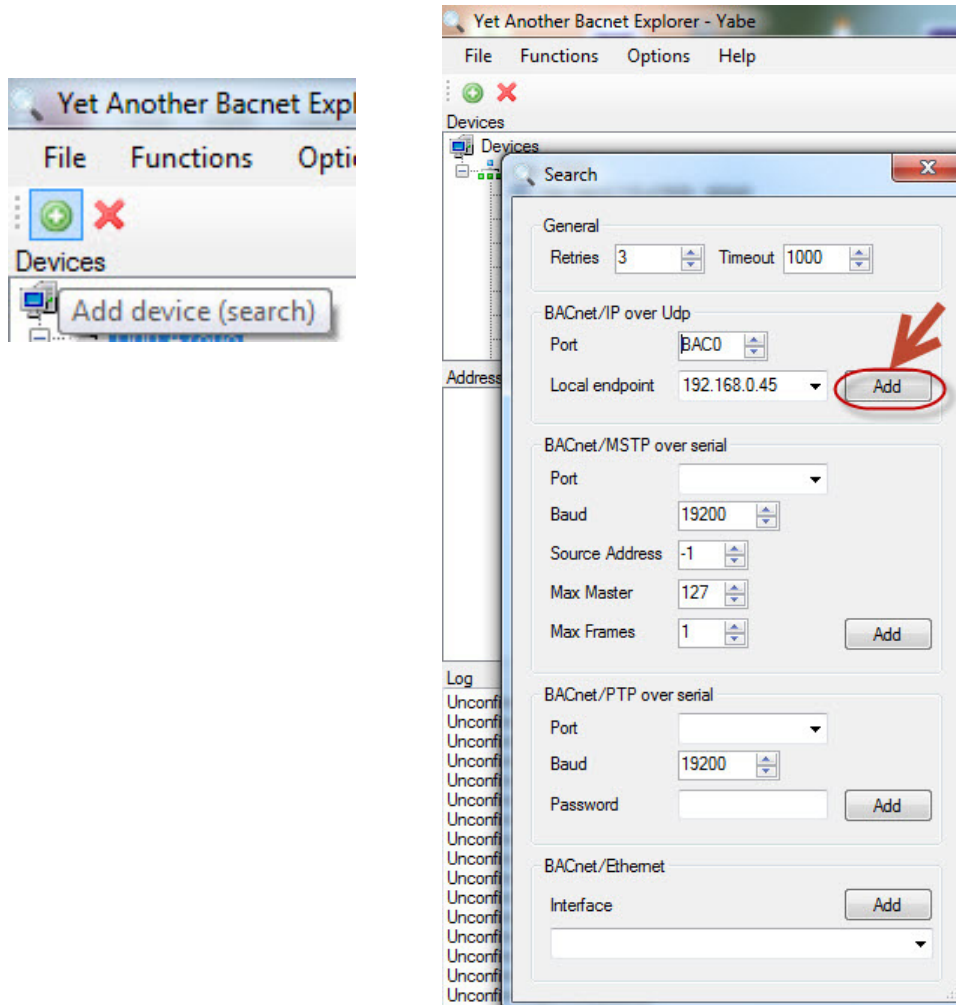
Step3.You can find your device IP as below.Double click the left mouse button,you can find your device and the bacnet information in the "Adress Space" tab.
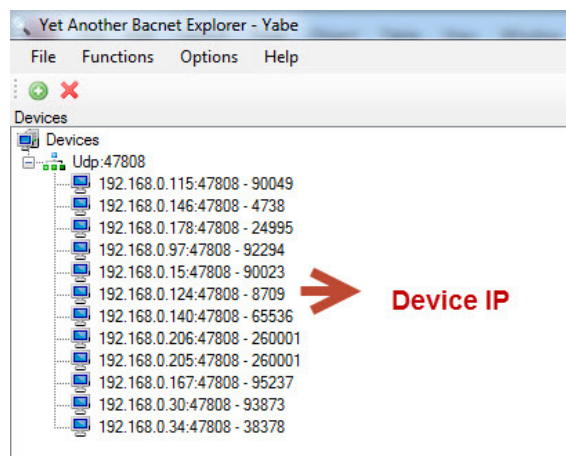
Humidity / Temp Transmitter
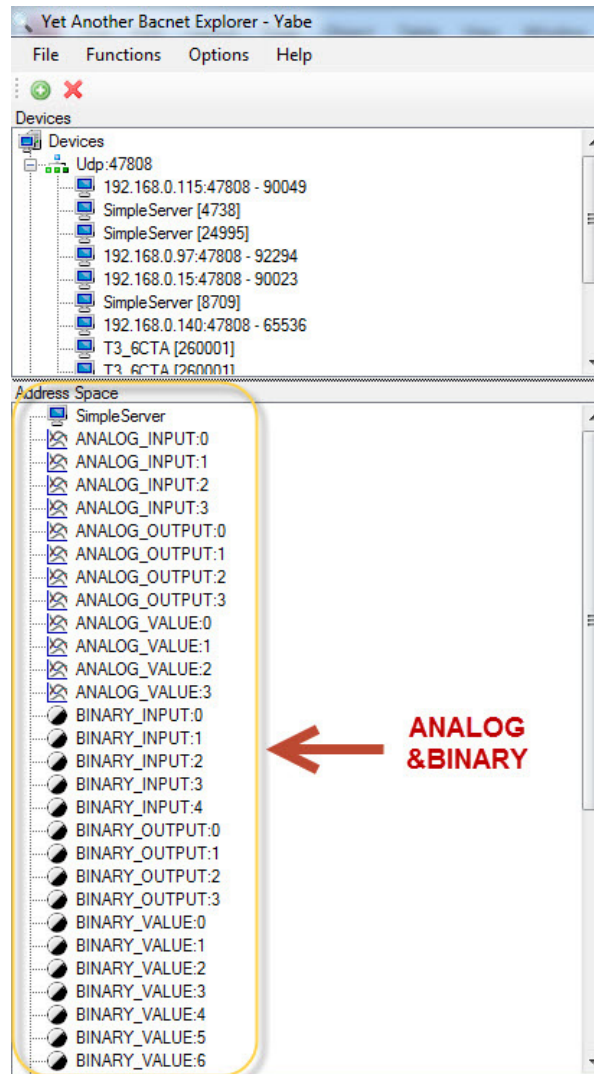
Step4.In the "Address Space" tab,click the "ANALOG_VALUE" ,it will show the information of "log ANALOG_VALUE"in the BacnetProperty tab. And it 's the same with "ANALOG_OUTPUT" and other items.

Humidity / Temp Transmitter

Voltage & Current Formula for HUM-D/W(Hardware=Rev9~12)	
0-10V output	Temperature (C) = (Voltage * 100 - offset) / 10
	Temperature (F) = (DegC) * 9 / 5 + 32
	Humidity = Voltage / 10
0-5V output	Temperature (C) = (Voltage * 100 - offset) / 20
	Temperature (F) = (DegC) * 9 / 5 + 32
	Humidity = Voltage / 20
4-20mA output	Temperature (C) = ((Current – 4)/0.16) – offset/10
	Temperature (F) = DegC * 9 / 5 + 32
	Humidity = (Current – 4)/0.16
	Temperature(F) : register 100
	Temperature© : register 101
Applied for all	Offset : register 443, offset from zero C to adjust temperature range
	For example 0 = 0-100C; 300 = -30 to +70C (Default setting)
	Where Voltage is the input voltage in Volts, and Current is in mA, ie 10 = 10mA

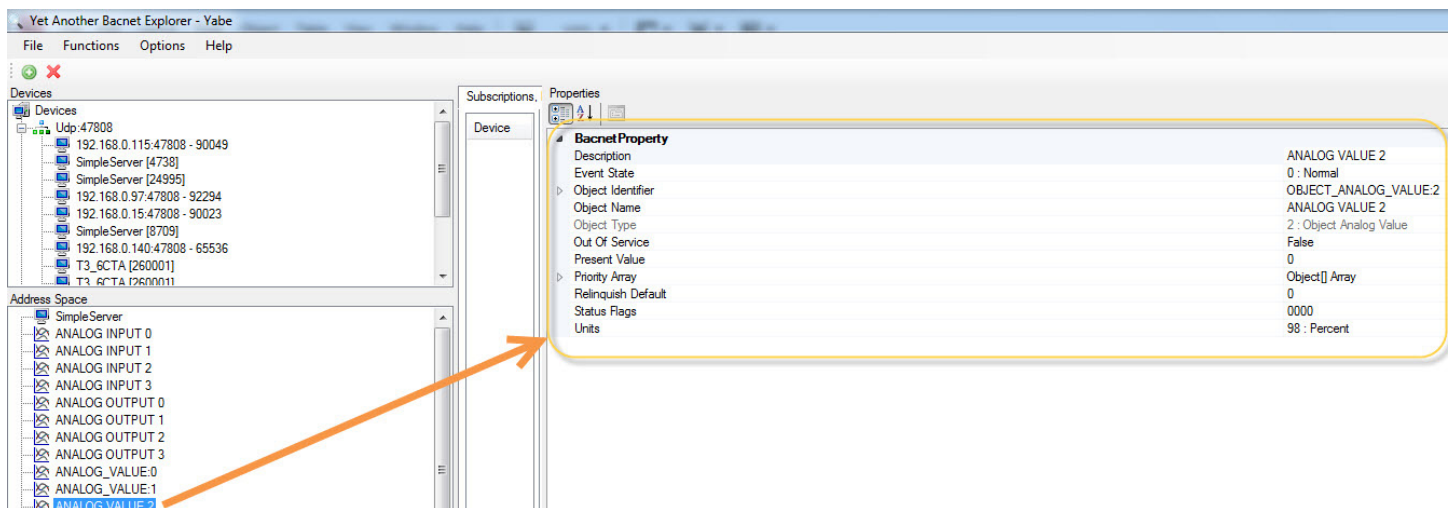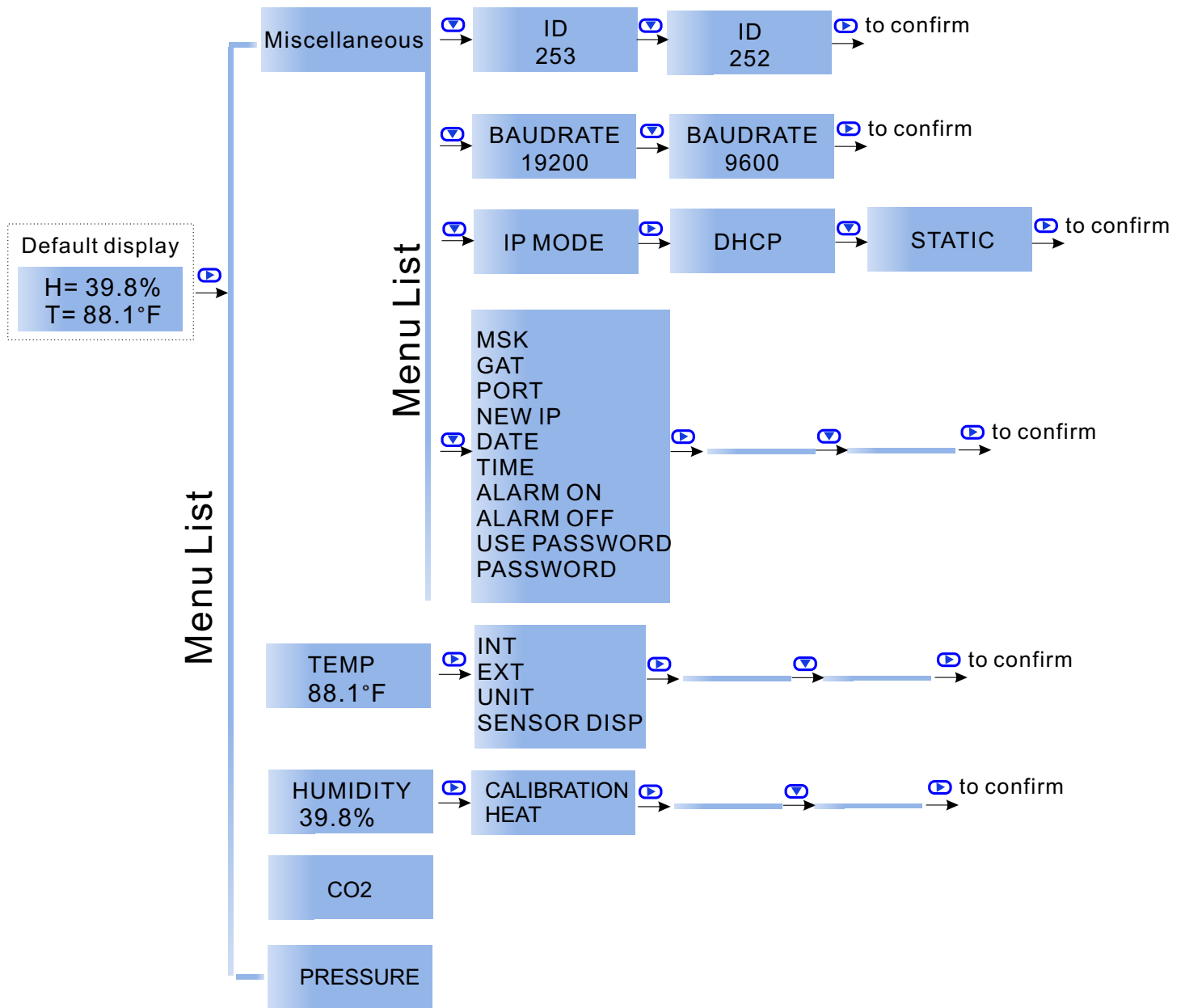| Voltage & Current Formula for HUM-D/W (Hardware=Rev22+)	
0-10V output	Voltage = Temperature (C) / Temperature_Range * 10
	Voltage = Humidity / Humidity_Range * 10
0-5V output	Voltage = Temperature (C) / Temperature_Range * 5
	Voltage = Humidity / Humidity_Range * 5
4-20mA output	Current = Temperature (C) / Temperature_Range * 16 + 4
	Current = Humidity / Humidity_Range * 16 + 4
Temperature (C): Register 101 Humidity: Register 304 Temperature_Range = (Register 286 - Register 285) / 10 Humidity_Range = (Register 288 - Register 287) / 1000 Voltage in V Current in mA	

Voltage & Current Formula for HUM-R	
0-10V output	Voltage = Temperature (C) / Temperature_Range * 10
	Voltage = Humidity / Humidity_Range * 10
0-5V output	Voltage = Temperature (C) / Temperature_Range * 5
	Voltage = Humidity / Humidity_Range * 5
4-20mA output	Current = Temperature (C) / Temperature_Range * 16 + 4
	Current = Humidity / Humidity_Range * 16 + 4
Temperature (C): Register 101 Humidity: Register 102 Temperature_Range = (Register 333 - Register 332) / 10 Humidity_Range = (Register 335 - Register 334) / 1000 Voltage in V Current in mA	

Hardware=Rev22+

Default display

H= 39.8%
T= 88.1°F

Menu List

Menu List

Miscellaneous

ID
253

ID
252

to confirm

BAUDRATE
19200

BAUDRATE
9600

to confirm

IP MODE

DHCP

STATIC

to confirm

MSK
GAT
PORT
NEW IP
DATE
TIME
ALARM ON
ALARM OFF
USE PASSWORD
PASSWORD

to confirm

TEMP
88.1°F

INT
EXT
UNIT
SENSOR DISP

to confirm

HUMIDITY
39.8%

CALIBRATION
HEAT

to confirm

CO2

PRESSURE

External Inputs

HUM-W Rev 12 Wiring Diagram
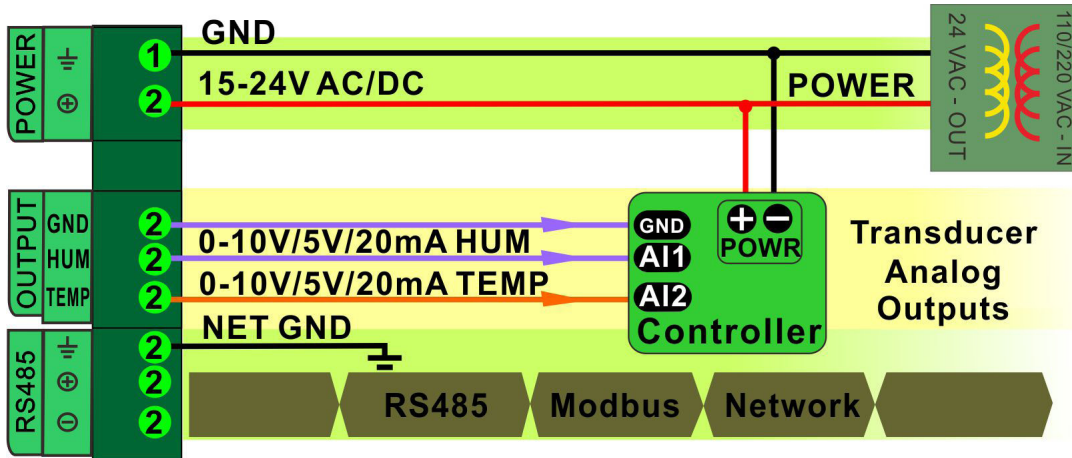
Jumper Settings
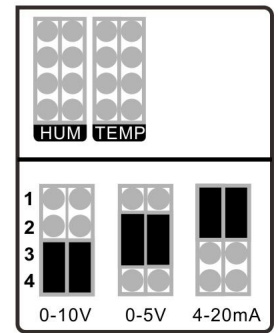
Advanced Menu Item Instructions

a. Normal state

H= 42.2%
T= 62.7F
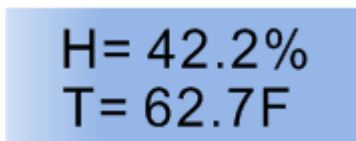
b. To set the unit's ID, click ◀ or ▶ to enter the menu mode. Continue clicking ◀ or ▶ until the screen displays "ID". Use the buttons; ▲ and ▼ to change the unit's ID. Leave the unit for several seconds upon reaching a desired value to store it.

c. To set the unit's baudrate, click ◀ or ▶ to enter the menu mode. Continue clicking ◀ or ▶ until the screen displays "BAUDRATE". Use the buttons; ▲ and ▼ to change the baudrate. Leave the unit for several seconds upon reaching a desired value to store it.

ID
254

BAUDRATE
19200

UNITS
-F-
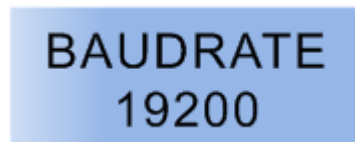
Humidity / Temp Transmitter

Modbus Register List of HUM-D/W/C

Humidity Sensor uses MODBUS protocol to communicate with others. Below table for HUM-D/HUM-W/HUM-C.

Address	Register and Description
0 to 3	Serial Number -4 byte value. Read-only
4 to 5	Software Version –2 byte value. Read-only
6	ADDRESS. Modbus device address
7	Product Model. This is a read-only register that is used by the microcontroller to determine the product
8	Hardware Revision. This is a read-only register that is used by the microcontroller to determine the hardware Rev
9	PIC firmware version
10	'Plug n Play' address, used by the network master to resolve address conflicts. See VC code for algorithms
15	Bau - Baudrate, 0=9.6kbaud, 1=19.2kbaud 2=38.4kbaud 3=57.6kbaud 4=115.2kbaud
16	Firmware Update Register, used to show the status of firmware updates
21	Protocol switch. 3 = MODBUS,0=MSTP.
17-39	Blank, for future use
40 to 45	reg40, MAC address, read only normally
46	reg46, IP mode. 0=static IP; 1= DHCP
47 to 48	reg47, upper two bytes of IP address
49 to 50	reg49, lower two bytes of IP address
51 to 52	reg51, right two bytes of SUBNET MASK address
53 to 54	reg53, left two bytes of SUBNET MASK address
55 to56	reg55, right two bytes of GATEWAY address
57 to 58	reg57, left two bytes of GATEWAY address
59	reg59, 0, TCP server, (NO USE)
60	reg60, listen port at TCP server mode
61~75	buffer mirror for changing to a new IP address, copy of reg 46 to 60
76	write 1 to set the ghost settings to the system and start new settings, then clear the ghost registers.
93	Enable for MAC setting. It should be set as 1 before write the new MAC to the MAC registers(100-105), and it will be cleared automatically after setting the MAC address.
100	ROOM TEMPERATURE reading in DegF. Can also write to this register for single point calibration.
101	ROOM TEMPERATURE reading in DegC. Can also write to this register for single point calibration.
113	Not used
121	LCD temperature will show C or F, 0 =C, 1=F

Humidity / Temp Transmitter

Modbus Register List of HUM-D/W/C

Address	Register and Description
185	Bau - Baudrate, 0=9600, 1=19.2k baud
186	The factory default is 1. Temperature Transducer output range, 1=0-10V, 2=0-5V, 3=4-20mA
187	The factory default is 1. Humidity Transducer output range, 1=0-10V, 2=0-5V, 3=4-20mA
285	The minimum degree of temperature range corresponding to the temperature output
286	the maximum degree of temperature range corresponding to the temperature output
287	the minimum percent of humidity range corresponding to the humidity output
288	the maximum percent of humidity range corresponding to the humidity output
304	Relative Humidity reading. Writing a humidity value to the register will do calibration, for details, refer to Humidity Calibration.
370	Auto/Manual output calibrate set. 0 : default value 1 : user manual. Bit 0 :temperture bit1 :humidity
371	Temperature manual output value input, releative with register 370
372	Humidity manual output value input, releative with register 370
373	Relative humidity in percentage,the same to register304
374	sensor frequency on time
375~380	spare for futher function
381	Factory 1st Calibration point. RH
382	Factory 1st Calibration point. Frequency
383	Factory 2nd Calibration point. RH
384	Factory 2nd Calibration point. Frequency
385	Factory 3rd Calibration point. RH
386	Factory 3rd Calibration point. Frequency
387	Factory 4th Calibration point. RH
388	Factory 4th Calibration point. Frequency
389	Factory 5th Calibration point. RH
390	Factory 5th Calibration point. Frequency
391	Factory 6tht Calibration point. RH
392	Factory 6th Calibration point. Frequency
393	Factory 7th Calibration point. RH
394	Factory 7th Calibration point. Frequency
395	Factory 8th Calibration point. RH
396	Factory 8th Calibration point. Frequency
397	Factory 9th Calibration point. RH
398	Factory 9th Calibration point. Frequency
399	Factory 10th Calibration point. RH

Humidity / Temp Transmitter

Modbus Register List of HUM-D/W/C

Address	Register and Description
400	Factory 10th Calibration point. Frequency
450	Temperature Calibration Offset for sensor
451	Humidity Calibration Offset for sensor
452	the filter of temperature
453	the filter of humidity
454	calibrate table select,default tabel =0 or customer table = 1
455	user calibrate points number
456 ~ 475	user calibrate points
476	K line
477	B line
478	humidity sensor serial number
479	spare for futher function
480	spare for futher function
481	spare for futher function
482	dew point in unit c
483	dew point in unit F
484	heat control
485	spare for futher function
486	dewpoint output min range
487	dewpoint output max range
488	Partial Pressure of water at saturation at given temperature, [hPa]
489	Mixing Ratio, the mass of water over the mass of dry gas, [g/kg]
490	Enthalpy of the air, [kJ/kg]
491	Modbus reply delay time (ms)
492	Modbus receive delay time(ms)
500	PID1 MODE: 0=COOL MODE,1=HEAT MODE
501	PID1 SetPoint
502	PID1 Pterm
503	PID1 Iterm
504	PID1 Value
510	PID2 MODE:0=COOL MODE,1=HEAT MODE
511	PID2 SetPoint
512	PID2 Pterm
513	PID2 Iterm
514	PID2 Value

Humidity / Temp Transmitter

Bacnet Register List of HUM-D/W/C

Humidity Sensor uses BACNET protocol to communicate with others. Below table is for HUM-D/HUM-W/HUM-C

Variable	Variable and Description
0	SerialNumber LowByte
1	Product Model
2	SerialNumber HighByte
4	SoftWare Version
5	HardWare Version
6	Humdity Version
7	Uart BaudRate 0=9.6kbaud, 1=19.2kbaud 2=38.4kbaud 3=57.6kbaud 4=115.2kbaud
8	Reset to factory set = 143
9	Protocol switch. 0 = MODBUS,1=MSTP.
10	Auto/Manual, Bit 0 :temperture bit1 :humidity
11	Humidity Value
12	Temperature Value
13	
14	Dew point
15	Partial Pressure of water at saturation at given temperature, [hPa]
16	Mixing Ratio, the mass of water over the mass of dry gas, [g/kg]
17	Enthalpy of the air, [kJ/kg]
18	OffSet Humdity
19	OffSet Tempeature
20	
21	Filter Humdity
22	Filter Temperature
23	
24	
25	Temperature Unit:0 =C, 1=F
26	
27	OutMode: 1=0-10V, 2=0-5V, 3=4-20mA
28	Humdity analog output
29	Temperature analog output
30	Co2 analog output
31	Humdity Min Range
32	Humdity Max Range
33	
34	

Humidity / Temp Transmitter

Bacnet Register List

Variable	Variable and Description
35	PID/Transmit select
36	PID1 MODE: 0=COOL MODE,1=HEAT MODE
37	PID1 SetPoint
38	PID1 Pterm
39	PID1 Iterm
40	PID1 Value
41	PID2 MODE:0=COOL MODE,1=HEAT MODE
42	PID2 SetPoint
43	PID2 Pterm
44	PID2 Iterm
45	PID2 Value

Note: HUM-W adjustable baud rate from around 9600 baud on up to 115200 baud. No parity, 8 bits, no stop bit (N81)

Humidity / Temp Transmitter

Descriptions

Humidity & Temperature transmitters node with display is designed for environment monitoring and controlling in industrial, commercial and other buildings. These transmitters can be used to monitor air temperature and humidity in various industrial and commercial settings. Use in the traditional mode for analog output to other controllers or use Modbus RS485/Bacnet MS/TP to integrate over the network.

HUM-N-LCD

Highlights:
- High performance digital sensors and circuits, ensure accurate measurement and temperature compensation
- Good long term stability and reliability.
- Display in degrees Fahrenheit or Celsius(connection to Modbus).
- RS485/Bacnet MS/TP for direct digital reading on all models.
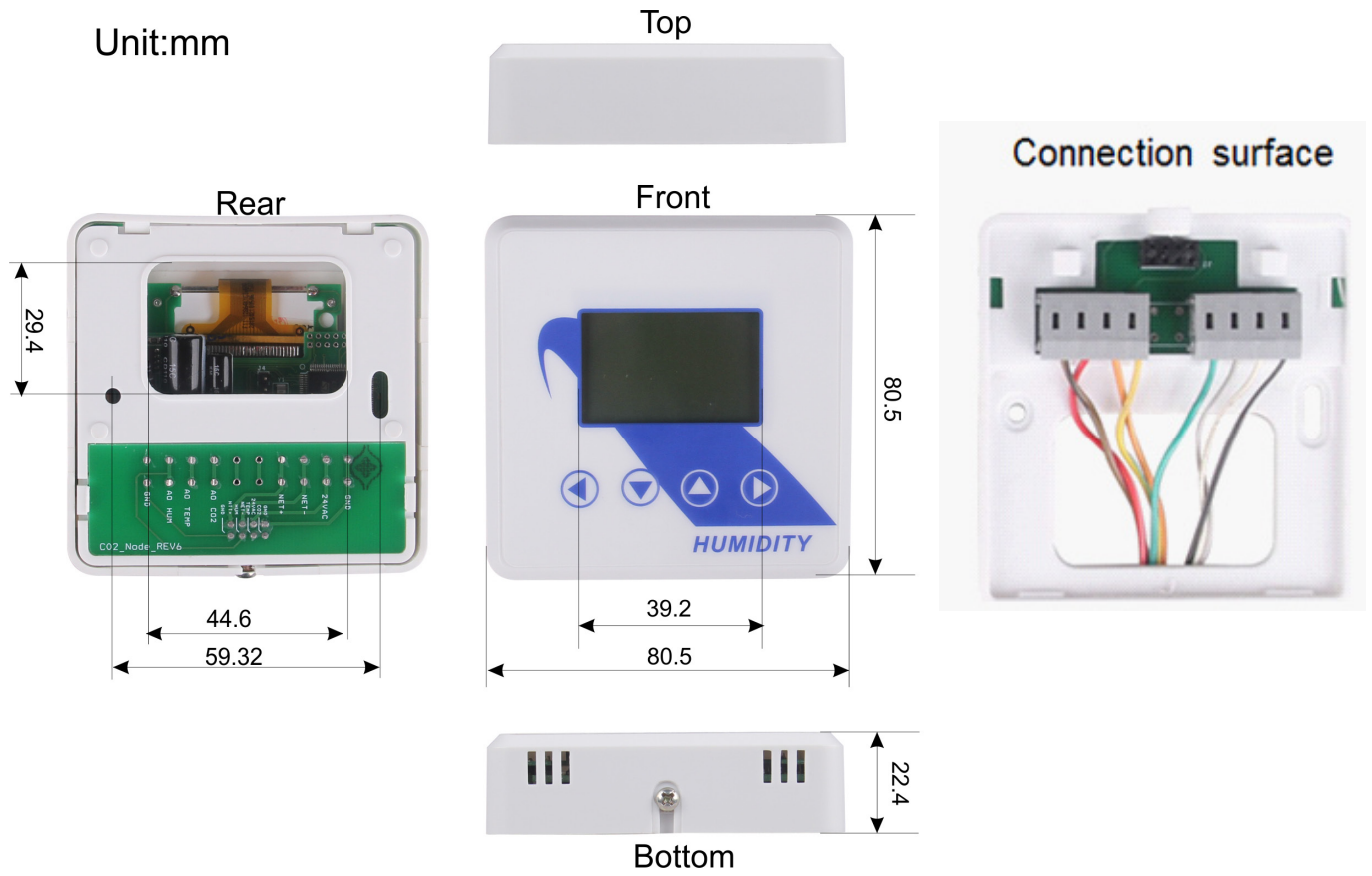- To set jumper to select the transducer signal type: 4-20mA, 0-5V or 0-10V

Specifications

Typical Application	Wall mount indoors	
Output Signal Type	Jumper select: 4-20mA,0-10V,0-5V	
Output Signal Drive	> 500Ω for mA mode, 75mA max output drive for voltage mode	
RS485 ports	1	
Power	15-24V +/- 10%, AC or DC, 1 watt typical	
Operating Temp	-30~+60°C, 0-95% non condensing	
Plastic Housing	Flammability rating UL 94V0 file E194560	
Display	LCD screen, Resolution 0.1°C, 0.1% RH	
Control Features	N/A	
HUM	Sensor Type	Capacitive
	Range	0-100% Non-Condensing
	Accuracy	5%@25°C, 20~80%
	Drift	< 0.5% RH / year
TEMP	Sensor Type	10K thermistor
	Range	-40~150°C(-60~340°F)
	Accuracy	< ±0.5°C @ 25°C
Size	80.45 x 80.45mm (3.167 x 3.167in)	

Humidity / Temp Transmitter

Dimension

Unit:mm

Top

Rear

Front

Connection surface

29.4

80.5

44.6

59.32

39.2

80.5

22.4

Bottom

Part Number Scheme

HUM - D - LCD

Code	Description
HUM	Hum/Temp Transmitter

Code	Module
N	Node

Code	Module
LCD	LCD Screen
—	NO LCD Screen

Humidity / Temp Transmitter

Jumper Settings
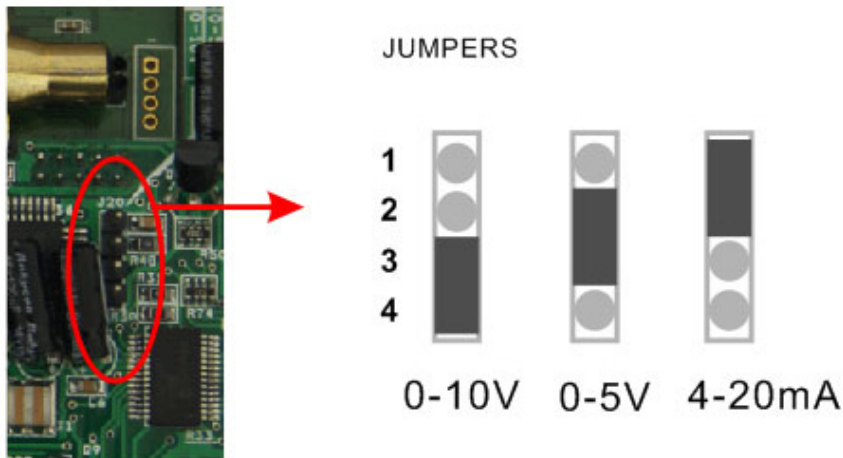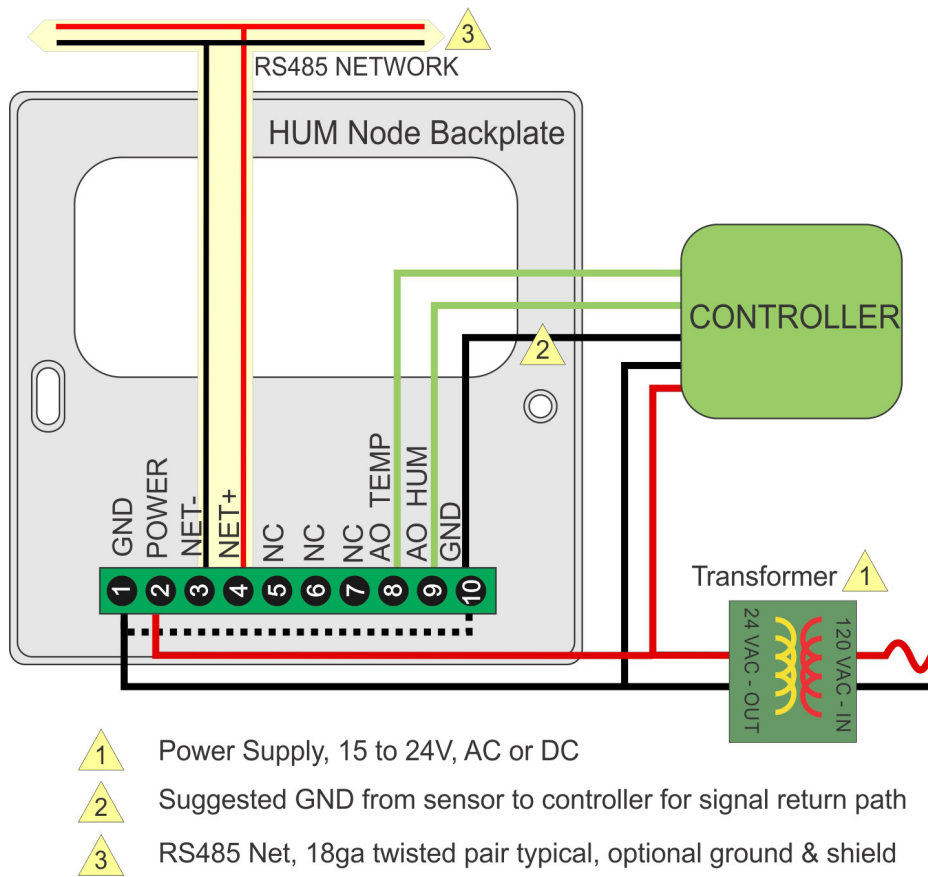
JUMPERS

1
2
3
4

0-10V   0-5V   4-20mA

Backplate Features

3 — RS485 NETWORK

HUM Node Backplate

CONTROLLER

2

GND
POWER
NET-
NET+
NC
NC
NC
AO TEMP
AO HUM
GND

1 2 3 4 5 6 7 8 9 10

Transformer 1

24 VAC - OUT   120 VAC - IN

1 Power Supply, 15 to 24V, AC or DC

2 Suggested GND from sensor to controller for signal return path

3 RS485 Net, 18ga twisted pair typical, optional ground & shield

Humidity / Temp Transmitter

Wiring Diagram

The diagram below shows the wiring for the usual transducer mode of operation for the HUM Node. The transducer outputs connect to a master controller using the traditional analog output signals.
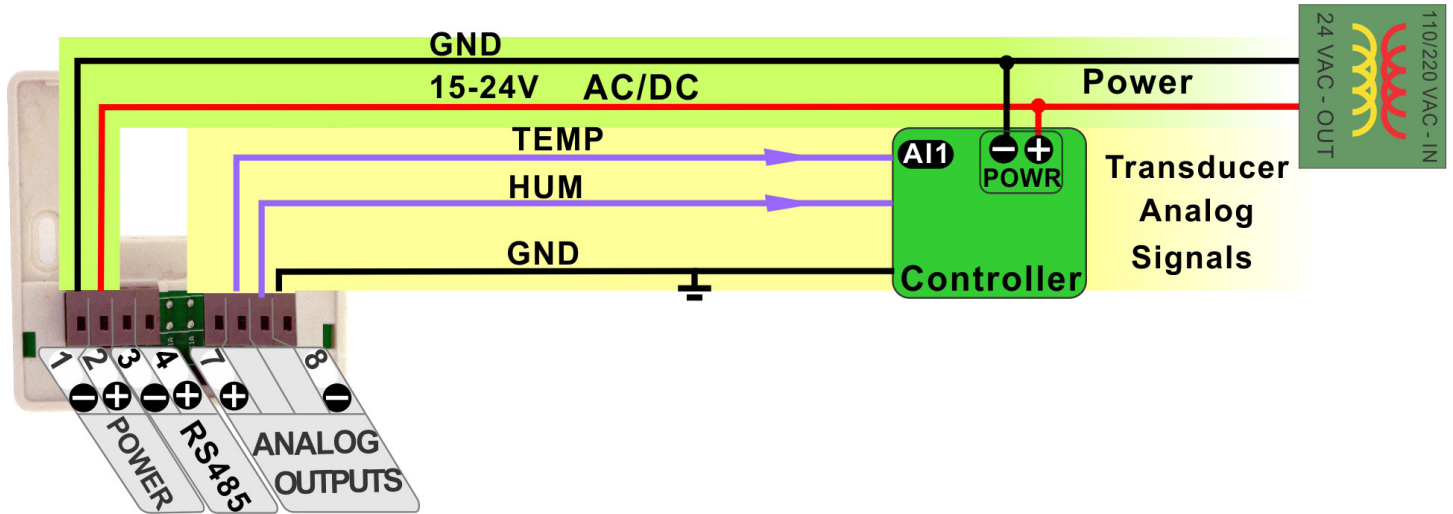
The next diagram shows the HUM Node working in the RS485 network, the node quantity can be 255. A group of sensors distributed through the building can cooperate friendly through net. The RS485 network is available for transmitting the same values digitally to other controllers.
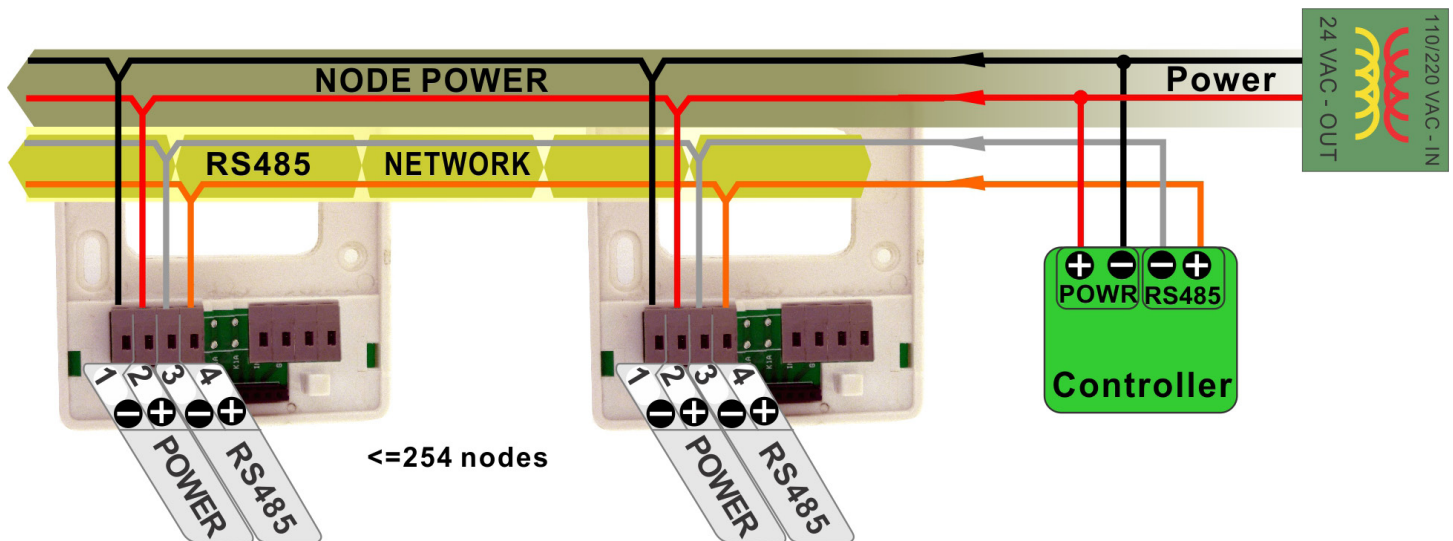
In this mode the device acts as a traditional transducer where it sends out three analog signals which is humidity, temperature readings. All you need to do is to set this one single jumper to the appropriate signal type: 4-20mA, 0-10V, or 0-5V.
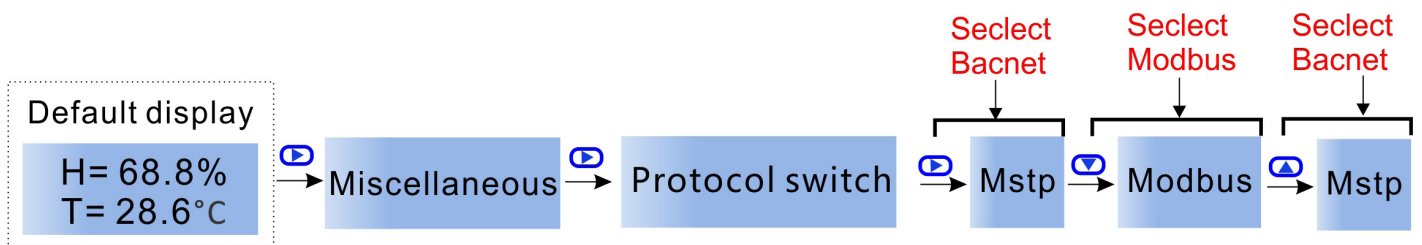
Humidity / Temp Transmitter

Instruction,Hareware=Rev22+

Miscellaneous → ID 253 → ID 252 → to confirm

BAUDRATE 19200 → BAUDRATE 9600 → to confirm

IP MODE → DHCP → STATIC → to confirm

Default display
H= 39.8%
T= 88.1°F

Menu List

MSK
GAT
PORT
NEW IP
DATE
TIME
ALARM ON
ALARM OFF
USE PASSWORD
PASSWORD
→ → → to confirm

Menu List

TEMP 88.1°F →
INT
EXT
UNIT
SENSOR DISP
→ → → to confirm

HUMIDITY 39.8% →
CALIBRATION
HEAT
→ → → to confirm

CO2

PRESSURE
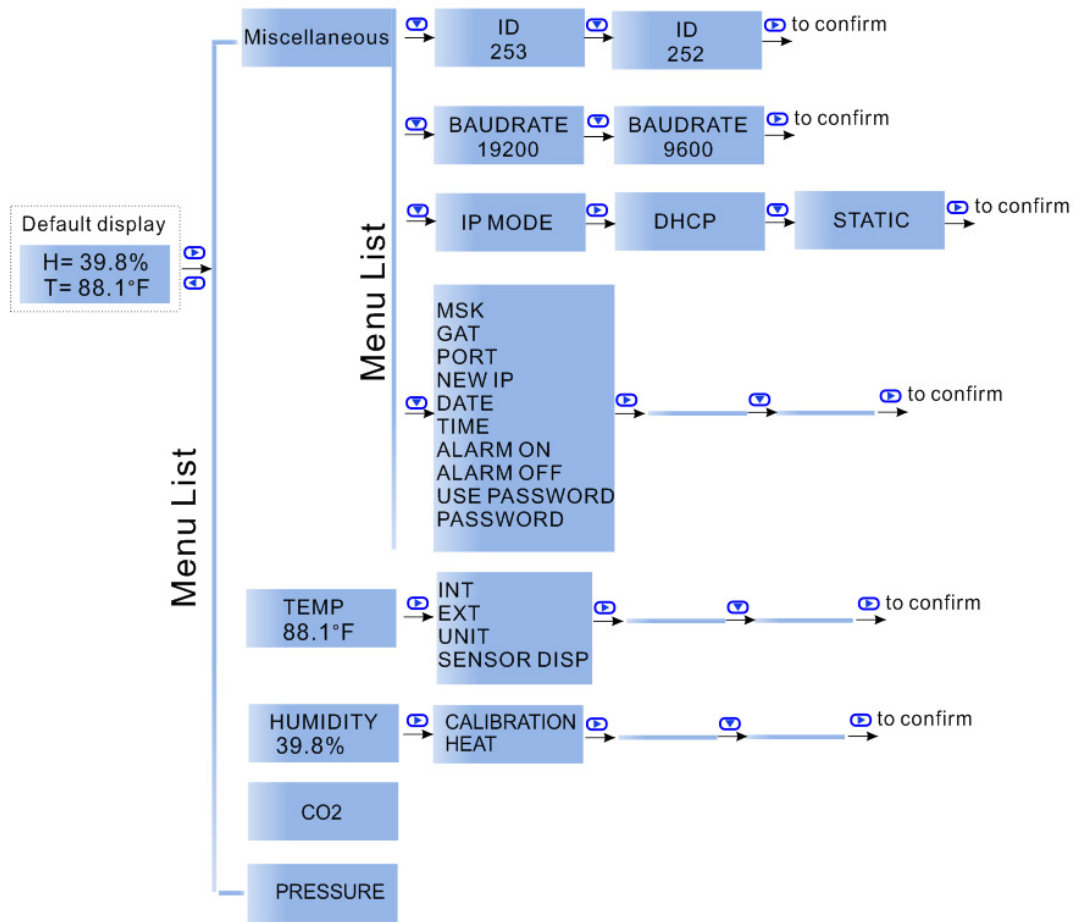
Modbus/Bacnet switch

To select the protocol as Modbus or Bacnet,Press ▶ to choose Miscellaneous,then press ▶ to choose Protocol switch,press ▼ ,it reads Mstp,which means you have seclected Bacnet ;if you want to switch to Modbus,press ▼ , or ▲ back to Bacnet.

Default display

H= 68.8%
T= 28.6°C
→ Miscellaneous → Protocol switch → Mstp → Modbus → Mstp

Seclect Bacnet

Seclect Modbus

Seclect Bacnet

Besides,you can check the Modbus Register List below,No.21:Protocol switch. 3 = MODBUS,0=MSTP.Or Bacnet Resgister List,No.9: Protocol switch. 0 = MODBUS,1=MSTP.
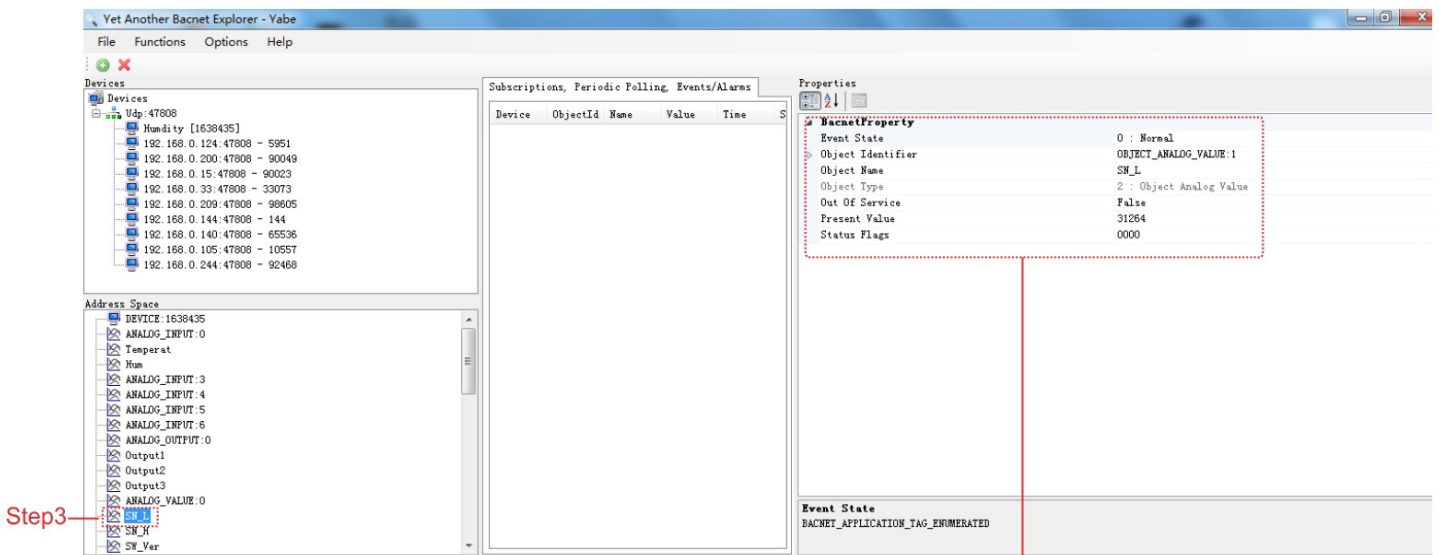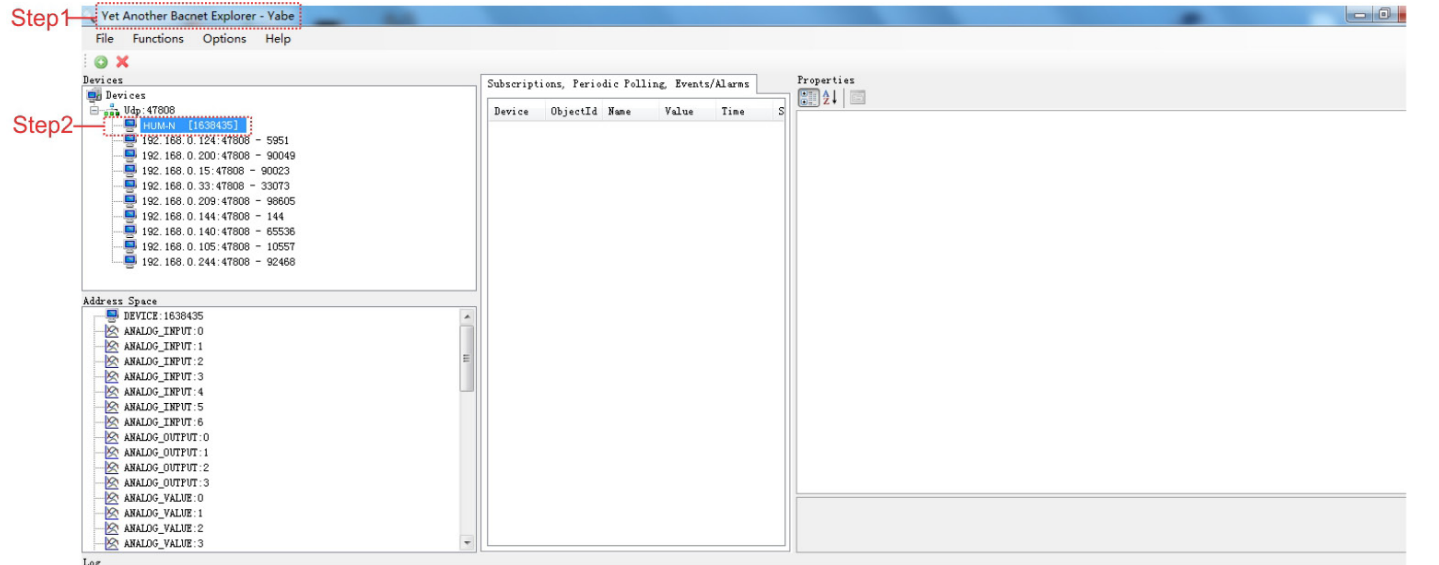
Humidity / Temp Transmitter

Analog Value

To check the analog value,you can use a software"Yet Another Bacnet Explorer-Yabe".Below are the steps to get the analog value.

*Step1:*Download the software"Yet Another Bacnet Explorer-Yabe" and install it.
*Step2:*Plug HUM-N in power,connect it to your PC via RS485 or Ethernet.
*Step3:*Click the item you want to check,a table reads BacnetProperty will pop-up on the right.

Humidity / Temp Transmitter

Modbus Register List

Humidity sensor node with display uses MODBUS protocol to communicate with others. Below table is for HUM-N.

Address	Register and Description
0 to 3	Serial Number - 4 byte value. Read-only
4 to 5	Software Version – 2 byte value. Read-only
6	ADDRESS. Modbus device address
7	Product Model. This is a read-only register that is used by the microcontroller to determine the product
8	Hardware Revision. This is a read-only register that is used by the microcontroller to determine the hardware rev
9	PIC firmware version
10	PLUG_N_PLAY_ADDRESS, 'plug n play' address, used by the network master to resolve address conflicts. See VC code for algorithms
11-14	Blank
15	Bau - Baudrate, 0=9.6kbaud, 1=19.2kbaud 2=38.4kbaud 3=57.6kbaud 4=115.2kbaud
16	Firmware Update Register, used to show the status of firmware updates
17-20	Reserved
21	Protocol switch. 3 = MODBUS,0=MSTP
22-100	Reserved
101	Adc value of temperature voltage output, not used, read only
102	Adc value of humidity voltage output, not used, read only
103	Reserved
104	Adc value of temperature current output, not used, read only
105	Adc value of humidity current output, not used, read only
106	Adc value of on board thermistor sensor, read only
107	Adc value of on board light sensor, read only
108-109	Reserved
110	Delta value for eliminating the pulse ppm value. The default value is 200
111	Fitler times, make the ppm value go smooth. The default value is 5.
112-114	Reserved
115	The version number of humidity sensor
116	The relative humidity
117	The frequency value read from humidity sensor, read only
118	The number of calibration points of the humidity sensor
119	Degree celsius temperature value of the humidity sensor
120	Degree fahrenheit temperature value of the humidity sensor
121	Celsius degree temperature value of the on board thermistor sensor
122	Fahrenheit degree temperature value of the on board thermistor sensor
123	The offset for calibrating the on board thermistor sensor

Humidity / Temp Transmitter

Modbus Register List

Address	Register and Description
124	Select the temperature direct to analog output: 0: on board thermistor sensor, default setting; 1: humidity sensor
125	Select the temperature direct to analog output: 0: on board thermistor sensor, default setting; 1: humidity sensor
126	Lighting value, for feature
127	Analog output mode, change it by setting the jumper (J20) on the board, read only
128	The minimum value of temperature directs to the analog outpu
129	The maximum value of temperature directs to the analog output
130	The minimum value of humidity directs to the analog output
131	The maximum value of humidity directs to the analog output
132-135	Reserved
136	The manual value of temperature
137	The manual value of humidity
138-151	Reserved
152	Enable/Disable the password for the menu system operation. 0=Disable, 1=Enable.
153	The first digital of the password. Should be from 0 to 9
154	The second digital of the password. Should be from 0 to 9
155	The third digital of the password. Should be from 0 to 9
156	The fourth digital of the password. Should be from 0 to 9
157-158	Reserved
159	Modbus reply delay time (ms)
160	Modbus receive delay time(ms)
161-501	Reserved
502	Maximum adjustment per day" default is 1ppm, max is 10 ppm, minimum is 1
503	"Number of days to watch for minimum" , default is 7 days. Max is 30 days. Minimum is 2 days

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Bacnet Register List of HUM-N

Humidity sensor node with display uses BACNET protocol to communicate with others. Below table is for HUM-N.

Variable	Variable and Description
0	SerialNumber LowByte
1	Product Model
2	SerialNumber HighByte
4	SoftWare Version
5	HardWare Version
6	Humdity Version
7	Uart BaudRate 0=9.6kbaud, 1=19.2kbaud 2=38.4kbaud 3=57.6kbaud 4=115.2kbaud
8	Reset to factory set = 143
9	Protocol switch. 0 = MODBUS,1=MSTP.
10	Auto/Manual, Bit 0 :temperture bit1 :humidity
11	Humidity Value
12	Temperature Value
13	Reserved
14	Dew point
15	Partial Pressure of water at saturation at given temperature, [hPa]
16	Mixing Ratio, the mass of water over the mass of dry gas, [g/kg]
17	Enthalpy of the air, [kJ/kg]
18	OffSet Humdity
19	OffSet Tempeature
20	Reserved
21	Filter Humdity
22	Filter Temperature
23	Reserved
24	Temperature Unit:0 =C, 1=F
25	OutMode: 1=0-10V, 2=0-5V, 3=4-20mA
26	Humdity analog output
27	Temperature analog output
28	Reserved
29	Humdity Min Range
30	Humdity Max Range
31	Temperature Min Range
32	Temperature Max Range

Humidity / Temp Transmitter

Display Parameters

You can customize which items will show on the display. There are two sections, the upper area at Tab1 which has two parameters and a scrolling line along the bottom at Tab2.