

12 Channel Precision Temp Sensor Module

Description

The T3E-PT12 is a precision temperature measurement module which can accept up to twelve instrument grade sensors. The unit accepts platinum Pt elements, either 100 ohm or 1k ohm variety. It also can accept 10k thermistors, Type II and Type III. Cabling can be accomplished using two, three or four wire connections. Communications is supported over Bacnet and Modbus over both RS485 and the Ethernet ports. All readings and the various settings are available as Bacnet objects and Modbus registers.

Highlights:

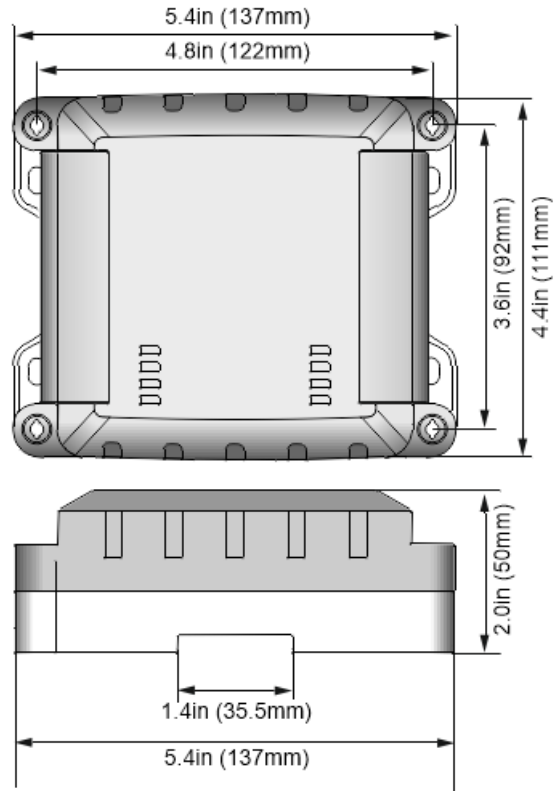
- 12 Analog PT100 or PT1000 Inputs
- Serial RS485 Standard
- Light-weight and Compact
- Probe Connection: 2, 3 and 4 wires
- Communications: Bacnet and Modbus protocol Supports both MSTP and IP connections
- UL listed ABS enclosure with rubberized texture creates a high end feel
- The RS485 port has separate upstream and a downstream connectors to make troubleshooting easier
- Each input as well as the RS485 connections have a separate screw terminal, there's no need to gang two wires under one terminal for any of the terminations
- T3000 front end is free and open source: <http://tinyurl.com/hgxavu5>



Specifications

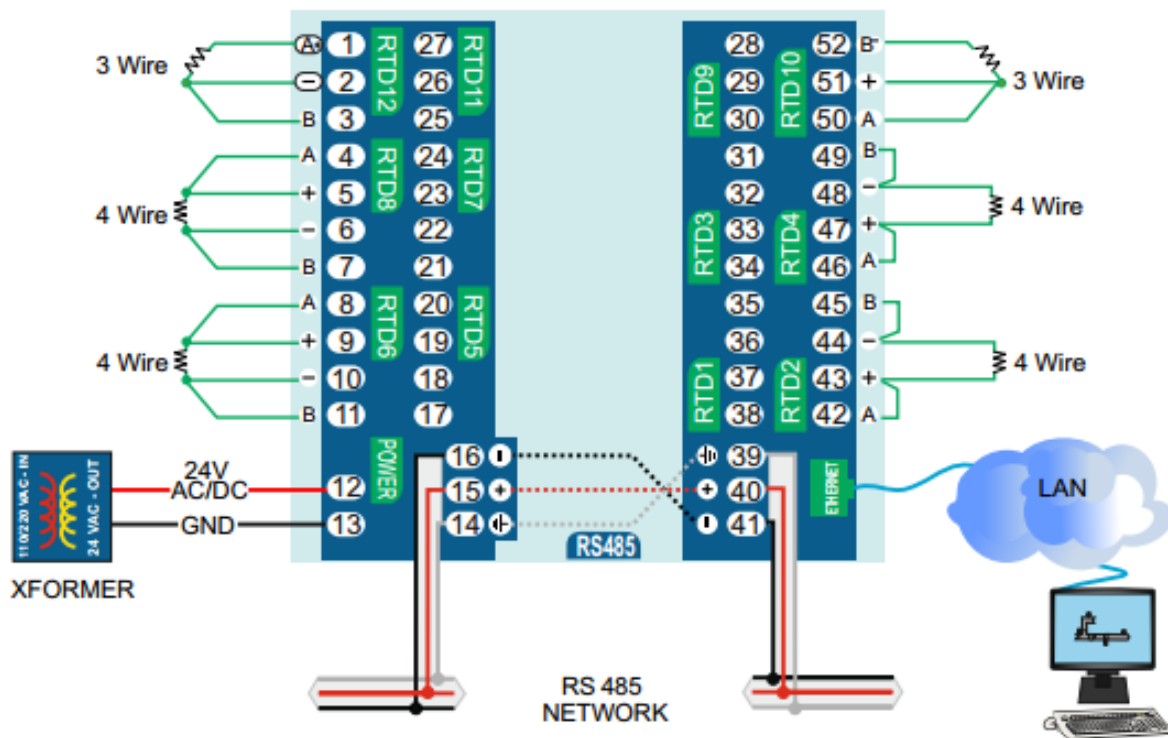
Sensor Type	PT100 or PT1000	
	Accuracy	Temperature Range
PT100	+/- 0.01°C	-200°C to 300°C
PT1000	+/- 0.01°C	-200°C to 300°C
Probe Connection	2, 3 and 4 wires	
Communications	Bacnet and Modbus protocol, supports both MSTP and IP connections	
Power Supply	12~24VAC/DC ±10%, 50-60Hz	
Baudrate	9600, 19.2k, 38.4k, 57.6k, 115.2kBaud	

Dimension

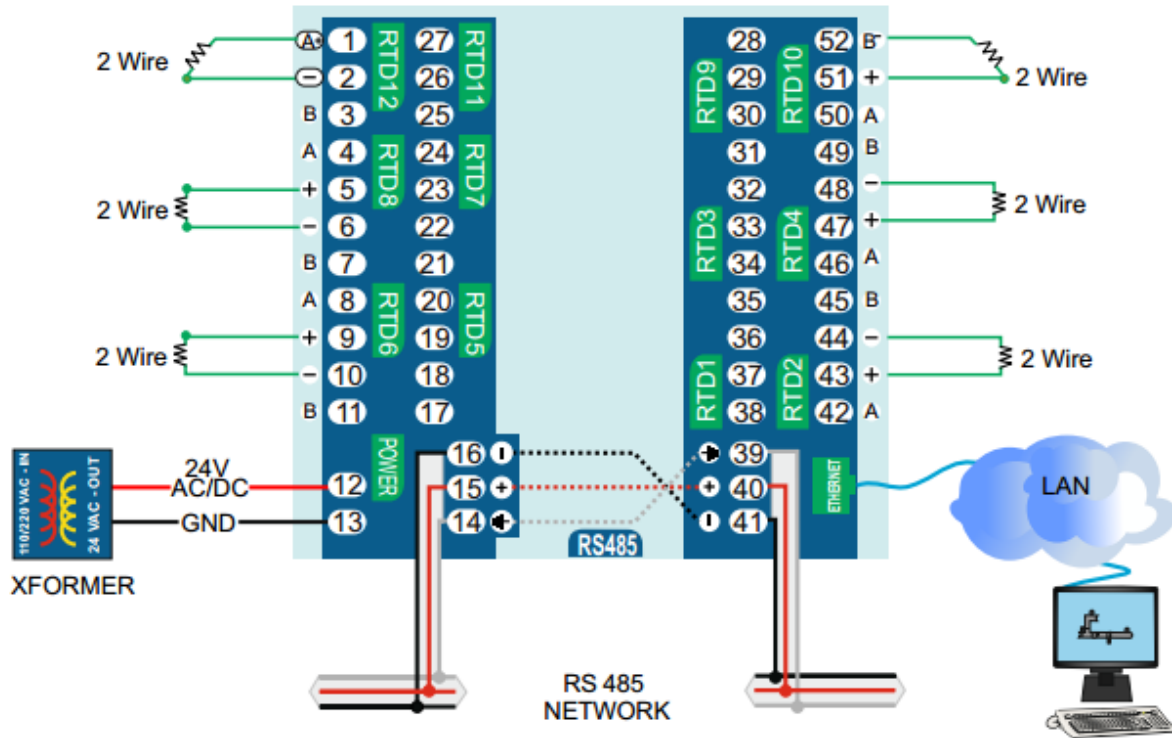


Wiring Diagram

T3E-PT12 WIRING DIAGRAM (P T100 P T1000)



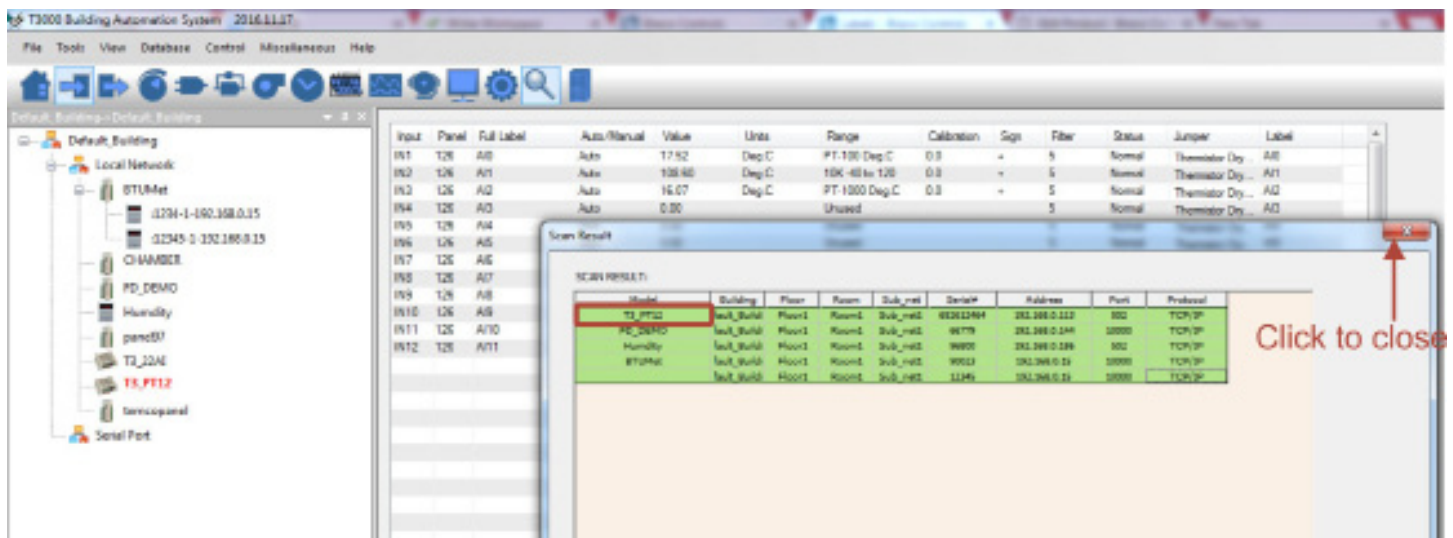
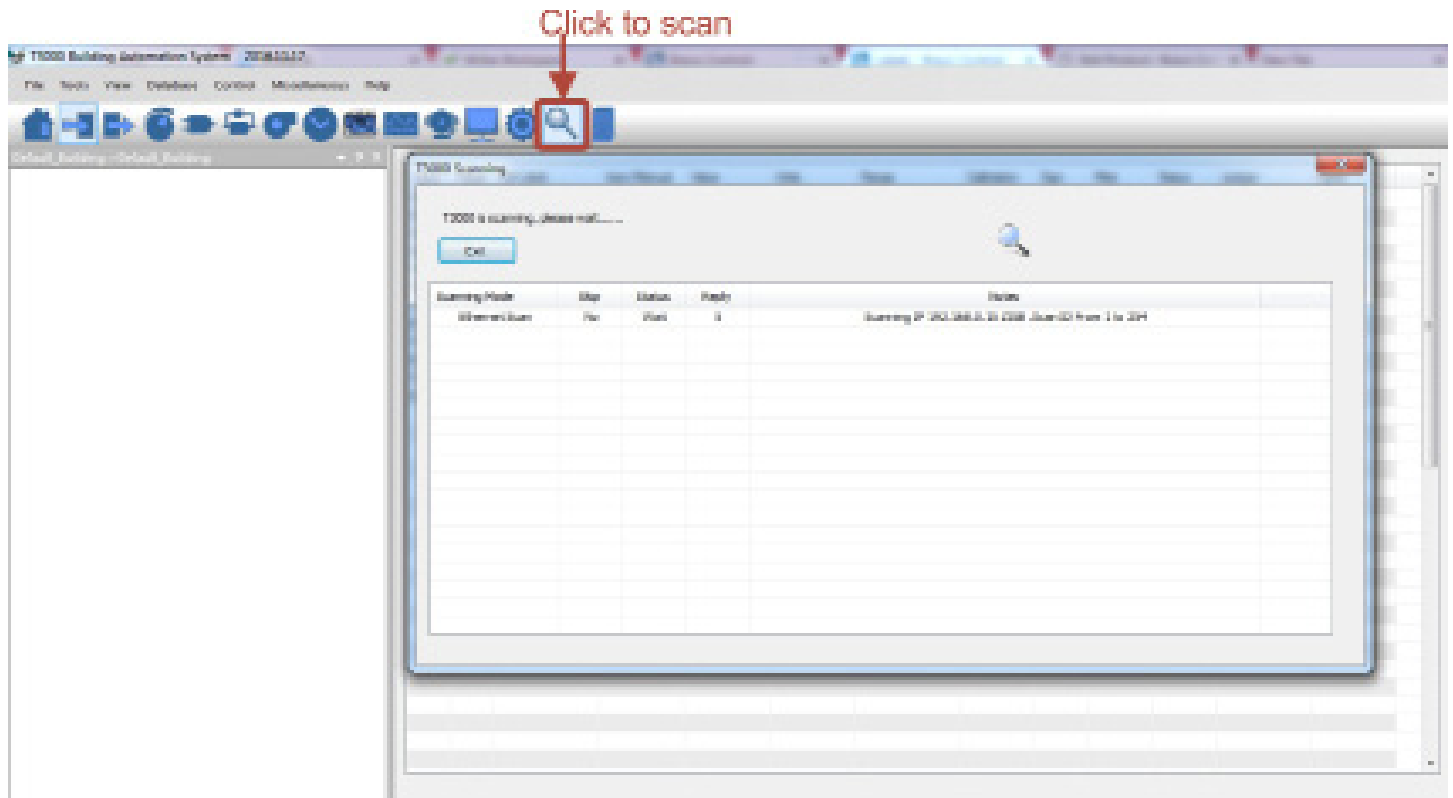
T3E-PT12 WIRING DIAGRAM (10K)



- 1: There are eight connectors including RTD1 to RTD8 which support 2, 3 and 4 wire sensors.
- 2: Due to limitations on the space, the four other connectors including RTD9 to RTD 12 only support 2 and 3 wire connections.
- 3: The RS485 port has two connectors, one typically for upstream devices and the other for downstream devices. These two connectors are internally tied together.

T3000 Operation

- 1). Connect sensor T3E-PT12 to PC by RS485.
- 2). OPEN T3000 and click the button to scan. The following view will appear then close it as the picture shows.



3). Click T3E-PT12 log and the T3000 will show all the information.

The screenshot displays the T3000 Building Automation System interface. The title bar shows "T3000 Building Automation System 2016.11.17". The menu bar includes "File", "Tools", "View", "Database", "Control", "Miscellaneous", and "Help". A toolbar with various icons is located below the menu bar. The main window is divided into two panes. The left pane, titled "Default_Build", shows a network tree structure under "Deraur_building". The tree includes "Local Network" and "Serial Port". Under "Local Network", there are several devices: "BTUMet" (with two sub-items: ":1234-1-192.168.0.15" and ":12345-1-192.168.0.15"), "CHAMBER", "FD_DEMO", "Humidity", "panel97", "T3_22AI", "T3_PT12" (highlighted with a red box and a red arrow pointing to it with the text "Click"), and "temcopanel". The right pane shows the configuration details for the selected device, "T3_PT12". The configuration includes: "ID Address" 254 (with a "Change ID" button), "Serial Number" 652612464, "Firmware Version" 1.7, "Model" T3-PT12, "Hardware Version" 1, and "PIC" 0. The "TCP/IP Info" section includes: "IP Model" set to "STATIC", "Listening Port" 502, "IP Address" 192 . 168 . 0 . 113, "MAC Address" 04-63-35-AF-00-01, "Subnet Mask" 255 . 255 . 255 . 0, and "Gateway Address" 192 . 168 . 0 . 4. An "Apply" button is located at the bottom right of the configuration pane.

4). Click the Range 'PT-100Deg.C' log and the T3000 will show the information.

1.Click to show the information

The screenshot shows the T3000 Building Automation System interface. On the left is a tree view of the building structure. The main window displays a table of sensor data. A red box highlights the 'Range' column, and a red arrow points from the 'PT-100 Deg.C' entry to a dialog box.

Inpt	Panel	Full Label	Auto/Manual	Value	Units	Range	Calibration	Sign	Filter	Status	Jump	Label
IN1	126	A0	Auto	26.78	Deg.C	PT-100 Deg.C	0.0	-	5	Normal	Thermistor On...	A0
IN2	126	A1	Auto	0.00		Unused	0.0	-	5	Normal	Thermistor On...	A1
IN3	126	A2	Auto	16.10	Deg.C	PT-100 Deg.C	0.0	-	5	Normal	Thermistor On...	A2
IN4	126	A3	Auto	0.00		Unused			5	Normal	Thermistor On...	A3
IN5	126	A4	Auto	0.00		Unused			5	Normal	Thermistor On...	A4
IN6	126	A5	Auto	0.00		Unused			5	Normal	Thermistor On...	A5
IN7	126	A6	Auto	0.00		Unused			5	Normal	Thermistor On...	A6
IN8	126	A7	Auto	0.00		Unused			5	Normal	Thermistor On...	A7
IN9	126	A8	Auto	0.00		Unused			5	Normal	Thermistor On...	A8
IN10	126	A9	Auto	25.28	Deg.C	10K-40 to 150	0.0	-	5	Normal	Thermistor On...	A9
IN11	126	A10	Auto	0.00		Unused			5	Normal	Thermistor On...	A10
IN12	126	A11	Auto	0.00		Unused			5	Normal	Thermistor On...	A11

2.Click to show

The screenshot shows the 'Select Range Number' dialog box. The 'Enter Units Number' field contains '31'. The 'OK' button is highlighted. The 'PT100 -40 to 150' range is selected in the list.

Enter Units Number: 31 [OK] [Cancel] **PT100 -40 to 150** [Close]

Digital Units

- 0 Unused
- 1 On/On
- 2 Close/Open
- 3 Stop/Start
- 4 Disable/Enable
- 5 Normal/Alarm
- 6 Normal/High
- 7 Normal/Low
- 8 No/Yes
- 9 Cool/Heat
- 10 Unoccupy/Occupy
- 11 Level/High
- 12 On/Off
- 13 Open/Close
- 14 Start/Stop
- 15 Enable/Disable
- 16 Alarm/Normal
- 17 High/Normal
- 18 Low/Normal
- 19 Yes/No
- 20 Heat/Cool
- 21 Occupy/Unoccupy
- 22 High/Low

Input Analog Units

- 31. PT100-40 to 150 Deg.C
- 32. PT100-40 to 250 Deg.F
- 33. 10K-40 to 120 Deg.C(Type2)
- 34. 10K-40 to 250 Deg.F(Type2)
- 35. PT1000-40 to 150 Deg.C
- 36. PT1000-40 to 250 Deg.F
- 37. 10K-40 to 120 Deg.C(Type3)
- 38. 10K-40 to 250 Deg.F(Type3)
- 39. A10K-50 to 110 Deg.C
- 40. A10K-40 to 200 Deg.F
- 41. 0.0 to 5.0 Volts
- 42. 0.0 to 100 Amper
- 43. 0.0 to 20 ma
- 44. 0.0 to 20 psi
- 45. Low Speed Count
- 46. 0.0 to 3000 FPM
- 47. 0 to 100 %(-5V)
- 48. 0 to 100 %(-20ma)
- 49. 0.0 to 100 Volts
- 50. Table 1
- 51. Table 2
- 52. Table 3
- 53. Table 4
- 54. Table 5
- 55. High Speed Count
- 56. Hz