Comfort Active Temperature Transmitter CTT 142

Jan.08

CTT

Technical Data

Selectable output type	0-10Vdc or 4-20mA
Select. output range	-10 to + 40°C -10 to +110°C -10 to +160°C 0 to +400°C Custom, in range of -40 to 400°C
Supply Voltage	
0-10Vdc	24Vac+/-15%@50Hz or 24Vdc +15%-6%
4-20mA	24Vdc +/-15% -6%
Accuracy	±0,2°C
Sensor type	Pt100a
Connectors	Terminals for 0,5-2,5mm2 cable
Ambient range temp.	-10…+60°C
Ambient range hum.	0-80%RH, non-condensing
Housing	
Material	ABS (flame retardant)
Dimension	85x85x30
Protection Class	IP30
Black bulb	
Material	Anodised aluminium
Dimensions	17,5x37mm dia.

These products meet the demand of CE approval

Note

Current versions are NOT loop powered and will require a common 0V connection

Features

- **Attractive housing**
- **Improved airflow over sensing elements**
- **Combines 4 preset temperature ranges**
- **Choice of outputs and ranges on one unit**
- **Temperature range selectable via jumper setting**
- **Customised output scaling**
- **Universal Transmitter**

Application

The room temperature transmitter CTT is a black bulb temperature sensor used for radiant heat indoor spaces.

Black bulb temperature sensors are used to calculate comfort temperature and radiant temperature.

Comfort Temperature

Comfort temperature measurement is best achieved by taking into account the radiant effect of surfaces within controlled space.

The comfort temperature is specified as average of conductive temperature and the radiant temperature

$$T_{comfort} = \frac{T_{radiant} + T_{conductive}}{2}$$

4-20mA output:
The red LED is on when the PCB is in 4-20mA mode and working correctly. For this to be so these conditions must be met:

1. The output select jumper(s) must be set to the 4-20mA position.
2. The output load must be an impedance of 500© or less.
3. The PCB is capable of sourcing the correct output current. (The red LED may flash if the PSU is below 22V or the impedance is more than 500©).
4. If using a current output mode, the sensor must only be used with a 24V DC supply. The sensor may be damaged if supplied with AC.

0-10Vdc output:
The output select jumper(s) must be connected in the 0-10Vdc position, minimum impedance 2kohm.

Ordering Codes

CTT 142	0-10Vdc/4-20mA selectable output, -10/+40°C, -10/+110°C, -10/+160°C, 0/+400°C
CTT 142X	0-10Vdc/4-20mA selectable output, (custom temperature scaling)

Calibration to customer specification in the range -40...+400°C (dependent on sensor type and application)

Temperature Calibration Service available

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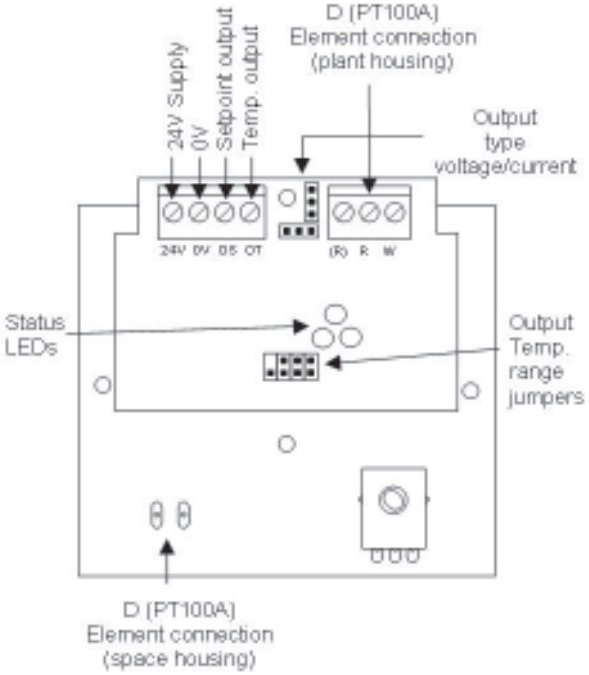
Mounting Notes

- The sensor is suited for a wall mounting on a recessed conduit box.
- It may not be mounted in recesses or shelves, not behind curtains or doors and not near heat sources.
- Direct solar radiation and draughts must be avoided.
- The permissible ambient climatic conditions must be observed.
- The end of the conduit at the room unit must be sealed to prevent false measurement due to draughts through the conduit.
- The room sensor should be mounted approximately 1,8 m above floor level.
- Undo the tamperproof screw at the bottom of the housing and gently pull the front panel from the base.
- Using the base as a template mark the holes centgres and fix the wall suitable screws.

  Alternatively the base plate can be mounted on to a conduit box or a standard recessed back box.
- Feed cable through the 22mm knockout in the base of the housing and terminate the cores at the terminal block as required.

  Leaving som slack inside the unit.
- Replace the housing to the base plate.
- Fit the tamperproof screw (if required) through th lug at the bottom of the base plate.

Connections



Current output

If using a current output, the sensor must only be used with a 24Vdc supply.

The sensor may be damaged if supplied with AC

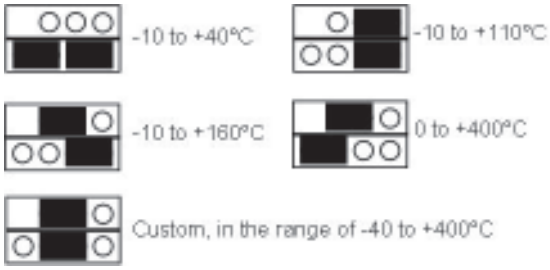
Note: When using current output mode they are NOT loop powered and will require a common 0V connection

Installation and Connection Details

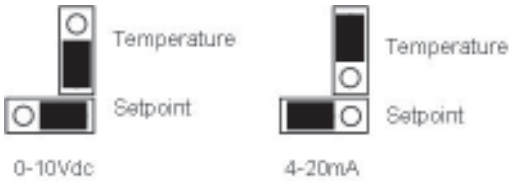
All connections to DDC controllers, data recorders etc. should be made using screened cable.
Normally, the screen should be earthed at one end only (usually the controller end) to avoid earth hum loops which can create noise.
Low voltage signal and supply cables should be routed separately from high voltage or mains cabling.
Separate conduit or cable trays should be used.
Where possible, the controller's earth should be connected to a FUNCTIONAL EARTH, rather than the mains safety earth.
This will provide better immunity to high frequency noise.
Most modern buildings have a separate earth for this purpose.

Jumper Settings

Output Temperature Range Selection



Note: If the range links are incorrectly set, the output range will default to -10/+40°C



Note: There is one link for SP and one for T, which can be set independently from each other, allowing (for example) the temperature output as 0-10Vdc and setpoint option output as 4-20mA. Setpoint is not available of CTT.

LED Status

Normal:
The green LED indicates the supply condition.
If the power supply is normal the green LED is ON continously
This shows that the CTT is powered correctly.

Low Supply Voltage:
If power supply falls below about 22V the green LED does double flashes twice a second.

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The PCB tries to maintain the correct output bay be unable to achieve the specified voltage or current level.
At very low voltages it will stop working.

High Supply Voltage:
If the power supply is above 40V the green LED flashes 6 times a second:

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The PCB tries to maintain the correct outputs but components on the PCB may overheat causing unreliability and ultimmately failure.