



CTF

Features

- **Attractive housing**
- **Improved airflow over sensing elements**
- **Excellent and room-representative measuring results are achieved**
- **Particularly used in larger rooms**
- **Polarity independent**
- **Optional with 2 sensors**
- **3 or 4-wire connection optional**

Application

The room temperature transmitter CTF 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.

The room radiation temperature CTF determines the effective portion of active radiation or also the effective radiant heat at the measured location.

Units contains either a high quality thermistor, Platinum or Nickel sensing element.

Sensor types compatible with most control manufacturers equipment are available.

Function

The sensing elements change their resistance value with respect to temperature:

PT100, PT1000, NI1000 - increasing resistance by increasing temperature.

NTC - increasing resistance by decreasing temperature.

Ordering Codes

CTFNTC Unitron, Trend, Honeywell T8120B, Elesta

CTFHON Honeywell NTC 20K

CTFPT100 Serck, Siemens, ABB, Honeywell, Sauter

CTFPT1000 Unitron, Johnson, Saia, Kieback & Peter Exomatic, Honeywell, Serck, Danfoss

CTFTA TAC

CTFNI1000 Sauter, Exomatic

CTFLGNI Siemens QAA 23,24,25,27,64, QAD 21

CTFPTC EM-systemer, Kverneland

3-wire Supplement

4-wire Supplement

0,1K Accuracy of Pt100 and Pt1000, Supplement

0,03K Accuracy of Pt100 and Pt1000, Supplement

Accuracy		
NTC	±0,5K	-30...75°C
PT 100b	±0,3K	-30...75°C
PT 1000b	±0,3K	-30...75°C
NI 1000b	±0,4K	-30...75°C

Technical Data

Connection	2-wire screened cable screw terminals 0,14 till 1,5mm ²
Testing current	ca 1mA
Insulating resistance	>100ohm@ at 20C(500Vdc)
Ambient range hum.	<95%RH
Protection class	IP30
Dimensions	Housing 79 x 81 x 42 mm
Weight	ca 120gram

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

$$T_{\text{comfort}} = T_{\text{radiant}} + T_{\text{conductive}}$$

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We reserve the right to make changes and improvements in our products which may effect the accuracy of the information contained in this leaflet.

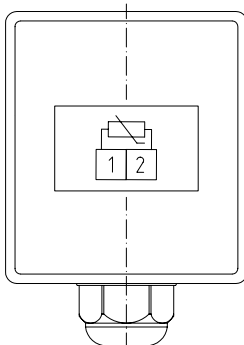
Mounting Notes

- 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.
- Using the base as a template mark the holes centres 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 hole in the base of the housing and terminate the cores at the terminal block as required.
Leaving some slack inside the unit.
- Replace the housing to the base plate.

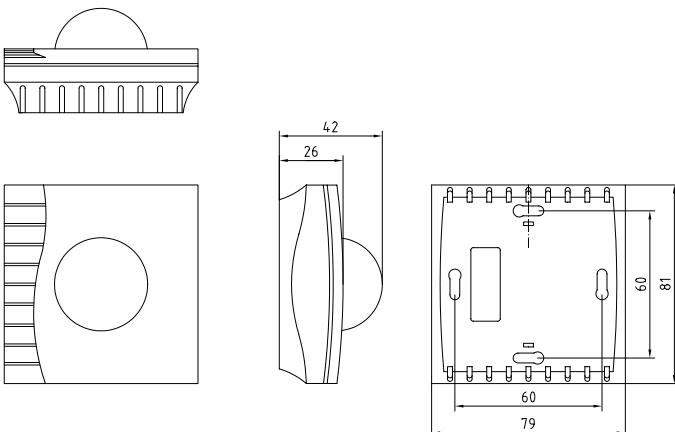
Connections



Connections are made via the 2-way terminal block.

Connections for thermistor/platinum and nickel elements are polarity independent.

Dimensions



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.

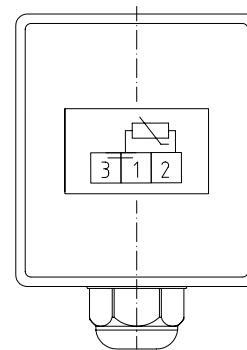
3 and 4 wire connection

The principle of both 3 and 4 wire connection is to provide a constant current flow through the element and measure the voltage drop as close to the element as possible.

The addition of the third wire eliminates the error from one of the two original installation wires.

3-wire connection

The addition of the third wire eliminates the error from one of the two original installation wires.



4-wire connection

4 wire connection eliminates the error from both of the original installation wires

