

### Technical Overview

The **TT915** is a black bulb temperature sensor used for radiant heat in indoor spaces. Black bulb temperature sensors are used to calculate comfort temperature which is specified as the average of the conductive temperature and the radiant temperature. Units contain either a high quality thermistor, Platinum or Nickel sensing element. Sensor types compatible with most controls manufacturers' equipment are available.



### Features

- Wide range of elements

### Specification

#### Output types:

Thermistor	Resistive
PT100a	Resistive
PT1000a	Resistive
NI1000a	Resistive
TT915/4-20mA/1	4-20mA
TT915/0-10Vdc/1	0-10Vdc

#### Accuracy:

Thermistor	±0.2°C (0 to 70°C)
PT100a	±0.35°C (0 to 100°C)
PT1000a	±0.35°C (0 to 100°C)
NI1000a	±0.35°C (0 to 100°C)

#### Housing:

Material	ABS (flame retardant)
Dimensions	85 x 85 x 50mm

#### Black bulb:

Material	Anodised aluminium
Dimensions	17.5 x 37mm dia.

Ambient range -10 to 60°C

Country of origin UK

### **Comfort Temperature**

Comfort temperature measurement is best achieved by taking into account the radiant effect of surfaces within the controlled space. The comfort temperature is specified as the average of the conductive temperature and the radiant temperature.

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

### Product Codes

#### TT915/element type

Example **TT915/10K3A1**

Element:	Compatibility:
<b>2.2K3A1</b>	Ambiflex, Johnson Controls
<b>3K3A1</b>	Alerton, Honeywell, Satchwell
<b>10K3A1</b>	Trend, Seachange, Ambiflex, Jel, Honeywell
<b>10K4A1</b>	Andover, York <40°C, Siebe
<b>20K6A1</b>	Honeywell
<b>30K6A1</b>	Drayton
<b>50K6A1</b>	Ambiflex
<b>100K6A1</b>	York >40°C
<b>LAN1</b>	Landis & Staefa
<b>SAT1</b>	Satchwell DRT, DDT, DWT, DST
<b>SAT2</b>	Satchwell DD, DR, DW1202, DWS1301
<b>SAT3</b>	Satchwell DW1204, DWS1202
<b>SAT4</b>	Satchwell DO2202
<b>SIE1</b>	Siebe, Barbar Colman
<b>STA1</b>	Staefa T1
<b>STA2</b>	Staefa T30
<b>TAC1</b>	TAC
<b>PT100a</b>	Serck
<b>PT1000a</b>	Cylon, Serck
<b>NI1000a</b>	Sauter

#### Active output:

**4-20mA/1** (-10 to 40°C)

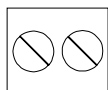
**0-10Vdc/1** (-10 to 40°C)

### Installation

1. Undo the tamperproof screw at the bottom of the housing and gently pull the front panel from the base.
2. Using the base as a template mark the hole centres and fix to the wall with suitable screws. Alternatively the base plate can be mounted on to a conduit box or a standard recessed back box.
3. Feed cable through the 22mm knockout in the base of the housing and terminate the cores at the terminal block as required. Leaving some slack inside the unit.
4. Replace the housing to the base plate.
5. Fit the tamperproof screw (if required) through the lug at the bottom of the base plate.

### Connections

#### Thermistor output:

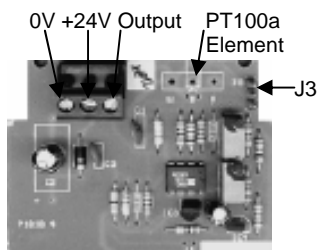


Connections are made via the 2-way terminal block. Connections for the thermistor element are polarity independent.

#### 4-20mA output:



#### 0-10Vdc output:



**NB** Ensure that the jumper is fitted to the lower 2 pins on J3.

### Trend scaling

(-10 to +40°C)

4-20mA		0-10Vdc	
<b>Brange</b>	-85	<b>Brange</b>	-60
<b>Trange</b>	40	<b>Trange</b>	40
<b>Upper</b>	40	<b>Upper</b>	40
<b>Lower</b>	-10	<b>Lower</b>	-10
<b>Exp</b>	3	<b>Exp</b>	3

Thermistor (10K3A1 TYPE 2 linearise thermistor volts)

(-10 to +40°)

<b>Brange</b>	-10
<b>Trange</b>	40
<b>F</b>	8.47
<b>G</b>	7.42
<b>H</b>	6.11
<b>I</b>	4.73
<b>J</b>	3.48