



Features & Benefits

- Wide range of sensing element types
- Black bulb to measure radiant heat
- Greater comfort

Technical Overview

The TT-635 range of black bulb temperature sensors are used for radiant heat in outdoor spaces. Black bulb temperature sensors are used to calculate comfort temperature which is specified as the average of the conductive and the radiant temperature. Units contain either a high quality thermistor, Nickel or Platinum sensing element.

Product Codes

TT-635 External Black Bulb Sensor

Sensing Element (add type to above code)

Passive output:

-A	(10K3A1) Trend, Cylon, Distech
-B	(10K4A1) Andover,
-C	(20K6A1) Honeywell
-D	(PT100a) Serck
-E	(PT1000a) Cylon
-F	(NI1000a) Sauter
-G	(Ni1000a/TCR(LAN1)) Siemens
-H	(SAT1) Satchwell
-K	(STA1) Landis & Staefa
-L	(TAC1) TAC
-M	(2.2K3A1) Johnson Controls
-N	(3K3A1) Alerton
-P	(30K6A1) Drayton
-Q	(50K6A1) Ambiflex
-S	(SAT2) Satchwell
-T	(SAT3) Satchwell
-W	(SIE1) Siebe
-Y	(STA2) Landis & Staefa
-Z	(10K NTC) Carel
-DC	(10K4A1) Delta Controls

Specification

Output type	Resistive
Accuracy:	
Thermistor	±0.2°C 0 to 70°C
PT100a	±0.2°C @ 25°C
PT1000a	±0.2°C @ 25°C
NI1000	±0.4°C @ 0°C
Housing:	
Material	ABS (flame retardant)
Dimensions	116 x 106 x 52mm
Black bulb:	
Material	Anodised aluminium
Dimensions	17.5 x 37mm dia.
Protection:	
Snap-shut lid	IP54
	IP65 (See installation notes)
Ambient range	-30 to +70°C
Weight	160g
Country of origin	UK

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.

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

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WEEE Directive:



At the end of the products useful life please dispose as per the local regulations.
Do not dispose of with normal household waste.
Do not burn.

Installation

1. Release the snap-fit lid by gently squeezing the locking tab.
2. Feed the cable through the waterproof gland and terminate the cores at the terminal block. Leave some slack inside the unit, tighten the cable gland onto the cable to ensure water tightness.
3. If the sensor is to be mounted outside, it is recommended that the unit be mounted with the cable entry at the bottom. If the cable is fed from above then into the cable gland at the bottom, it is recommended that a rain loop be placed in the cable before entry into the sensor.
4. If the cable is fed from above then into the cable gland at the bottom, it is recommended that a rain loop be placed in the cable before entry into the sensor.
5. Fix the sensor to the wall using appropriate screws. And snap shut the lid after the connections have been made if IP65 protection is required, secure the lid with two screws provided.

Connections

All connections to BEMS 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.

Passive output:

Connections are made via the 2-way terminal block. Connections for thermistor, platinum and nickel sensing elements are polarity independent.