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## TC8t SPECIFICATION, OPERATION & INSTALLATION

### TC8t SPECIFICATION

Specifically designed to mount onto an AA Heating Group electric air heater, either duct mounted or built into an Air Handling Unit.

The TC8t unit acts as a thyristor temperature control panel to control a 220/240V single phase 2 step heater up to 2 x 17A (8kw) with an additional relay and has 5A fused outputs for single phase supply and extract fans up to a maximum of 4A each.

Although the unit has been designed primarily for single phase heater loads up to 8kw, it has a SSR (solid State Relay) output which can be used to control larger 3 phase (380/400V) heater loads up to 24kw

Supply Voltage	220/240Vac 50/60Hz. +/-10%
Output current (maximum)	17A @ 40°C (Ambient)
Temperature sensor	5kΩ @ 25°C (Table 502 IT) combined with air velocity sensor
Temperature control range	0 to 40°C / (0-10V/4-20mA 0-100%)
Supply Fan outputs (5A Fused)	4.5A max FLC
Extract Fan outputs (5A fused)	4.5A max FLC
Run on timer	adjustable from 20 seconds to 3 minutes (factory set at 1.5 minutes)
Control fuse	20 x 5mm 250mA
LED indicators	Power on - Green Fans On - Green Heater On - Amber Airflow Fault - Red
Start Signal	Volt free pair of 230V pair (run HV)
Alternative	0-10V or 4-20mA input setpoint via jumper setting, BMS signal output status
Weight	575 grams (approx.)

### OPERATION

When you power up the heater the power LED will come on and if the remote Run contact is made (linked to come on as standard) the fan LED will come on.

Adjust the set point to about 30°C and the heater pulse LED should come on (this will pulse in proportion to the heat output), if it does not or the fault LED is showing (on some versions) it is likely that no airflow is being detected, check airflow and position of sensor.

When you have confirmed the heater is working, reset the temperature as required, normally 18-22°C.

If you need external control (say a time clock) volt free or separate 230V Run (HV) terminals are provided – See wiring diagram. If you have an external control signal from your BMS, this can be done with TC8t controllers dip-switch – see further instructions.

## **INSTALLATION**

The enclosed heater has built-in pulse control. This system delivers a constant air temperature to the room using the minimum electricity. An air velocity sensor is combined with the duct mounted temperature sensor; it will permit reduced airflow but cut off the heater when the airflow stops.

### **FITTING HEATER TO DUCT**

Firstly, decide where to locate the heater, avoiding close proximity to bends and materials sensitive to heat. Mount the heater using suitable mastic and screws (not provided). Airflow direction is unimportant.

Drill a 20/22mm hole in the duct downstream of the heater (about 1-2 metres) and fit the DTFS duct sensor (small self-drilling screws are ideal). Ensure the arrow moulded on the flange of the sensor points in the direction of flow. Keep the sensor away from objects inside the duct that may cause turbulence.

### **WIRING**

TC8t controllers have single phase fan output available (up to 4.5A running current). If larger or 3 phase fans are used, a separate contactor/overload will be required. Using this output will enable the fan to run on after the heater is switched off (see wiring diagram).

You will need a suitable single phase or 3 phase electricity supply and an isolator switch, about 2 metres from the heater, e.g., 8kw 1 phase will draw 34Amps, 9kw 3 phase will draw 12.6Amps/phase from a typical UK supply. Connect the supply to the terminals provided in the heater terminal box. (This should be done by a competent electrician)

The heater will operate when you switch on the isolator, providing air is flowing along the duct. If it is a small heater without fan connections, you can leave it to work by just detecting airflow only. If you are using the remote ON/OFF & setpoint unit RC1, see separate diagram.