

# TEMPERATURE CONTROLLERS

## TC500 series

### ANALOGUE SETTING TEMPERATURE CONTROLLERS

#### Key Features:

- Robust, metal cased design
- 96 x 96 mm panel size
- High current (20 Amp) switching capability
- Analogue setting of temperature
- Optional 'deviation' meter
- Optional over or under temperature trip relay

The process control temperature is set on a large, rotary dial on the front facia. Three setting ranges are available: 0-250°C, 0-400°C and 0-800°C.

At power up, the TC500 monitors the actual process temperature (by use of a remote thermocouple) and compares this with the temperature set on the front facia. Power to the heaters is then controlled by the TC500's volt-free relay output.

Two front facia LEDs indicate the relay state: 'I' lights when the load relay is energised (process calling for heat); 'O' lights when the relay is de-energised (process cooling).

An optional 'deviation' meter, scaled from -20 to +20°C of set point, indicates the difference between actual and set temperatures. An optional trip relay is also available: this is factory set to trip at a customer specified number of degrees above or below the set temperature, allowing for the remote warning of an excessively hot or cold process temperature.

Each TC500 controller is supplied pre-calibrated for use with one of several thermocouple types (including the most common J and K types). Automatic cold junction compensation and thermocouple break protection are fitted as standard.

Electrical connection is through screw terminals at the rear. Each controller is housed in a robust metal casing, designed for mounting in a DIN standard 96 x 96 mm panel aperture.

Variations on the standard range are also available, such as non-standard supply voltages and solid state relay outputs. Please contact Modex for full details.

#### Standard units are:

- TC500** Standard, basic controller.  
**TC500D** As TC500 plus temperature deviation meter.  
**TC500T** As TC500 plus separate trip relay.  
**TC500DT** As TC500 but with both deviation meter and trip relay.

#### When ordering, please specify:

- Product type number (e.g. TC500)
- Supply voltage (230 or 110 VAC)
- Thermocouple type (J or K type)
- Temperature adjustment range (e.g. 0 - 250°C)
- Trip relay setting ('T' units only, e.g. +10°C of set point)

#### Accessories:

**Thermocouples:** Please call for details of our custom thermocouple service, or refer to section 10 of our catalogue.



#### Specification

##### Power supply:

operating voltages	230V AC (200 – 250V AC) or 110V AC (100 – 125V AC)
power consumption	< 15 VA

##### Control:

standard sensor types	J(Fe/Con) or K(NiCr/NiAl) thermocouples
temperature ranges	0 - 250°C, 0 - 400°C, 0 - 800°C
operating differential	< 50µV (typ. <1°C)
deviation meter range	-20 to +20°C of set point

##### Relay output:

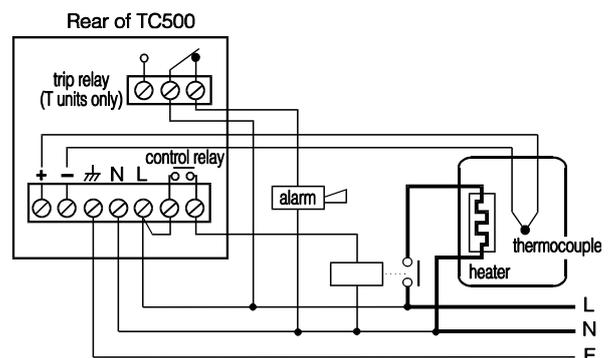
(ratings for resistive load)

SPNO contacts, rated 20A @  
240V AC, 5 x 10<sup>4</sup> operations

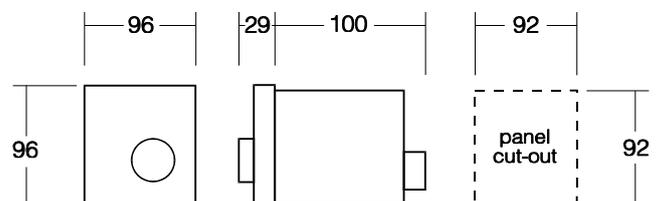
##### Physical:

operating temperature	-10 to +55°C
weight	< 750 g

#### Connection



#### Dimensions (mm)



doc.ref. 080501 issue 2 31/7/97