# Temperature Controller

**48 x 48mm**

## Features :

- **3 Digits, 7 Segment LED singlle display**
- **TC / RTD inputs**
- **ON - OFF / PID control**
- **Auto tuning / Self tuning**
- **Single set point**
- **°C / °F selectable**
- **Field selectable control output (Relay or SSR)**

## Display specifications

| | |
|---|---|
| Display | 3 Digits, 7 Segment LED single display Height of display 10mm |
| LED indications | R : Control output ON |

## Input specifications

| | |
|---|---|
| Inputs | Thermocouple (J, K, T, R, S) / RTD (PT100) |
| Resolution | Fixed 1° |
| Indication accuracy | For J, K & T inputs : 0.25% of F.S. ±1°C For R & S inputs : 0.5% of F.S. ±2°C (20 min of warm up time for TC inputs) For RTD inputs : 0.1% of F.S. ±1°C (F.S. = Full scale) |
| Temperature unit | °C / °F selectable |
| Input filter (FTC) | 0.2 to 10.0sec |
| Sampling time | 250ms |

## Output specifications

| | |
|---|---|
| Relay contact (SPDT) | 10A @ 230V AC / 30V DC, Resistive |
| SSR drive (Voltage pulse) | 12V DC, 30mA |

## Functional specifications

| | |
|---|---|
| Control action | 1) PID control with Auto or self tuning 2) ON - OFF control |
| Proportional band (P) | 1 to 400°C, 1.0 to 752.0 °F |
| Integral time (I) | 0.0 to 99.9 min |
| Derivative time (D) | 0 to 999 sec |
| Cycle time | 0.1 to 99.9 sec |
| Hysteresis width | 0.1 to 99.9°C |
| Manual reset value | -19.9 to 19.9°C / °F |

## Auxiliary supply specifications

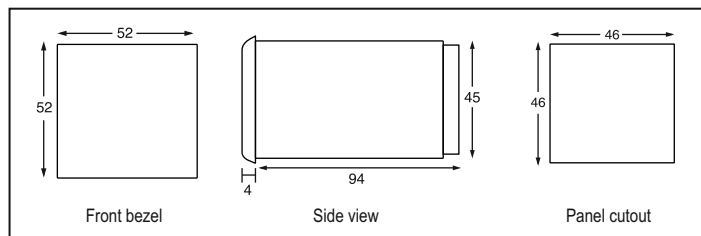| | |
|---|---|
| Supply voltage | 90 to 270V AC / DC (50 / 60Hz) |
| Power consumption | 6 VA max @ 230V AC |

## Environmental specifications

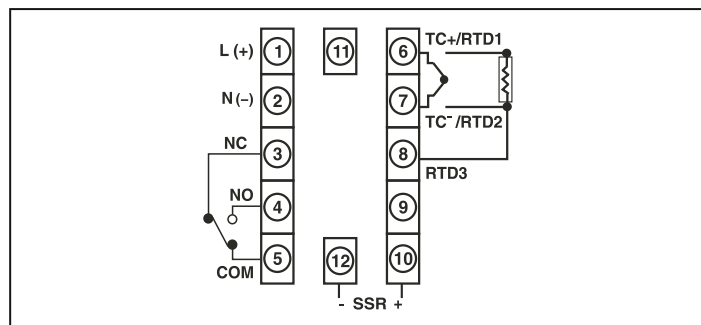| | |
|---|---|
| Temperature | Operating : 0 to 50°C (32 to 122°F) Storage : 20 to 75°C (-4 to 167°F) |
| Humidity (non - condensing) | 95% RH |

## Mechanical specifications

| | |
|---|---|
| Mounting | Panel |
| Weight | 111 gms |

## Dimensions (All are in mm)



Front bezel        Side view        Panel cutout

## Terminal connections



## Ordering information

| Product code | Output 1 | | Supply voltage | Certification |
|---|---|---|---|---|
| **TC513CX** | RELAY | SSR | 90 - 270V AC / DC | --- |

## Accessories (Optional)

Standard SELEC accessories that can be used with this product.

| Adapter plate |
|---|
| 1) AP7248 : Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48) Instrument into existing (72 x 72) cutout size. |
| 2) AP9648 : Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48) Instrument into existing (96 x 96) cutout size. |
| 3) AP4896-4848-G-C : Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48) Instrument into existing (48 x 96) cutout size. |

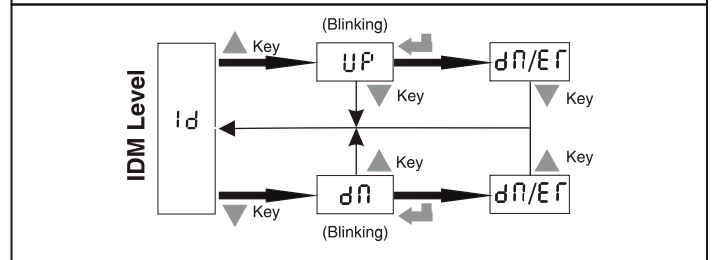## Mounting accessories (Supplied with units)

| | |
|---|---|
| For 48 x 48 Collar clamp | ACL4802 |

**Input sensor ranges (For TC / RTD inputs)**

| Sensor type | Resolution | Ranges |
|---|---|---|
| | | 1 |
| PT100 | ℃ | -150 to 850 |
| | ℉ | -199 to 999 |
| J | ℃ | -199 to 750 |
| | ℉ | -199 to 999 |
| K | ℃ | -199 to 999 |
| | ℉ | -199 to 999 |
| T | ℃ | -199 to 400 |
| | ℉ | -199 to 750 |
| R & S | ℃ | 0 to 999 |
| | ℉ | 32 to 999 |

**Independent Downloader module (IDM)**



| IDM Level | |
|---|---|
| Display | Parameter Description |
| Id | Independent Downloader Module |
| UP | Upload from product to IDM |
| dL | Download from IDM to product |
| dn | Operation Successful |
| Er | Operation unsuccessful |