



Temperature Controller

RE96/RE57/RE77



Measure



Control



Record



Analyze



Compact Temperature Controller

RE57, RE77 & RE96 are specially designed for universal input measurement from RTD , Thermocouple , Linear input .
The controller is equipped with Innovative smart PID & Dual display for PV & SP.

- ▼ Universal measuring input
- ▼ On/Off Control, PID Control
- ▼ Auto-Tuning Function
- ▼ Relay output or SSR output
- ▼ 4 digit Dual display
- ▼ Timer Function



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Temperature Controller

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The controller is designed for the temperature control. Controller works directly with the resistance sensors or thermoelectric sensors or analog input. The controller is equipped with outputs that allows for control and alert signalization. Control output can be programmed for PID or ON/OFF algorithm.

Applications:

- Plastics Industries
- Food Industries
- Dehydration Industries

Product Features:

Programmable input temperature sensors:

- ▶ RTD : PT100(2 or 3 wire), Pt1000.
- ▶ Thermocouple: J,T,K,S,R,B,N,E.
- ▶ Analog Input(0/4-20mA,0-5/10V).

Configuration through:

- ▶ Front keys.

Measurement are available on:

- ▶ Dual 4 digit 7 segment display for PV & SP.

Control Output:

- ▶ Control Method : ON-OFF ,PID .
- ▶ Type of control output : Relay or SSR

Alarm Output:

- ▶ Different Alarm modes available.
- ▶ Type of alarm output : Relay or SSR.

Auto Tunning Function

- ▶ *Auto tuning of PID Parameters.*

Manual mode

- ▶ *Output can be controlled manually.*

Output on Failure

- ▶ User can set the value for safe operation of process on failure of input sensor

Input Digital filter

- ▶ The time constant of the filter can be set from 0 to 999.9sec.

Heating / Cooling control

- ▶ *Output can be configured as Heating or Cooling control.*

Timer Function

- ▶ Output can be configured for timer function.
- ▶ Timer output can be assigned to following functions
 - 1.Stop Control Output
 - 2.Switch to Manual Mode
 - 3.Start Auto Tunning
 - 4.Stop Auto tuning

Enclosure Protection for dust and water:

- ▶ Conforms to IP 54 for front face and IP 20 for terminal side as per IEC 60529.

Compliance to International Safety standards

- ▶ Compliance to International Safety standard IEC 61010-1- 2010.

EMC Compatibility

- ▶ Compliance to International standard IEC 61326.



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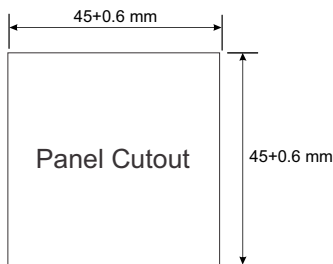
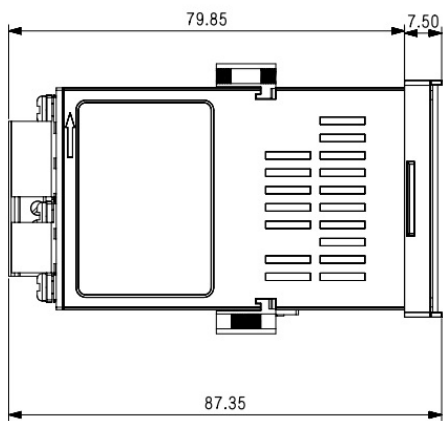
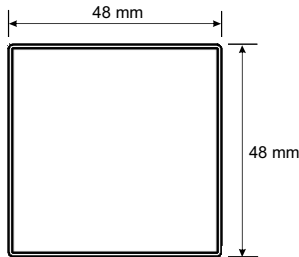


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Temperature Controller

RE96/RE57/RE77

Dimensions Details RE 57 :



Technical Specifications:

Input Signals:

| Input type | Ranges | |
|----------------------|----------------------------|-------------------------------|
| Pt100 | -200 ... 850°C | -328 ... 1562°F |
| Pt1000 | -200 ... 850°C | -328 ... 1562°F |
| Fe-CuNi (J) | -100 ... 1200°C | -148 ... 2192°F |
| Cu-CuNi (T) | -100 ... 400°C | -148 ... 752°F |
| NiCr-NiAl (K) | -100 ... 1372°C | -148 ... 2501.6°F |
| PtRh10-Pt (S) | 0 ... 1767°C | 32 ... 3212.6°F |
| PtRh13-Pt (R) | 0 ... 1767°C | 32 ... 3212.6°F |
| PtRh30-PtRh6 (B) | 0 ... 1767°C ¹⁾ | 32 ... 3212.6°F ¹⁾ |
| NiCrSi-NiSi (N) | -100 ... 1300°C | -148 ... 2372°F |
| NiCr-CuNi (E) | -100... 1000 °C | -148 ... 1832°F |
| Current channels (I) | 0 / 4 ... 20 mA | |
| Voltage channels (V) | 0 ... 5 / 10 V | |

¹⁾ Intrinsic error is related to measuring range: 200 ... 1767 °C (392 ... 3212.6 °F)

Measurement time: 0.2 sec

Auxiliary Supply:

| | | |
|-----------------------------|---------------------------------------|---------------------|
| Higher Aux | 60 V – 280 V AC/DC | |
| Higher Aux supply frequency | 45 to 65 Hz range | |
| Higher Aux Nominal Value | 230 V AC/DC | 50/60 Hz for AC Aux |
| | OR | |
| Lower Aux | 20 V – 60V DC / 20 V – 40V AC | |
| Lower Aux supply frequency | 45 to 65 Hz range | |
| Lower Aux Nominal Value | 48 V DC / 24 V AC 50/60 Hz for AC Aux | |

VA Burden:

Auxiliary Supply burden < 6VA approx.

Types of outputs:

| | |
|----------------------------|-----------------------------------|
| Relay contact | SPST-NO, rated load: 5 A/230 V |
| SSR drive output(optional) | 5 V, maximum load capacity: 40 mA |

Accuracy :

| | |
|----------------------|---|
| Reference Conditions | 23°C |
| RTD | 0.3% of range |
| Thermocouple | 0.3% of range (0.5% of range - for B,R,S) |
| Analog input | 0.2% of range ± 2 digit |

Influence of Variations:

| | |
|-------------------------|--------------|
| Temperature coefficient | |
| RTD | 0.025% / Deg |
| Thermocouple | 0.025% / Deg |
| Voltage | 0.05% / Deg |
| Current | 0.025% / Deg |

Applicable Standards:

| | |
|------------------------|--|
| EMC immunity | IEC 61326 - 1 : 2012, Table 2* |
| Safety | IEC 61010-1-2010 , Permanently connected use |
| IP for water & dust | IEC60529 |
| Pollution degree: | 2 |
| Installation category: | II |

*Note:- The instrument continues to operate at a measuring accuracy of within ± 2% of the range during test.



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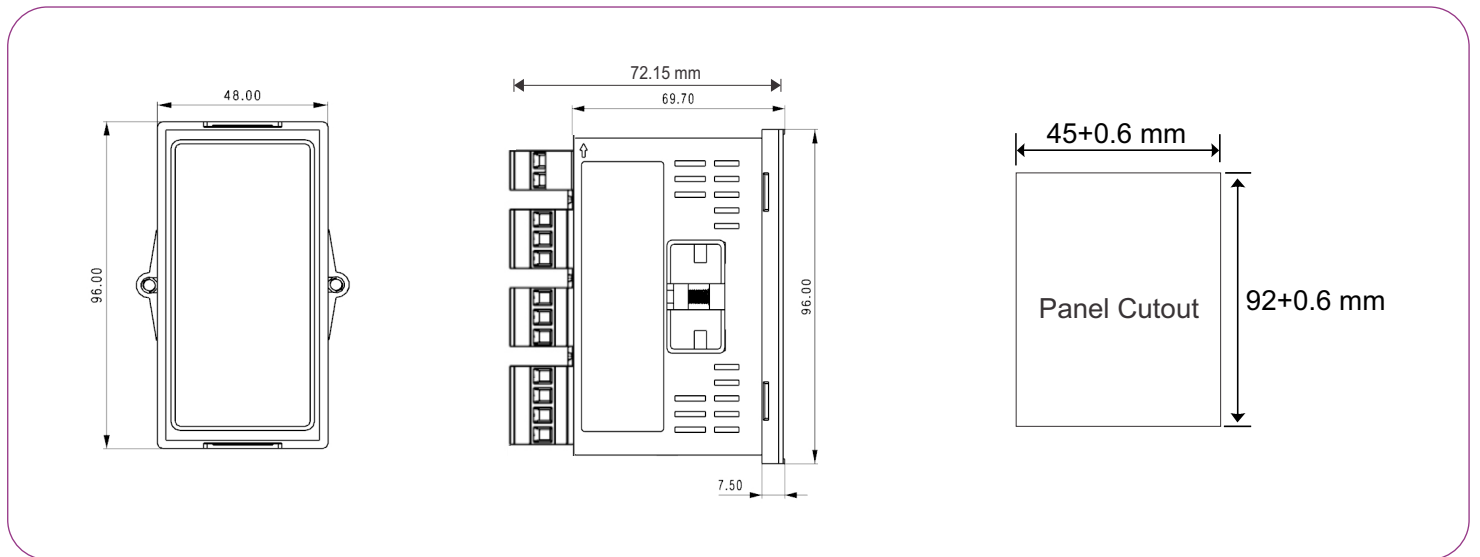


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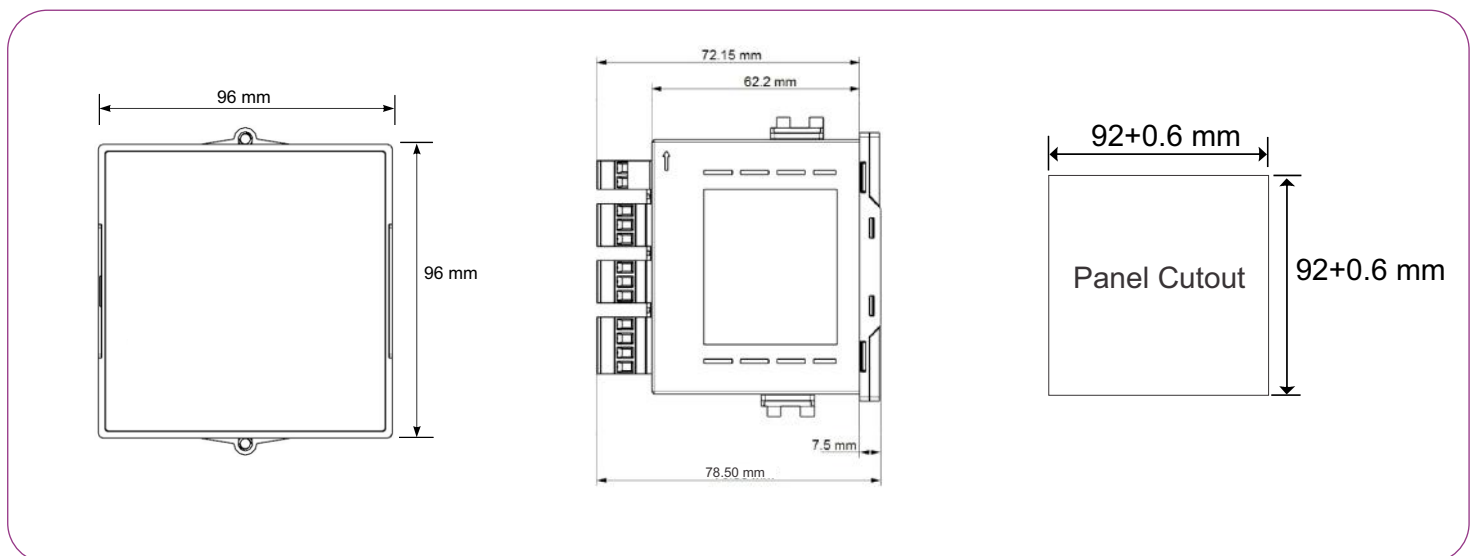


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Dimensional Details RE 77 :



Dimensional Details RE 96 :



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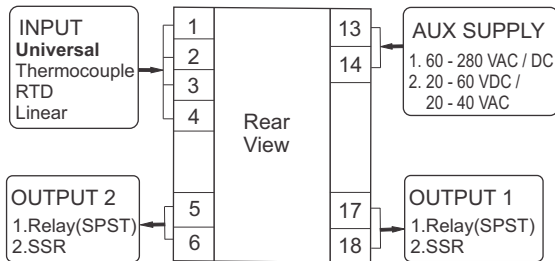


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Main I/O Function



Technical Specifications:

Isolation:

| | |
|----------------------------------|-----------------------|
| Protective Class | 2 |
| High Voltage Test | |
| Input+Output+Aux Vs Surface | 2.2kV RMS, 50Hz, 1min |
| Input+SSR Output Vs Relay output | 2.2kV RMS, 50Hz, 1min |
| Aux Vs Remaining circuit | 2.2kV RMS, 50Hz, 1min |

Environmental:

| | |
|---------------------------------|---|
| Operating temperature | -20 to +70°C |
| Storage temperature | -30 to +80°C |
| Relative humidity | 0... 90%RH (non condensing) |
| Warm up time (Pre-conditioning) | 20 minute |
| Shock (As per IEC60068-2-27) | Half sine wave, Peak acceleration 30g _n (300 m/s ²), duration 18ms. |
| Vibration | 10... 150...10 Hz, 0.15mm amplitude |
| Number of Sweep cycles | 10 per axis |
| Enclosure front face | IP 54 |
| terminal side | IP 20 |

Additional Error
(Cold Junction Compensation for thermocouple) ≤ 2 °C

Dimensions and Weight:

RE 57

| | |
|---------------|---------------------------|
| Bezel Size | 48 mm X 48 mm DIN 43718 |
| Panel Cut-out | 45 + 0.6 mm X 45 + 0.6 mm |
| Weight | Approx. 0.3 Kg |

RE 77

| | |
|---------------|---------------------------|
| Bezel Size | 48 mm X 96 mm DIN 43718 |
| Panel Cut-out | 45 + 0.6 mm X 92 + 0.6 mm |
| Weight | Approx. 0.35 Kg |

RE 96

| | |
|---------------|---------------------------|
| Bezel Size | 96 mm X 96 mm DIN 43718 |
| Panel Cut-out | 92 + 0.6 mm X 92 + 0.6 mm |
| Weight | Approx. 0.6 Kg |



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