



## Features

- Selectable sensor Input (T/C & RTD)
- Control Action : T.P Control / ON-OFF
- Input Signal Conditioning (Digital Filter & Offset)
- Selectable Control Output (Relay / SSR Drive)
- Program Lock function
- Alarm Acknowledge function
- Alarm Inhibit function
- Time Delay for Compressor
- Universal supply voltage (90 ~ 270 VAC)
- 24 VDC Available on Request

## Technical Specifications

### Display Specification

|                |  |         |         |         |
|----------------|--|---------|---------|---------|
| Digits         | 4 Digits Dual Row<br>7 Segment LED Display       |         |         |         |
| LED Indication | 1 - Control Output Status<br>2 - Output 2 Status |         |         |         |
| Height         | Model  | AI-5442 | AI-5742 | AI-5942 |
|                | PV (White)                                       | 0.36"   | 0.56"   | 0.56"   |

### Keys

4 Controlling keys for configuration and operation

SET  SHIFT  UP  DOWN 

### Auxiliary Supply Specification

|                |   |
|----------------|---|
| Supply Voltage | 90 - 270 VAC<br>(24 VDC Available on Request) |
|----------------|---|

### Input Specification

|                        |   |
|------------------------|---|
| Sensor Input           | Thermocouple - J, K, R, S<br>RTD - Pt-100 |
| Resolution             | T/C - 1°C<br>Pt-100 - 1°C / 0.1°C         |
| Accuracy               | 0.3% FSD                                  |
| Temperature Unit       | °C / °F                                   |
| Sampling Rate          | 250 m Sec                                 |
| CJC Error              | ± 2°C                                     |
| Sensor Open            | All Input                                 |
| Sensor Burnout Current | 1.10uA                                    |
| RTD Excitation Current | 0.2mA                                     |
| Input Impedance        | >1M                                       |
| Max Voltage            | 20 VDC                                    |



Make In India



Accurate



Reliable



Affordable



User Friendly

## Output Specification

|                |                                 |
|----------------|---------------------------------|
| Control Output | Relay / SSR Drive (Factory Set) |
| Output 2       | Relay / SSR Drive (Factory Set) |
| Relay          | 5A @ 250 VAC / 30 VDC           |
| SSR Drive      | 12 VDC @ 30mA                   |

## Environmental Specification

|             |                         |
|-------------|-------------------------|
| Temperature | Operating - 0 to 50°C   |
| Storage     | -20° to 75°C            |
| Humidity    | 95% RH (Non-condensing) |
| Protection  | IP 65 (Front Side)      |

## Certification

None

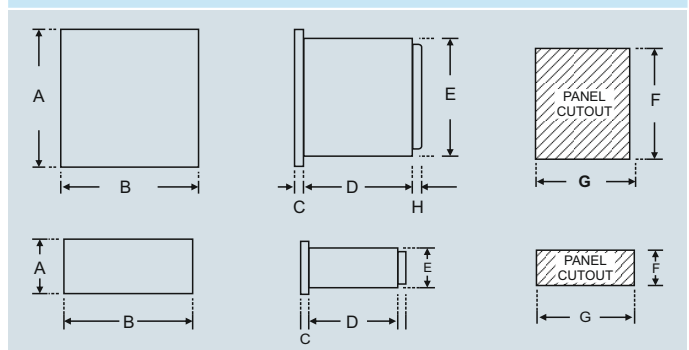
## General Description

|                     |  |         |         |
|---------------------|--|---------|---------|
| Model               | AI-5442  | AI-5742 | AI-5942 |
| Weight (Gms)        | 140  | 190     | 260     |
| Enclosure           | Molded ABS   |         |         |
| Color               | Black  |         |         |
| Accessories         | 1 Pair of Mounting clamp                                 |         |         |
| Terminal Cable Size | Barrier Type terminal cable Size ( 2.5 mm <sup>2</sup> ) |         |         |

## Functional Specification

|                   |  |
|-------------------|--|
| Control Action    | T.P. Control / ON-OFF                                  |
| Control Logic     | Heat / Cool  |
| Proportional Band | 0.5 to 99.9°C  |
| Cycle Time        | 1.0 to 100.0 sec                                       |
| Hysteresis        | J, K, R, S, RTD - 1 to 100°C<br>RTD.1 - 0.1 to 100.0°C |
| Delay             | 0 to 500 sec   |
| Output 2 Function | Auxiliary / Alarm                                      |
| Alarm Modes       | Low / High / Deviation / Band                          |

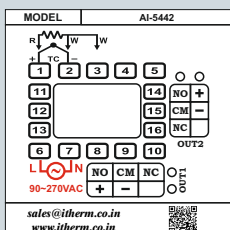
## Mechanical Dimensions



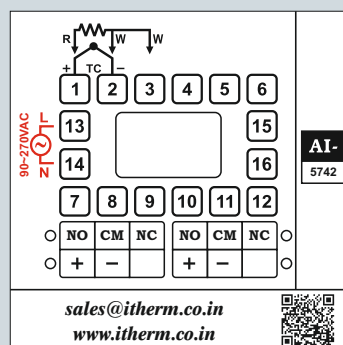
## Mechanical Dimensions

| Model   | Dim | A  | B  | C  | D  | E  | F  | G  | H |
|---------|-----|----|----|----|----|----|----|----|---|
| AI-5442 |     | 48 | 48 | 8  | 75 | 43 | 44 | 44 | 9 |
| AI-5742 |     | 72 | 72 | 10 | 45 | 66 | 68 | 68 | 9 |
| AI-5942 |     | 96 | 96 | 10 | 45 | 89 | 92 | 92 | 9 |

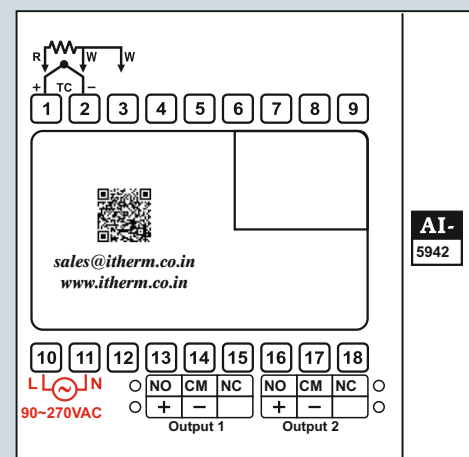
## Terminal Diagram



AI-5442



AI-5742



AI-5942

## Order Code : AI-5XXX Series

| Control Action  | Size         | No. Of Digits | No. of Output | O/P1 Type     | O/P2 Type     |
|-----------------|--------------|---------------|---------------|---------------|---------------|
| 5 (ON-OFF / TP) | 4 (48X48X70) | 4 Digits      | Two           | R (Relay)     | R (Relay)     |
|                 | 6 (96X48X53) |               |               | S (SSR Drive) | S (SSR Drive) |
|                 | 7 (72X72X60) |               |               |               | N (None)      |
|                 | 8 (48X96X53) |               |               |               |               |
|                 | 9 (96X96X53) |               |               |               |               |

## Example : AI-5742-R-R

| Control Action | Size         | No. Of Digits | No. of Output | O/P1 Type | O/P2 Type |
|----------------|--------------|---------------|---------------|-----------|-----------|
| 7              | 7            | 4             | 2             | R         | R         |
| ON-OFF / TP    | 7 (72X72X65) | 4 Digits      | Two           | R (Relay) | R (Relay) |

## Input Sensor Range

| Sensor Input            | Range            | Resolution | Accuracy |
|-------------------------|------------------|------------|----------|
| Thermocouple ( J ) Type | 0 ~ 760 °C       | 1 °C       | ± 1 °C   |
| Thermocouple ( K ) Type | -99 ~ 1300 °C    | 1 °C       | ± 1 °C   |
| Thermocouple ( R ) Type | 0 ~ 1700 °C      | 1 °C       | ± 1 °C   |
| Thermocouple ( S ) Type | 0 ~ 1700 °C      | 1 °C       | ± 1 °C   |
| Pt-100(RTD)             | -100 ~ 450 °C    | 1 °C       | ± 1 °C   |
| Pt-100(RTD.1)           | -99.9 ~ 450.0 °C | 0.1 °C     | ± 0.3 °C |