

# PID Temperature Controller

AI-7482 / 7682 / 7782 / 7882 / 7982



## Features

- Selectable sensor Input (T/C & RTD)
- Control Action : PID Control / ON-OFF
- Input Signal Conditioning (Filter & Offset)
- Program Lock function
- Selectable Control Output (Relay / SSR Drive)
- Selectable Alarm/ Soak Timer Output
- Alarm Acknowledge function
- Alarm Inhibit function
- Battery Backup for Soak Timer
- Programmable soak timer
- Four different start modes for soak timer
- Programmable Setpoint Limits
- Settable soak time delay
- Overshoot Control Protection
- Single Step Ramp Soak
- Time Delay for Compressor
- Universal supply voltage (90 ~ 270VAC)
- 24 VDC Available on Request

## Technical Specifications

### Display Specification

Digits	4 Digits Dual Row 7 Segment LED Display					
LED Indication	1 - Control Output Status 2 - Alarm Status S - Soak Timer T - Tuning Status					
Height	Model	AI-7482	AI-7782	AI-7982	AI-7682	AI-7882
PV (White)		0.36"	0.59"	0.80"	0.36"	0.36"
SV (Green)		0.24"	0.39"	0.56"	0.36"	0.36"

### Keys

4 Controlling keys for configuration and operation



### Auxiliary Supply Specification

Supply Voltage 90 - 270 VAC  
(24 VDC Available on Request)



Make In India



Accurate



Reliable



Affordable



User Friendly

### Input Specification

Sensor Input	Thermocouple - J, K, R, S, N, T, B RTD - Pt-100
Resolution	T/C - 1°C 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

### Output Specification

Control Output	Relay / SSR Drive (User Selectable)
Output 2	Relay / SSR Drive (Factory Set)
Relay	5A @ 250VAC / 30VDC
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
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### General Description

Model	AI-7482	AI-7782	AI-7982	AI-7682	AI-7882
Weight (Gms)	150	210	260	200	200
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> )				

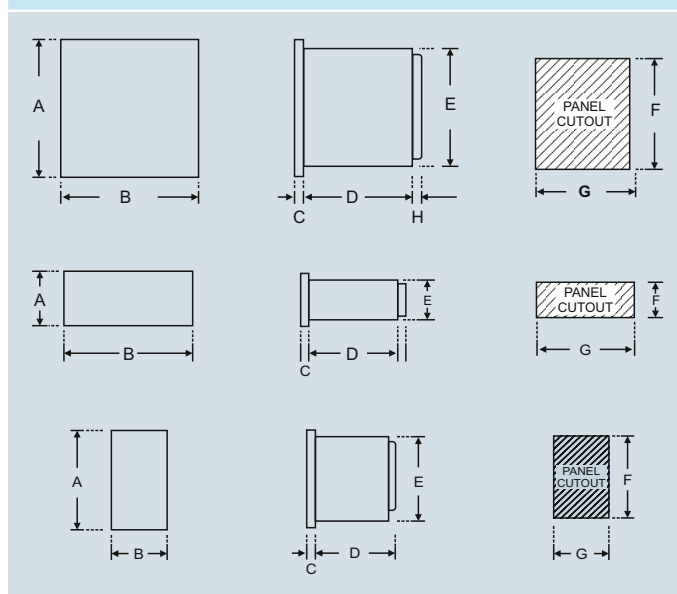
### Functional Specification

Control Action	PID Control / ON-OFF
Control Logic	Heat / Cool
Proportional Band	0.5 to 99.9°C
Integral Time	0 to 3600 sec
Derivative Time	0 to 300 sec
Cycle Time	1.0 to 100.0 sec
Overshoot Control Point	0 to 100%
Output Power Limit	0 to 100%
Hysteresis	J, K, RTD - 1 to 100°C
Delay	0 to 500 sec
Output2 Function	None / Auxillary / Alarm
Alarm Modes	Low / High / Deviation / Band

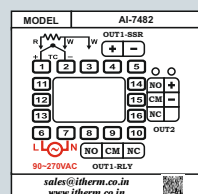
### Mechanical Dimensions

Model	Dim A	B	C	D	E	F	G	H
AI-7482	48	48	8	75	43	44	44	9
AI-7782	72	72	10	45	66	68	68	9
AI-7982	96	96	10	45	89	92	92	9
AI-7682	96	48	10	45	89	92	44	9
AI-7882	48	96	10	45	43	44	92	9

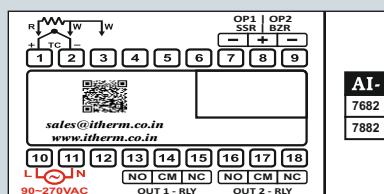
### Mechanical Dimensions



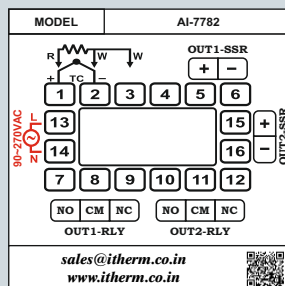
### Terminal Diagram



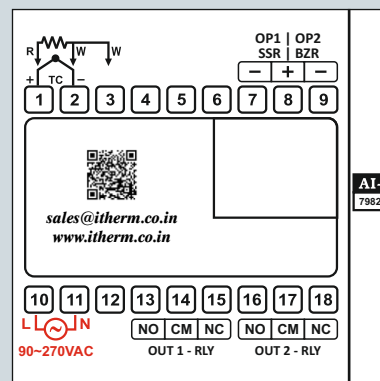
AI-7482



AI-7682/7882



AI-7782



AI-7982

### Order Code : AI-7XXX Series

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

### Example : AI-7782-R-R

Control Action	Size	No. Of Digits	No. of Output	O/P1 Type	O/P2 Type
7	7	8	2	R	N
PID / ON-OFF	7 (72X72X65)	8 Digits	Two	R (Relay)	N (None)

### 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
Thermocouple ( N ) Type	-99 ~ 1300 °C	1 °C	± 1 °C
Thermocouple ( T ) Type	-99 ~ 400 °C	1 °C	± 1 °C
Thermocouple ( B ) Type	0 ~ 1800 °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