

PID Temperature Controller

AI-7441 / 7641 / 7741 / 7841 / 7941



Features

- | | |
|---|--|
| ➤ Selectable sensor Input (T/C & RTD) | ➤ Overshoot Control Protection |
| ➤ Control Action : PID Control / ON-OFF | ➤ Single Step Ramp |
| ➤ Input Signal Conditioning (Filter & Offset) | ➤ Time Delay for Compressor |
| ➤ Programmable Setpoint limit | ➤ Universal supply voltage (90 to 270 VAC) |
| ➤ Program Lock function | ➤ 24 VDC Available on Request |
| ➤ Selectable Control Output (Relay / SSR Drive) | |

Technical Specifications

Display Specification

Digits	4 Digits Single Row 7 Segment LED Display				
LED Indication	OP1 - Control Output Status				
Model	AI-7441	AI-7641	AI-7741	AI-7841	AI-7941
Height					
PV (White)	0.36"	0.56"	0.56"	0.56"	0.56"

Output Specification

Control Output	Relay / SSR Drive (User Selectable)
Relay	5A @ 250VAC / 30VDC
SSR Drive	12 VDC @ 30mA

Auxiliary Supply Specification

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

4 Controlling keys for configuration and operation

SET  SHIFT  UP  DOWN 



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
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

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	1 to 100°C
Delay	0 to 500 sec

Environmental Specification

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

Mechanical Dimensions

Model \ Dim	A	B	C	D	E	F	G	H
AI-7441	48	48	8	75	43	44	44	9
AI-7741	72	72	10	45	66	68	68	9
AI-7941	96	96	10	45	89	92	92	9
AI-7641	96	48	10	45	89	92	44	9
AI-7841	48	96	10	45	43	44	92	9

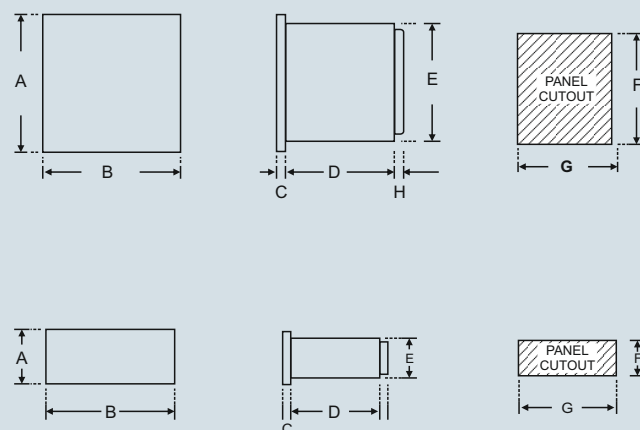
Certification

None

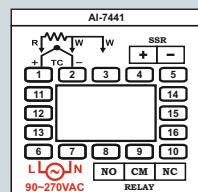
General Description

Model	AI-7441	AI-7641	AI-7741	AI-7841	AI-7941
Weight (Gms)	130	180	190	160	240
Enclosure	Molded ABS				
Color	Black				
Accessories	1 Pair of Mounting clamp				
Terminal Cable Size	Barrier Type terminal cable Size (2.5 mm ²)				

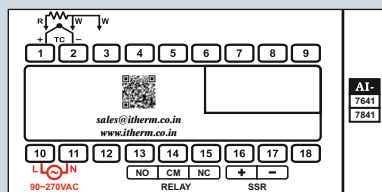
Mechanical Dimensions



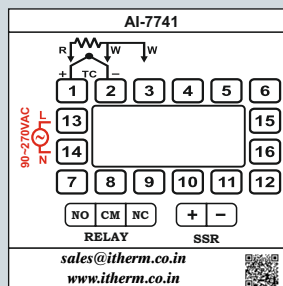
Terminal Diagram



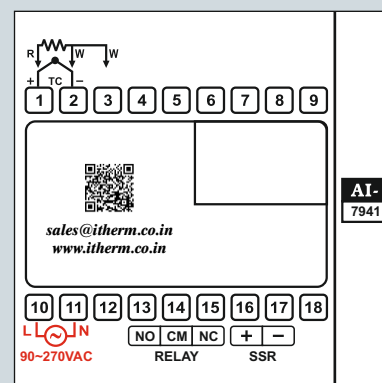
AI-7441



AI-7641/7841



AI-7741



AI-7941

Order Code : AI-7XXX Series

Control Action	Size	No. Of Digits	No. of Output
7 (PID / ON-OFF)	4 (48X48X70)	4 Digits	One
	6 (96X48X53)	8 Digits	Two
	7 (72X72X60)		
	8 (48X96X53)		
	9 (96X96X53)		

Example : AI-7781-R-N

Control Action	Size	No. Of Digits	No. of Output
7	7	8	1
PID / ON-OFF	7 (72X72X65)	8 Digits	One

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