

PROCESS TEMPERATURE CONTROLLER

MULTISPAN PTC- L12



PV = Process value
SV = Set Value

TECHNICAL SPECIFICATION

INPUT SPECIFICATION:

Input Types	Input	Range
	J	0 to 600 °C,
	K	0 to 1200 °C,
	PT-100	-99 to 400 °C,
	PT.1	-99.9 to 400.0 °C,
	0-10V DC	-999 to 9999
	0-20mA DC	-999 to 9999
	4-20mA DC	-999 to 9999
Resolution	J,K,PT-100 = 1 °C	
	PT.1 = 0.1 °C	
	0-10V DC,0-20mA DC,4-20mA DC = 0.1,0.01,0.001,0001	
Indication Accuracy	±1% of FSD ± 1 °C (FSD:- full scale deflection)	

DISPLAY AND KEYS:

Display	128 x 64 Bit Graphical LCD
Keys	SET/ENT, INC, DEC, SCROLL KEY

DIMENSION:

Size	101 (H) x 101 (W) x 54 (D) mm
Panel Cutout	92 (H) x 92 (W) mm

CONTROL METHOD:

Heating	1) PID control with Auto-Tuning 2) ON-OFF control
Cooling	1) BL.TP (Blower Time Proportion) 2) ON-OFF control
Alarm	High / Low / Inband / Outband / Absolute low / Absolute outband

OUTPUT SPECIFICATION

Relay Output	
Relay	2 nos.
Relay Type	1 C/O (NO-C-NC)
Rating	5A, 230V AC/30 V DC
Transmitter supply	
24V DC	

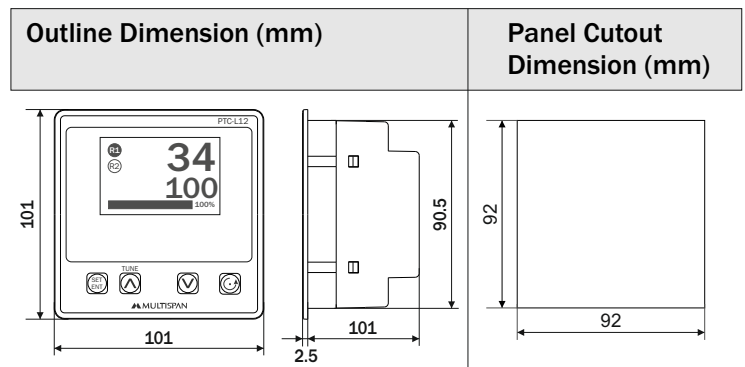
AUXILIARY SUPPLY

Supply voltage	100 to 270V AC, 50-60Hz
Power consumption (VA RATING)	Approx 7 VA @ 230V AC MAX

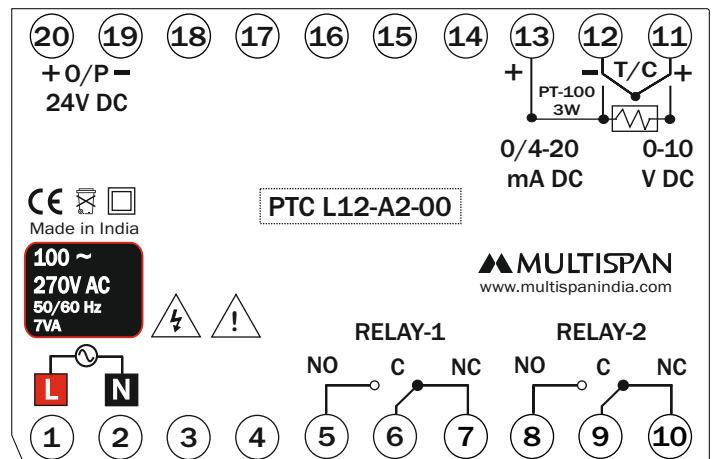
ENVIRONMENT CONDITION

Operating Temp.	0 °C to 55 °C
Relative Humidity	UP to 95% RH (non-condensing)
Protection Level	IP-65 (Front side) As per IS/IEC 60529 : 2001

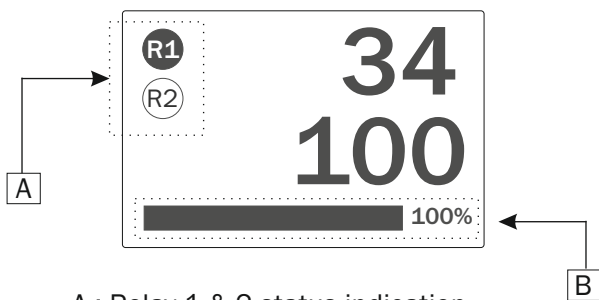
MECHANICAL INSTALLATION



TERMINAL CONNECTION



DISPLAY INDICATION



A : Relay 1 & 2 status indication.
Blinking, When delay time will count.
B : PID Output Indicator

① : This symbol will indicate of alarm or
soak time is counting.

Soak end will display when soak time is completed

Tuning start... : When Auto Tune is Running

KEY OPERATION

FUNCTION	PRESS KEY
OPERATOR MODE	
To enter in parameter setting	Press for 5 sec
For start/stop PID auto tuning	Press 6 sec
To go in factory setting mode	+ Press 3 sec
To Reset soak process	Long Press
PARAMETER SETTING MODE	
To set parameter value	
To increment parameter value.	
To decrement parameter value.	
Set parameter to be save & exit.	



SAFETY PRECAUTION

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If all the equipment is not handled in a manner specified by the manufacturer, it might impair the protection provided by the equipment.



Read complete instructions prior to installation and operation of the unit.



WARNING : Risk of electric shock.

MECHANICAL INSTALLATION GUIDELINES

1. Prepare the panel cutout with proper dimensions as shown above.
2. Fit the unit into the panel with the help of clamp given.
3. The equipment in its installed state must not come in close proximity to any heating source, caustic vapors, oils steam, or other unwanted process byproducts.
4. Use the specified size of crimp terminal (M3.5 screws) to wire the terminal block. Tightening the screws on the terminal block using the tightening torque of the range of 1.2 N.m.
5. Do not connect anything to unused terminals.

MAINTENANCE

1. The equipment should be cleaned regularly to avoid blockage of ventilating parts.
2. Clean the equipment with a clean soft cloth. Do not use isopropyl alcohol or any other cleaning agent.
3. Fusible resistor must not be replaced by operator.

INSTALLATION GUIDELINES

1. This equipment, being built-in-type, normally becomes a part of main control panel and in such cases the terminals do not remain accessible to the end user after installation and internal wiring.
2. Do not allow pieces of metal, wire clippings, or fine metallic fillings from installation to enter the product or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
3. Circuit breaker or mains switch must be installed between power source and supply terminal to facilitate power 'ON' or 'OFF' function. However this mains switch or circuit breaker must be installed at convenient place normally accessible to the operator.
4. Use and store the instrument within the specified ambient temperature and humidity ranges as mentioned in this manual.

WARNING GUIDELINES



WARNING : Risk of electric shock.

1. To prevent the risk of electric shock, power supply to the equipment must be kept OFF while doing the wiring arrangement. Do not touch the terminals while power is being supplied.
2. To reduce electro magnetic interference, use wire with adequate rating and twists of the same of equal size shall be made with shortest connection.
3. Cable used for connection to power source, must have a cross section of 1mm or greater. These wires should have insulations capacity made of at least 1.5kV.
4. When extending the thermocouple lead wires, always use thermocouple compensation wires for wiring for the RTD type, use a wiring material with a small lead resistance (5Ω max per line) and no resistance differentials among three wires should be present.
5. A better anti-noise effect can be expected by using standard power supply cable for the instrument.

FACTORY SETTING

Factory Set

YES

NO

FACTORY SETTING

SR.	PARAMETER	VALUES
1	PB	20.0 °C
2	IT	300
3	DT	75
4	CT	15 sec
5	MR	0 °C
6	OFFSET	0 °C
7	HYSTERESIS-1	2 °C
8	HYSTERESIS-2	3 °C
9	C-PB	4.0 °C
10	C-ON	1 Sec
11	C-OFF	48 Sec
12	CRFC	0

ERROR DISPLAY

When an error has occurred the display indicates error Message as given below.

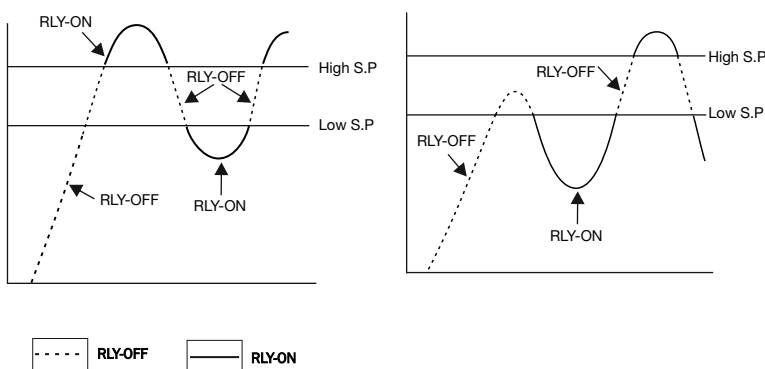
ERROR	MEANING
Sensor Open	Sensor is not connected or Over range condition or sensor break
Sensor Reverse	Sensor connection is reversed
Signal Low Level	When I/P is 4 to 20mA DC is selected, then I/P signal is lower than SLL (0-5mA)

RANGE FOR CONTROL PARAMETER

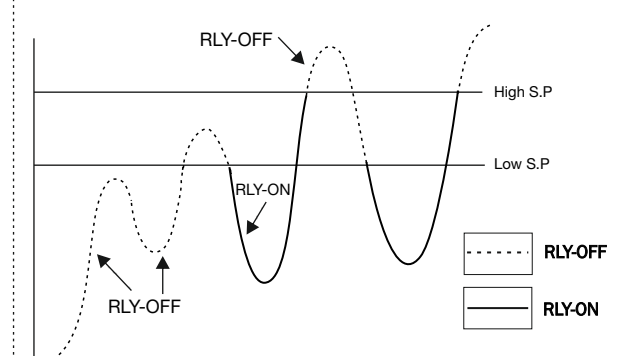
SR.	PARAMETER	RANGE FOR J,K,PT-100	RANGE FOR PT.1 SENSOR	RANGE FOR ANALOG INPUT	
1	PB	0.0 to 999.9 °C	0.0 to 999.9 °C	0.0 to 999.9	
2	IT	0 to 9999	0 to 9999	0 to 9999	
3	DT	0 to 9999	0 to 9999	0 to 9999	
4	CT	4 to 99 sec	4 to 99 sec	4 to 99 sec	
5	MR	-9 to 9 °C	-9.0 to 9.0 °C	DP 3	-0.099 to 0.099
				DP 2	-0.99 to 0.99
				DP 1	-9.9 to 9.9
				DP 0	-99 to 99
6	OFFSET	-20 to 20 °C	-20.0 to +20.0 °C	DP 3	-0.999 to 0.999
				DP 2	-9.99 to 9.99
				DP 1	-99.9 to 99.9
				DP 0	-999 to 999
7	HYS1	1 to 99 °C	1.0 to 99.9 °C	DP 3	0.001 to 0.999
				DP 2	0.01 to 9.999
				DP 1	0.1 to 99.99
				DP 0	1 to 99
8	HYS2	1 to 99 °C	1.0 to 99.9 °C	DP 3	0.001 to 0.999
				DP 2	0.01 to 9.999
				DP 1	0.1 to 99.99
				DP 0	1 to 99
9	C-PB	2.0 to 25.0 °C	2.0 to 25.0 °C	2.0 to 25.0	
10	C-ON	1 to 20 sec	1 to 20 sec	1 to 20 sec	
11	C-OFF	5 to 200 sec	5 to 200 sec	5 to 200 sec	
12	R1DL	0.0 to 99.59 mm.ss	0.0 to 99.59 mm.ss	0.0 to 99.59 mm.ss	
13	R2DL	0.0 to 99.59 mm.ss	0.0 to 99.59 mm.ss	0.0 to 99.59 mm.ss	
14	ALTM	0 to 99 sec	0 to 99 sec	0 to 99 sec	
15	CRFC	-	-	DP 3	-0.999 to 0.999
				DP 2	-9.99 to 9.99
				DP 1	-99.9 to 99.9
				DP 0	-999 to 999
16	FLTR	-	-	0.1 to 10.0 Sec	
17	Signal Low Limit	-	-	0.0 to 5.0 mA	
18	Soak Time	0 to 999 Hour	0 to 999 Hour	0 to 999 Hour	

ALARM OPERATION

ABSOLUTE OUTBAND ALARM

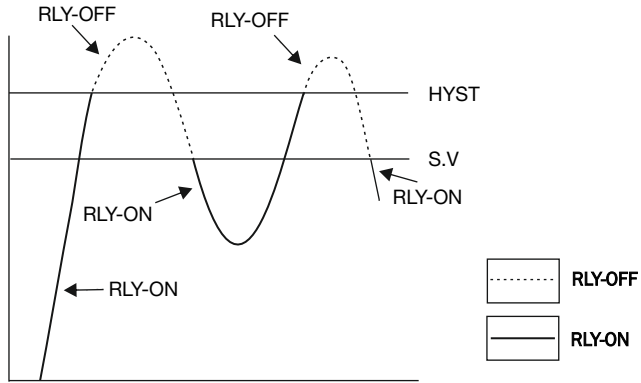


ABSOLUTE LOW ALARM

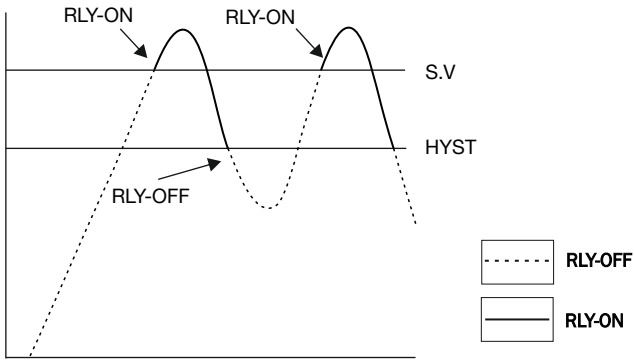


ALARM OPERATION

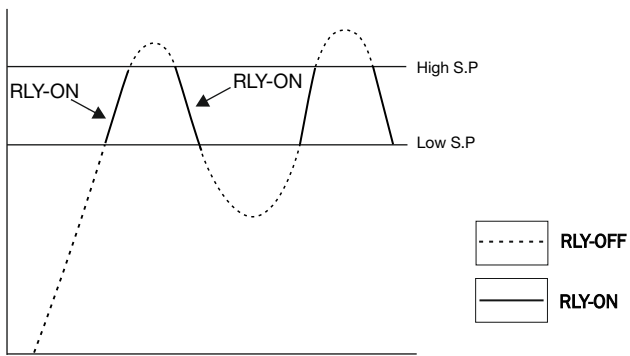
LOW ALARM:



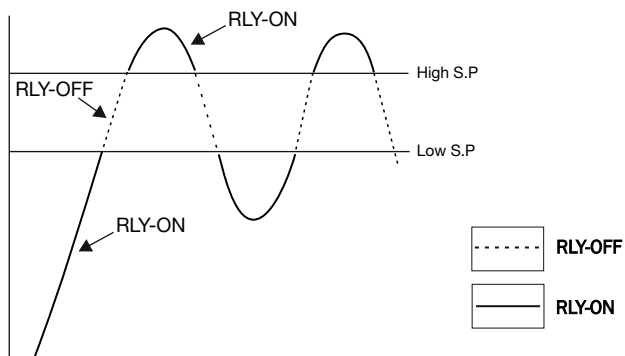
HIGH ALARM:



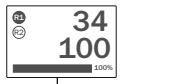
INBAND ALARM



OUTBAND ALARM



SETPOINT SETTING



Press **ENT** to Move the Cursor
From one set point to another
set point & Selected Setpoint
Will Directly Change By or

► Set 1 100
Set 2 125
SET **ENT** **BACK**

OR
► Low Set 1 90
High Set 1 110
Set 2 125
SET **ENT** **BACK**

This Display is Show Only When
Relay 1 is selected as INBAND/
OUTBAND Or ABSOLUTE OUTBAND
Alarm.

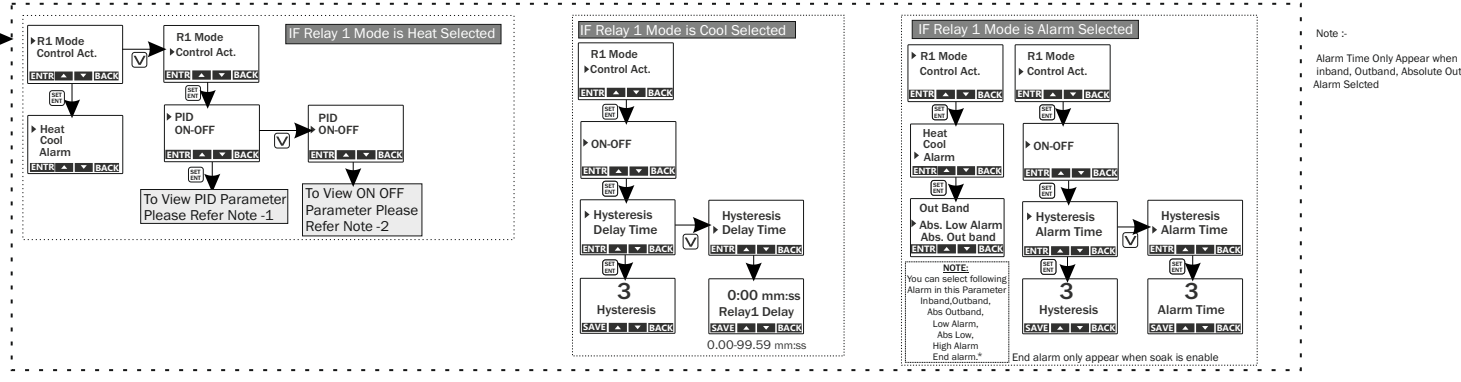
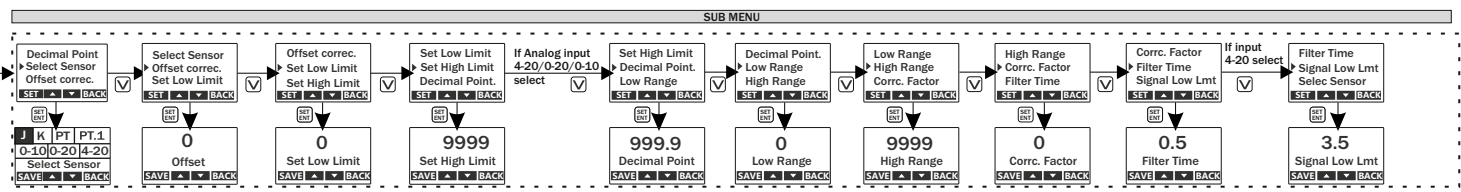
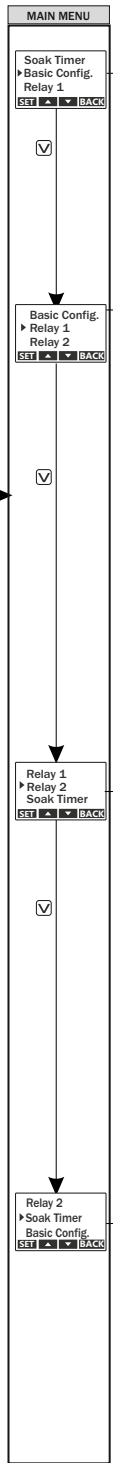
OR
► Set 1 100
Low Set 2 120
High Set 2 130
SET **ENT** **BACK**

This Display is Show Only When
Relay 2 is selected as INBAND/
OUTBAND Or ABSOLUTE OUTBAND
Alarm.

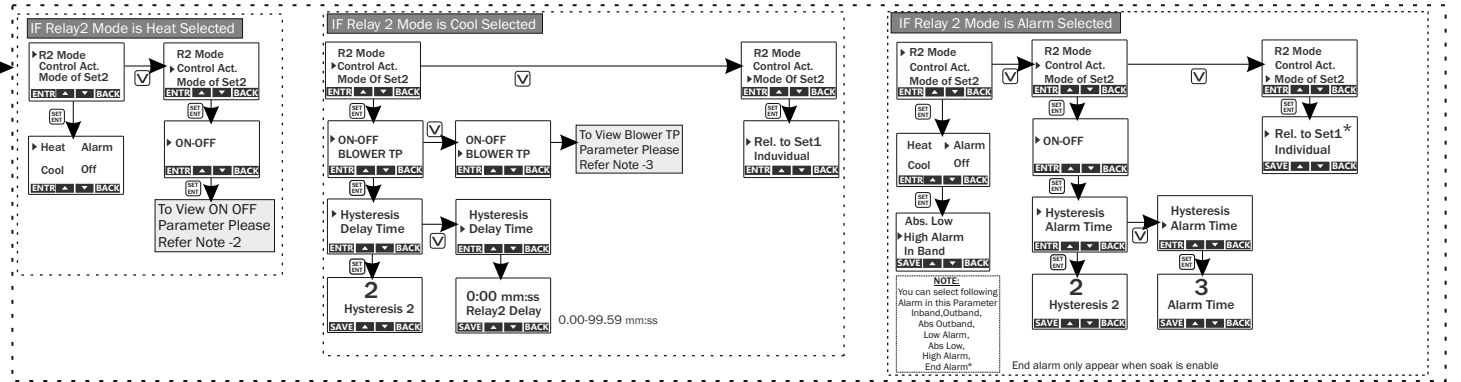
OR
► Low Set 1 90
High Set 1 110
Low Set 2 80
High Set 2 120
SET **ENT** **BACK**

This Display is Show Only When
Relay 1 & Relay 2 both are
selected as INBAND/OUTBAND
Or ABSOLUTE OUTBAND alarm.

Password 73
ENT **ENT** **ENT** for 5 sec to
Enter in to Password



Note :-
Alarm Time Only Appear when
Inband, Outband, Absolute Outband
Alarm Selected



NOTE -1 PID Parameter

► PID ON-OFF
ENT **ENT** **BACK**

► Manual Reset
Propo. band
Integral Time
ENT **ENT** **BACK**

► Propo. band
Derivativ Time
Cycle Time
ENT **ENT** **BACK**

► Integral Time
Manual Reset
Propo. band
ENT **ENT** **BACK**

► Derivativ Time
Manual Reset
Propo. band
ENT **ENT** **BACK**

► Cycle Time
Manual Reset
Propo. band
ENT **ENT** **BACK**

20 Propo. band
300 Integral Time
75 Derivative Time
15 Cycle Time
0 Manual Reset
SAVE **ENT** **BACK**

NOTE -2 ON OFF

► PID ON-OFF
ENT **ENT** **BACK**

► Hysteresis
ENT **ENT** **BACK**

3 Hysteresis 1
SAVE **ENT** **BACK**

NOTE -3 BLOWER TP

► ON-OFF BLOWER TP
ENT **ENT** **BACK**

► Propo. band C ON C OFF
4.0 Propo. band
ENT **ENT** **BACK** **SAVE** **ENT** **BACK**

► Propo. band C ON C OFF
1 Sec C-ON
ENT **ENT** **BACK** **SAVE** **ENT** **BACK**

► Propo. band C ON C OFF
48 Sec C- OFF
ENT **ENT** **BACK** **SAVE** **ENT** **BACK**

Relay 2 Soak Timer Basic Config.

► NO YES
ENT **ENT** **BACK**

► Soak Mode
Soak Unit
Soak Time
Memory
End Save
Soak Mode
Soak Unit
ENT **ENT** **BACK**

Second Minute Houer
5. min Soak Time
NO YES
NO YES
SAVE **ENT** **BACK**

End Save Soak Mode
Soak Unit
Normal Pass Remaining
ENT **ENT** **BACK** **SAVE** **ENT** **BACK**