

TEMPERATURE CONTROLLER

MULTISPAN

UTC-4202



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,
Resolution	J,K,PT-100 = 1 °C PT.1 = 0.1 °C	
Indication Accuracy	±1% of FSD ± 1 °C (FSD:-Full Scale Deflection)	

DISPLAY & KEYS :

Display	Upper: 4 digit, 7 segment, 0.56" Red Lower: 4 digit, 7 segment, 0.33" Green
Key	SET, INC, DEC , ENT

DIMENSION :

Size (mm)	48 (H) x 48 (W) x 95 (D) mm
Panel Cutout	45(H) x 45(W) mm

CONTROL METHOD :

Heating	1) PID control with Auto-Tuning 2) (TP) Time Proportional 3) ON-OFF control
Cooling	(1) BL.TP (Blower Time Proportional) (2) ON-OFF control
Alarm	High/ Absolute Low/Inband/Absolue Outband/End Alarm

POWER SUPPLY:

Supply Voltage	100 to 270V AC, 50-60Hz
Power Consumption (VA Rating)	Approx 4VA @ 250V AC MAX

OUTPUT SPECIFICATION:

Relay Output	
Relay	2 Nos
Relay Type	1C/O (NO-C-NC)
Rating	10A, 230V AC / 28V DC
SSR Drive Output	
Output Signal	12V DC, 30mA DC (On-Off condition)
Relay 1 parallel to SSR	

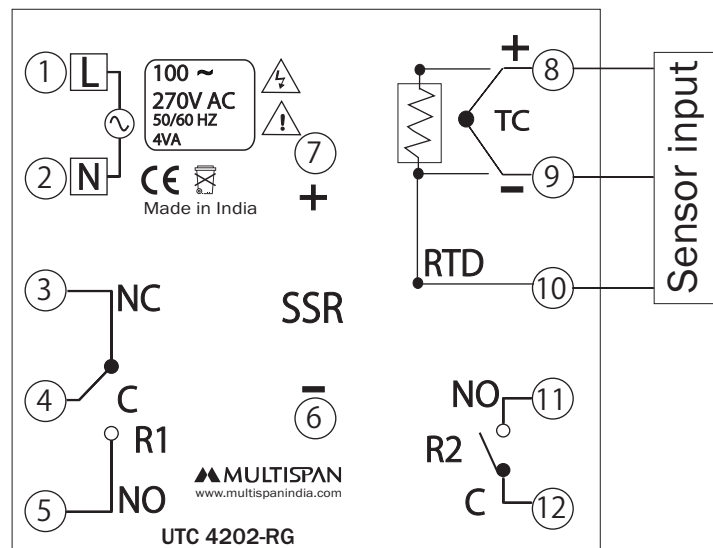
ENVIRONMENT CONDITION:

Operating Temp.	0 °C to 55 °C
Relative Humidity	UP to 95% RH (non-condensing)

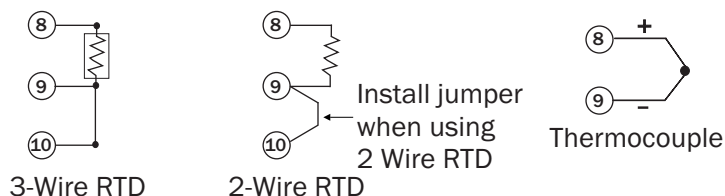
MECHANICAL INSTALLATION

Outline Dimension (mm)	Panel Cutout Dimension (mm)

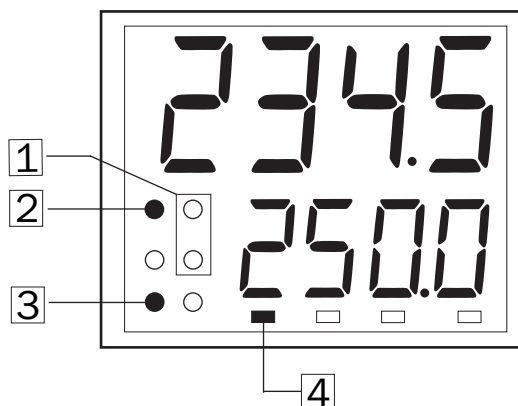
TERMINAL CONNECTION



Sensor Input



STATUS LED DESCRIPTION



- 1 - Soak Time counting indication
- 2 - Relay 1 Control O/P
- 3 - Relay 2 Control O/P
- 4 - Auto Tuning on indication

KEY OPERATION

FUNCTION	PRESS KEY
OPERATOR MODE	
To enter in parameter setting	
For start/stop PID auto tuning	Press 6 sec
To go in factory setting mode	+ For 3 sec
To reset process after soak time end	
PARAMETER SETTING MODE	
To set parameter value and move to the next parameter	
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.

WARNING GUIDELINES



WARNING : Risk of electric shock.

- 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.
- To reduce electro magnetic interference, use wire with adequate rating and twists of the same of equal size shall be made with shortest connection.
- 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.
- A better anti-noise effect can be expected by using standard power supply cable for the instrument.

INSTALLATION GUIDELINES

- This equipment, being built-in-type, normally becomes a part of main control panel and in such case the terminals do not remain accessible to the end user after installation and internal wiring.
- 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.
- 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.
- Use and store the instrument within the specified ambient temperature and humidity ranges as mentioned in this manual.

MECHANICAL INSTALLATION GUIDELINES

- Prepare the panel cutout with proper dimensions as show above.
- Fit the unit into the panel with the help of clamp given.
- The equipment in its installed state must not come in close proximity to any heating source, caustic vapors, oils steam, or other unwanted process by products.
- 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.
- Do not connect anything to unused terminals.

MAINTENANCE

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

FACTORY SETTING

2345
2500

Press + key
for 3 sec

FCSt
YES / NO

YES: press key to apply factory set values as shown in table.

NO: press key to exit from factory setting.

FACTORY SETTING

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

PARAMETER MESSAGE DESCRIPTION

SEt 1	Set Point 1 For O/P 1
SEt 2	Set Point 2 For O/P 2
LO' 1	Low Set Point 1
HI G1	High Set Point 1
LO' 2	Low Set Point 2
HI G2	High Set Point 2
PASS	Password
INPt	Input (Sensor)
SPPS	Soak Passing
SPrG	Soak Remaining
SPtTi	Soak Time Normal
SLL	Set Low Limit
SHL	Set High Limit
OFFSt	Offset
Pb	Proportional Band For PID Action
It	Integral Time Constant
dT	Derivative Time Constant
Ct	Cycle Time For PID Action
Pb2	Proportional Band For TP Action
Ct2	Cycle Time For TP Action
rr	Manual Reset

PARAMETER MESSAGE DESCRIPTION

C-Pb	Cooling PB
C-On	Cooling On Time
C-OF	Cooling Off Time
HYS 1	Hysterisis 1
HYS2	Hysterisis 2
r1 id	Relay 1 Mode
SOAP	Soak Time Select
SPid	Soak Mode
SPUt	Soak Unit
SPtTi	Soak Time Value
TEtT	Soak Time Memory
End	Soak Time End
Ctr 1	Control Action 1
r2 id	Relay 2 Mode
Ctr2	Control Action 2
ALi 1	Alarm 1
ALi2	Alarm 2
S2 id	Set 2 Mode
r1 dL	Relay 1 Delay Time
r2 dL	Relay 2 Delay Time
ALtTi	Alarm Time
PI d	PID Action
tP	TP Action
OnOF	ON-OFF Action
BL tP	Blower TP Action
HIGH	High Alarm
Ab-L	Absolute Low Alarm
In-b	In Band Alarm
Ab-O	Absolute Out Band Alarm
HEAt	Heating Mode
COOL	Cooling Mode
ALrTi	Alarming Mode
OFF	OFF Mode
YES	Yes
NO	No
SAvE	Save
Indi	Set 2 Individual to Set 1
rLtu	Set 2 Reletive to Set 1
SEC	Second
Min	Minute
HOUr	Hour
FCSt	Factory Setting

RANGE FOR CONTROL PARAMETER

Parameter	Range for J, K, PT100	Range for PT.1 sensor
PB	0.0 to 999.9 °C	0.0 to 999.9 °C
IT	0 to 9999	0 to 9999
DT	0 to 9999	0 to 9999
CT	4 to 99 sec	4 to 99 sec
Pb2	2 to 20 °C	2.0 to 20.0 °C
Ct2	4 to 99 sec	4 to 99 sec
MR	-9 to 9 °C	-9.0 to 9.0 °C
OFFSET	-20 to 20 °C	-20.0 to +20.0 °C
HYS1	1 to 100 °C	0.1 to 100.0 °C
HYS2	1 to 100 °C	0.1 to 100.0 °C
C-PB	2.0 to 25.0 °C	2.0 to 25.0 °C
C-ON	1 to 20 sec	1 to 20 sec
C-OFF	5 to 200 sec	5 to 200 sec
R1DL	0.0 to 99.59 (mm.ss)	0.0 to 99.59 (mm.ss)
R2DL	0.0 to 99.59 (mm.ss)	0.0 to 99.59 (mm.ss)
ALTM	0 to 99 sec	0 to 99 sec

ERROR DISPLAY

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

ERROR	MEANING
<i>OPEn</i>	Sensor is not connected or Over range condition or sensor break
<i>SE</i>	Sensor connection is reversed

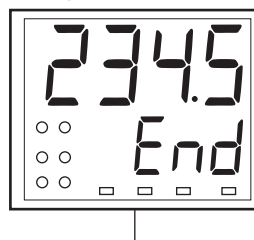
CORRECTIVE ACTION:

Check the sensor and the input wiring. If problem still exists, replace the sensor. And still if problem is not solved yet by the user, then please contact company person

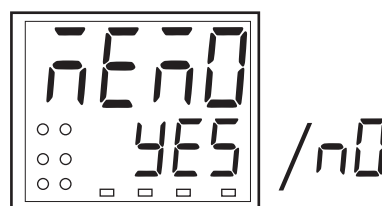
SOAK TIME FUNCTION

- Soak feature can be use to hold the process at a preset temperature for a preset time.
(Range : selectable up to 0 to 999 hour)

- When soak time is completed, then display indicate message as shown below.



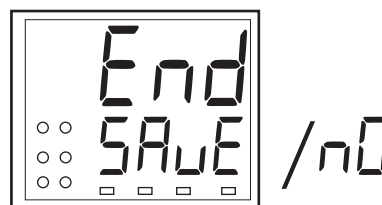
Soak time memory (*nEnD*)



YES : In case of power supply failure, remaining soak time counting will be continued at next power on.

nD : In case of power supply failure, soak time counting will be restarted at next power on.

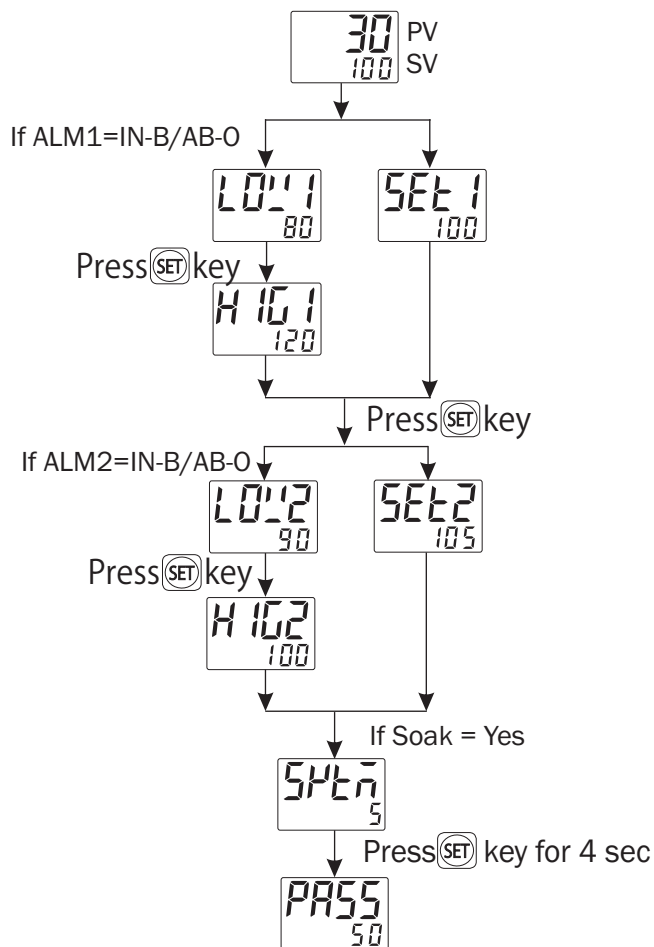
Soak time end (*End*)



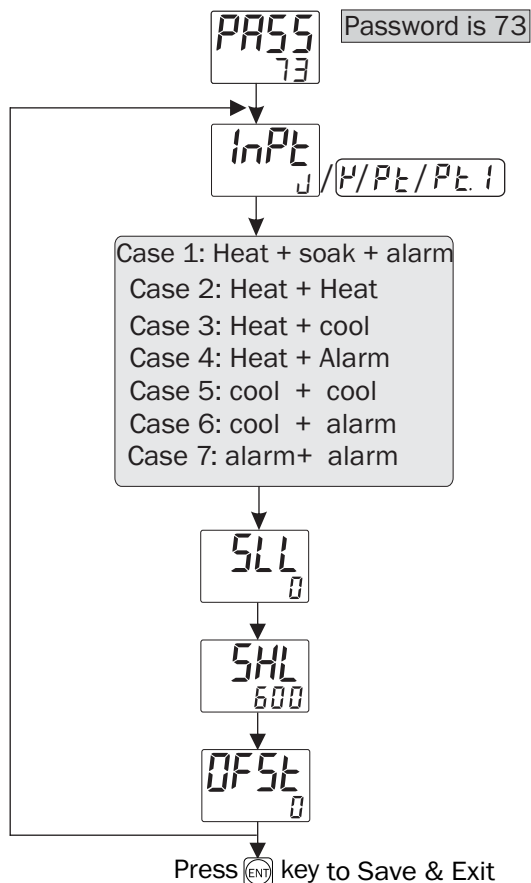
- In case of soak time end, if user apply *SAVE* in configuration then soak time end (*End*) display will still indicate after power supply failure. And that will only reset by pressing key for 3 sec.

PARAMETER SETTING

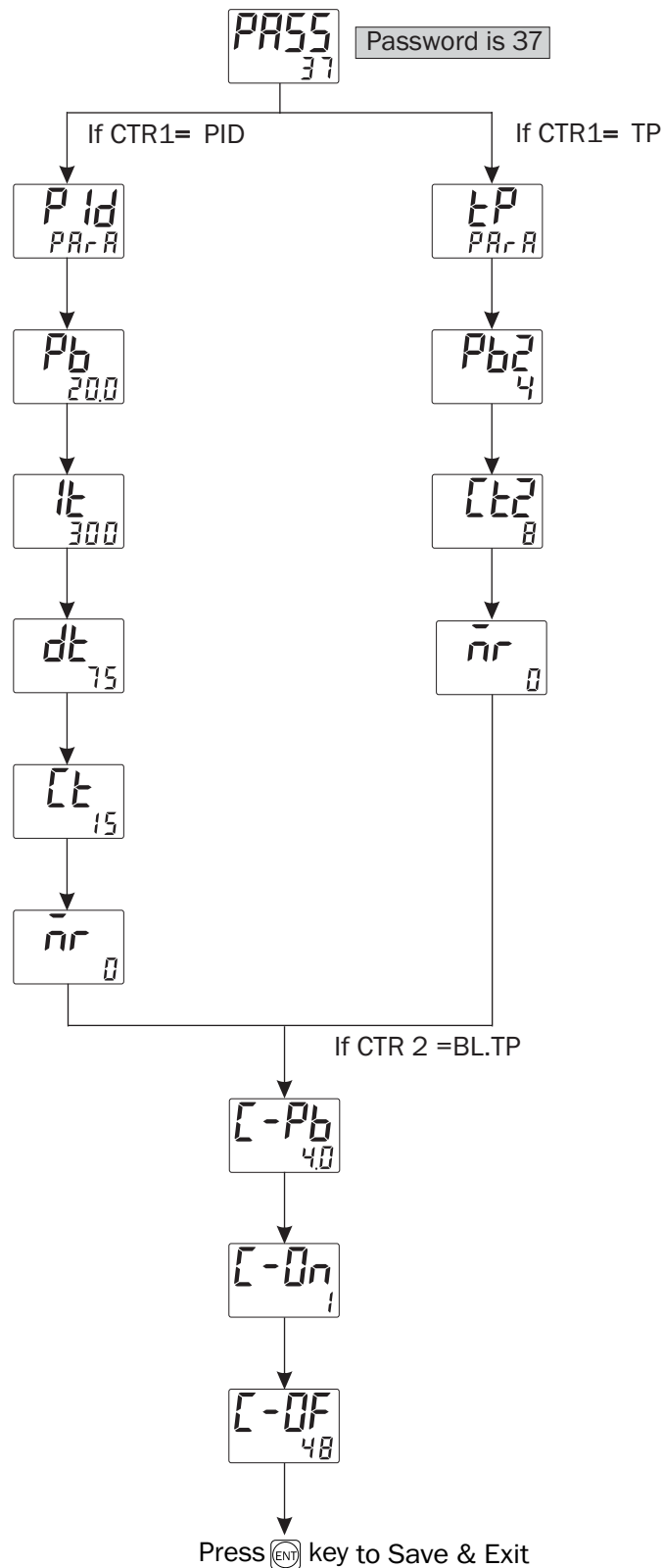
SET POINT SETTING



BASIC CONFIGURATION

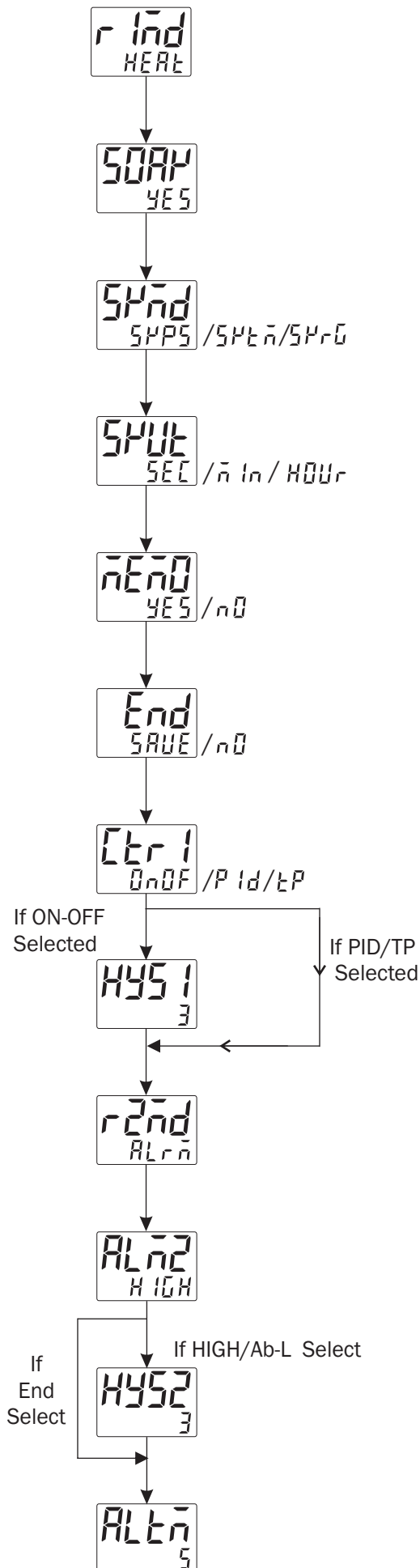


CONTROL PARAMETER SETTING



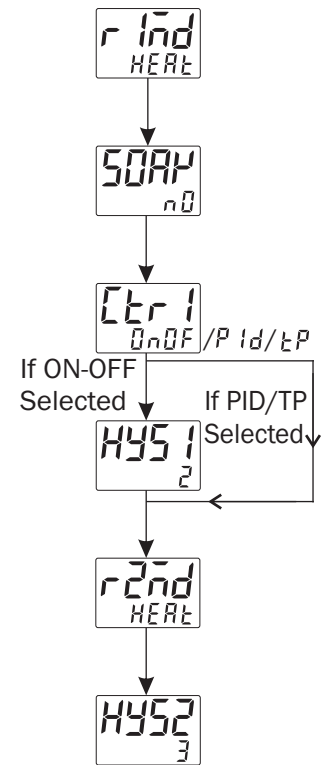
Case - 1

Heat + Soak + Alarm



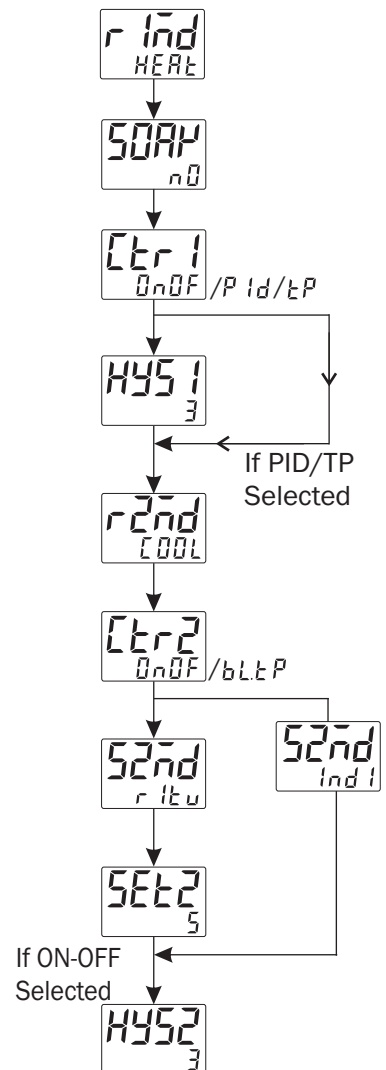
Case - 2

Heat + Heat



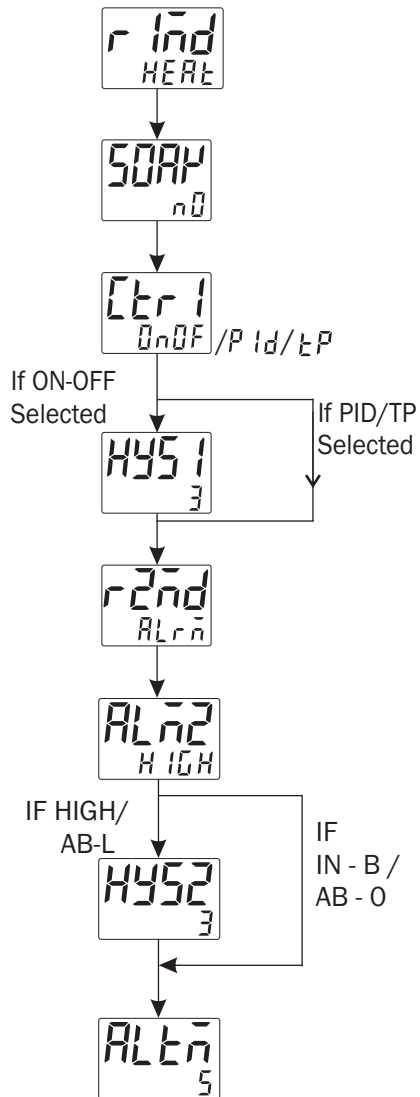
Case - 3

Heat + Cool



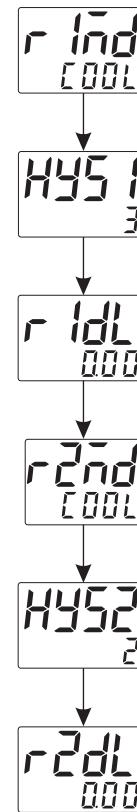
Case - 4

Heat + Alarm



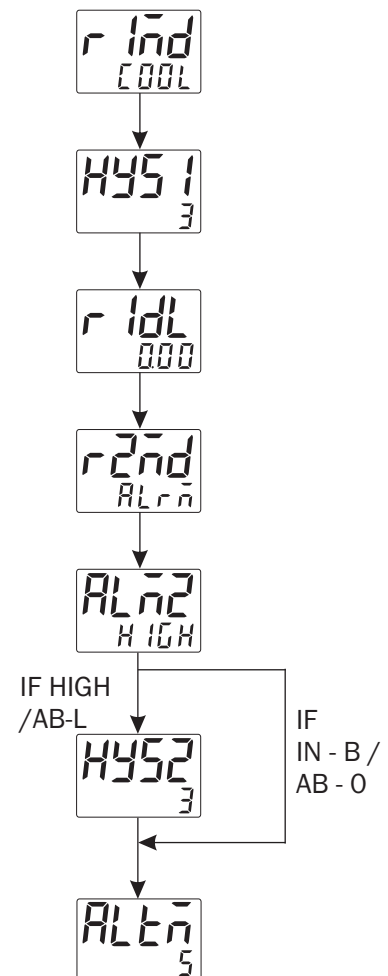
Case - 5

Cool + Cool



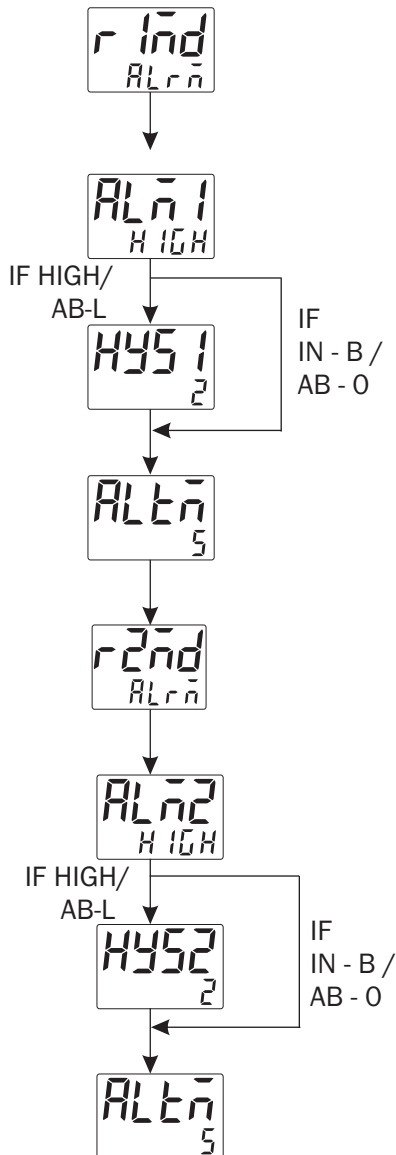
Case - 6

Cool + Alarm



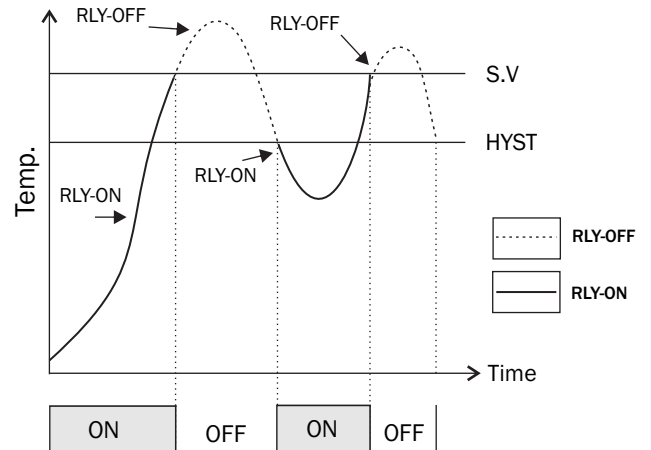
Case - 7

Alarm + Alarm

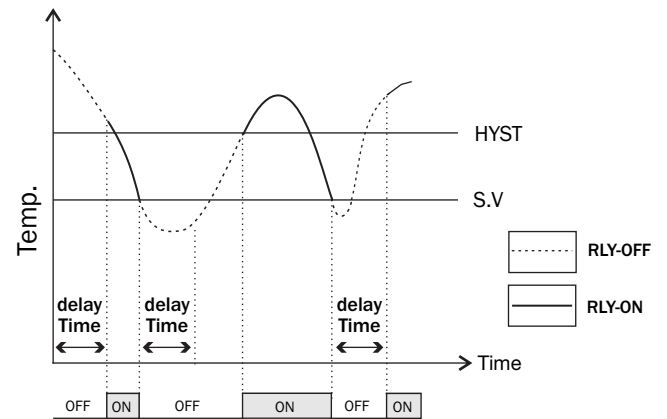


CONTROL FUNCTION

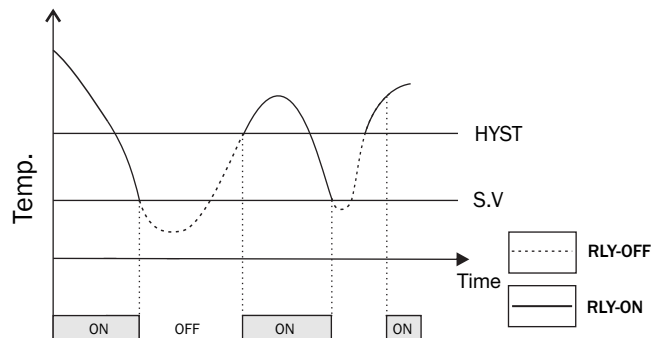
ON - OFF control (Heating) - for relay 1 & relay - 2 mode



ON - OFF control (Cooling) for relay 1 mode



ON - OFF control (Cooling) for relay 2 mode



Auto Tuning:-

- The Auto-tuning function automatically computes and sets the Proportional band (Pb) , Integral time (It), Derivative time (dt), and cycle time as per process characteristics.
- Tuning LED will turn "ON" during Auto-Tuning
- If the power goes off before auto-tuning is completed, auto-tuning will be restarted at next power ON.

