

OPERATING MANUAL
PROCESS TEMPERATURE CONTROLLER
PTC 4815R

MISTURA

TECHNICAL SPECIFICATION

INPUT SPECIFICATION:

Sr.	INPUT		Range
1	TC-J	J	0 To 700 °C
2	TC-K	K	0 To 1300 °C
3	TC-T	T	0 To 350 °C
4	TC-R	R	0 To 1650°C
5	TC-S	S	0 To 1650°C
6	TC-E	E	0 To 650°C
7	TC-N	N	0 To 1250°C
8	PT	PT	-100 To 400°C
9	PT-1	PT.1	-100.0 To 400.0°C
10	0-10VDC	0-10	-1999 To 9999
11	0-5VDC	0-5U	-1999 To 9999
12	4-20mA	4-20	-1999 To 9999
13	0-20mA	0-20	-1999 To 9999

Indication Accuracy ±1% of FSD ± 1°C
(FSD: full scale deflection)

Resolution J,K,T,R,S,E,N,PT-100 = 1°C
PT.1 = 0.1°C
0-10V DC,0-5VDC,0-20mA DC,4-20mA DC = 0.1,0.01,0.001,0.001

OUTPUT SPECIFICATION:

1) Relay Output/ SSR Output (Factory Set)

Relay/SSR	2
Relay Type	(NO-C)
Rating	Relay:10A, 230VAC/30V DC SSR: 12VDC,30mA

2) 24VDC Transmitter supply

3) Controlling Output: 4-20mADC/0-10VDC

AUXILIARY SUPPLY:

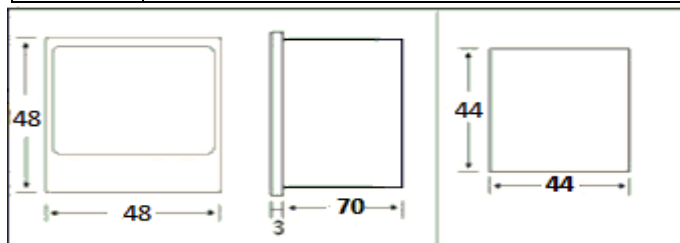
Supply voltage	100 to 250V AC, 50-60Hz
Power consumption (VA RATING)	Approx. 7 VA @ 230V AC MAX

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

DIMENSION & DISPLAY:

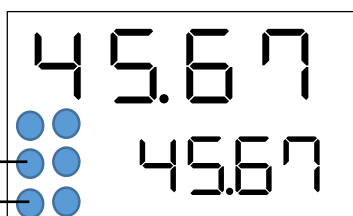
Size	48(H) X 48(W) X 70(D)/ Cutout 44(H) X 44(W)
Display	Upper: 4 digit, 7 segment, 0.70" White Lower: 4 digit, 7 segment, 0.50" Green



Analog Output LED

Relay1 LED ←

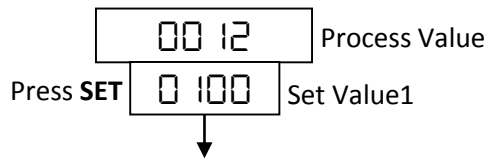
Relay2 LED ←



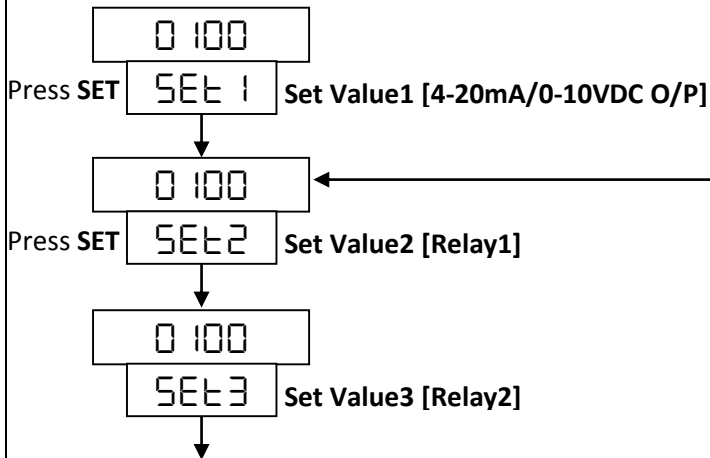
Key Operations:

- Press SET Key to enter in programming mode.
- Press SET Key to go to next parameter.
- Use Up Or Down key to change value of parameter.
- Press ENT Key to save change in setting
- To start Auto-Tuning Press Up key for 6 sec. (In PID Mode).

Set point Setting:

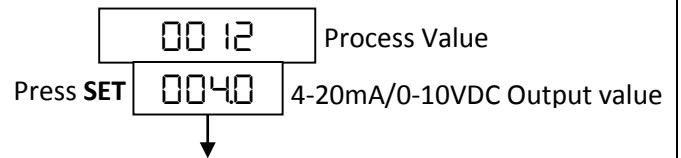


IF 4-20mA/0-10VDC-O/P Control Action: ONOF/PID

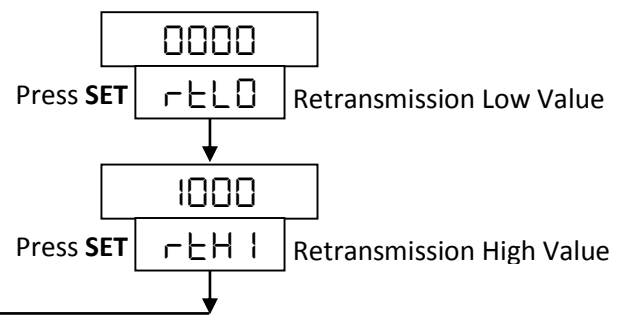


Press **SET** Key to Enter Program Mode

Press **ENT** Key to Exit



IF 4-20mA/0-10VDC-O/P Control Action: Retrasmision



4-20mA/0-10VDC Output Control Action:-

ONOF: 4mA/0 VDC when OFF, 20mA/10VDC when On [Heat mode]

PID: 4-20mA/0-10VDC Output according to PID equation

Retrasmision: 4-20mA/0-10VDC output according to Retrasmision Low Value -> Retrasmision High Value

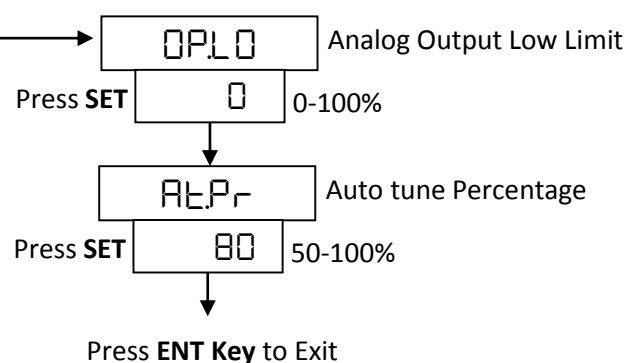
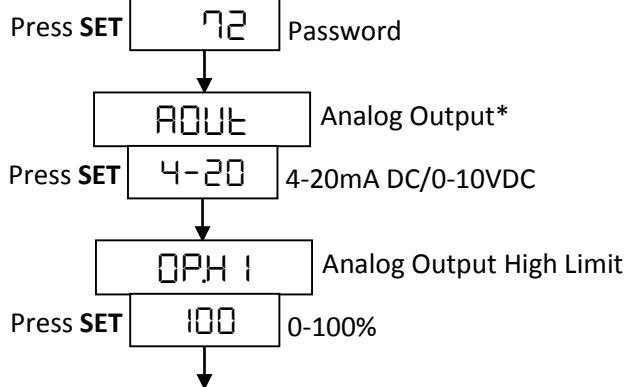
[Ex.1. Input (TC-J), RTLO (Retrasmision Low Value) = 0 °C RTHI (Retrasmision High Value) = 200°C
0 °C->4mA, 50°C->8mA, 100°C->12mA, 150°C->16mA, 200°C->20mA.

Ex.2. Input (4-20mA), Low Range=0, High Range=1000, RTLO=0 & RTHI=1000 4-20mA Output according 4-20mA Input.]

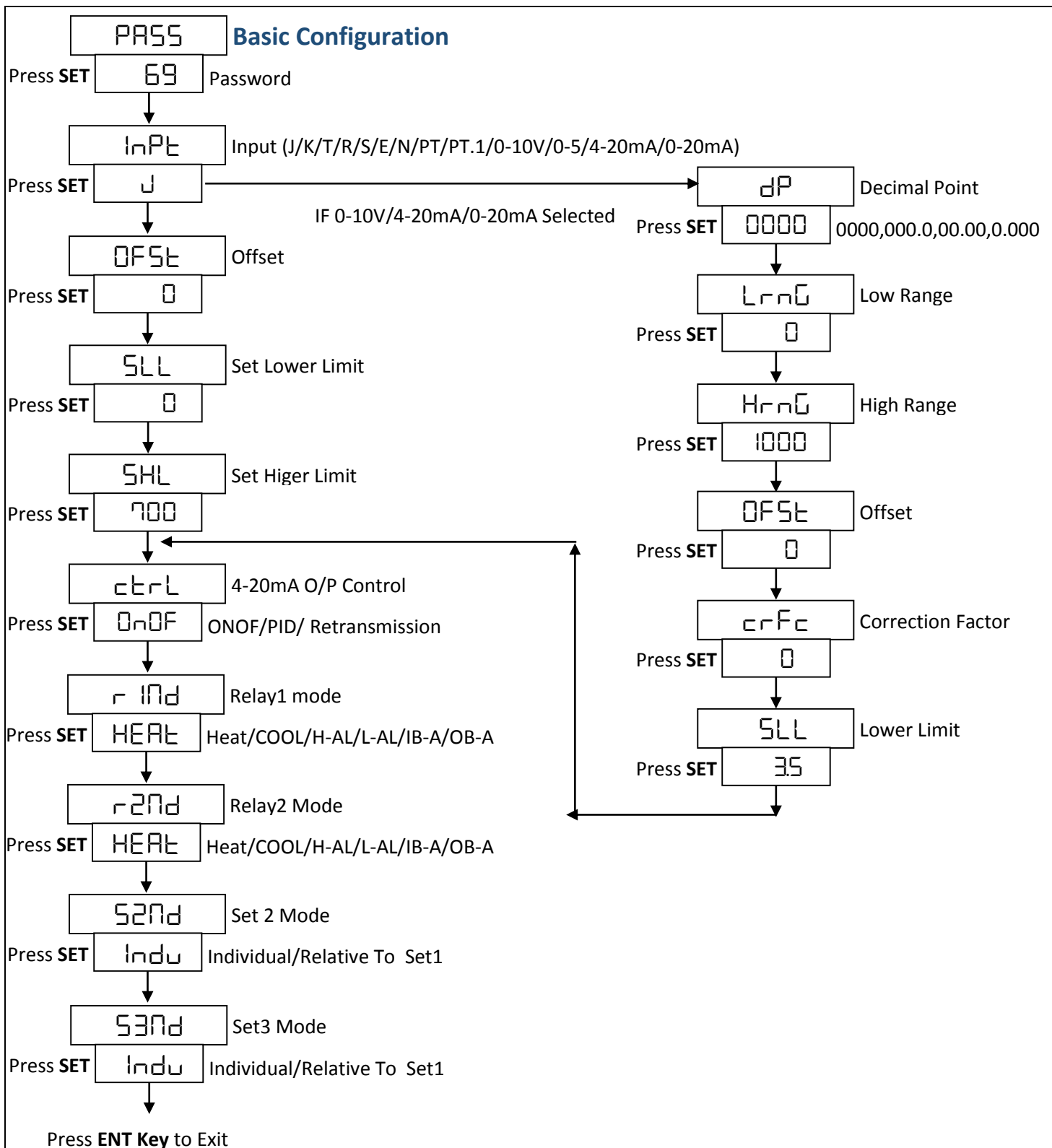
PID Auto-Tuning

- The Auto-tuning function automatically computes and sets the proportional band (P), integral time (I), Derivative time (D), cycle time as per process characteristics.
- While Auto-tune is in progress, lower display alternate shows AT & set-point. Lower display stops alternating between AT & set-point at the completion of Auto-tuning.
- Press **UP (↑)** Key 6 sec. to start tuning .

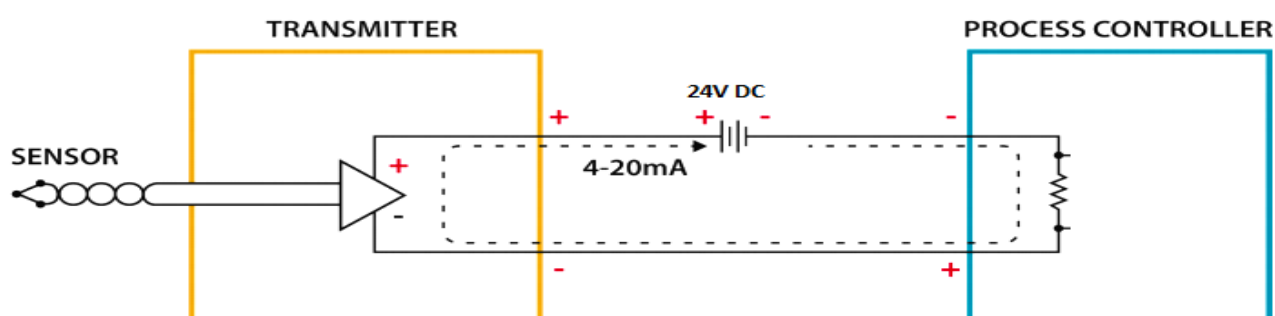
Analog Output

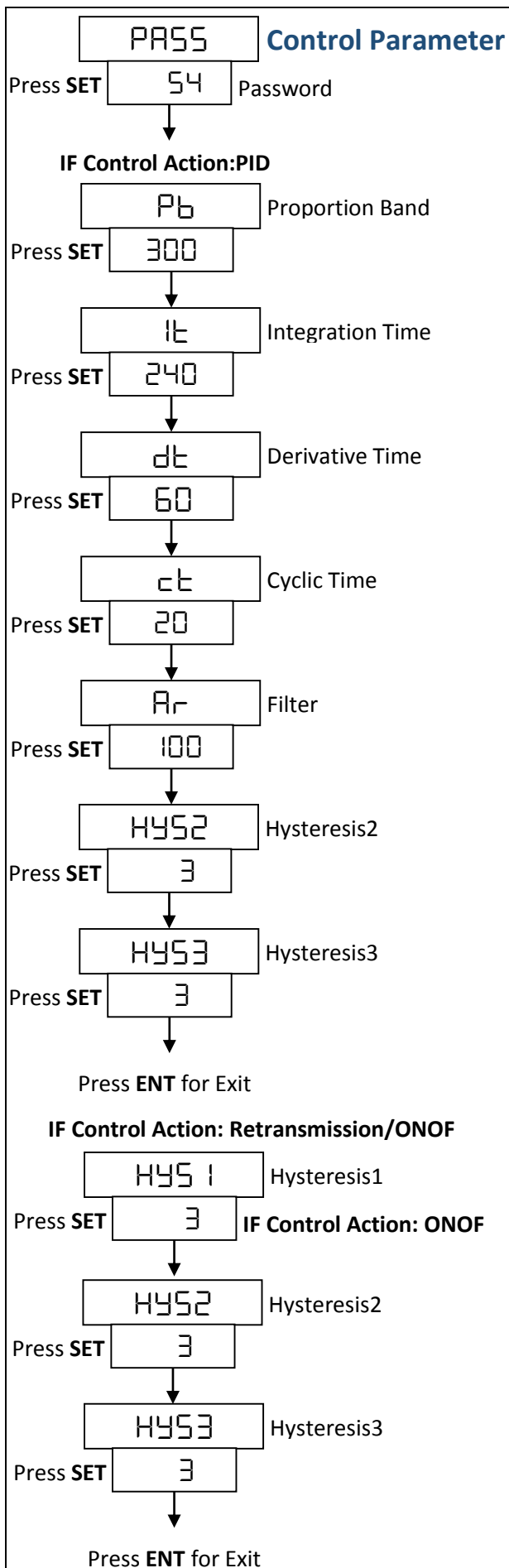


*In 4812R Analog Output is Factory Set [In 9612R Both Analog Output is available]



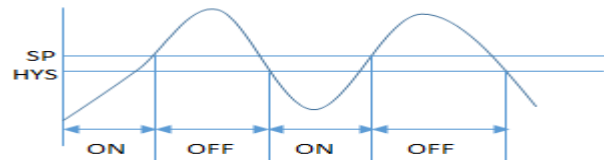
4-20 mA Current Loop:





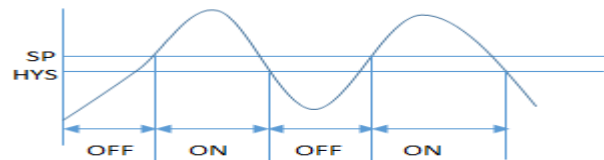
Relay1 & Relay2 Operating Modes

- Heat Mode:**



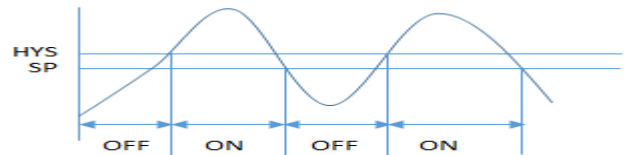
Initially Relay will be on condition. When Process value equals to Set Point Relay will turn off. When Process value equal to Set Point-Hysteresis then again Relay will be on.

- Cool Mode:**



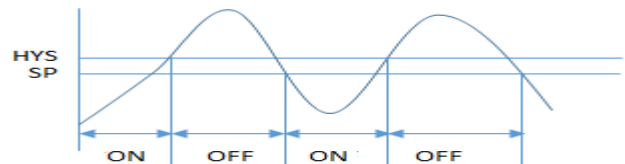
Initially Relay will be off condition. When Process value equals to Set Point Relay will turn on. When Process value equal to Set Point-Hysteresis then again Relay will turn off.

- High Alarm Mode [H-AL]:**



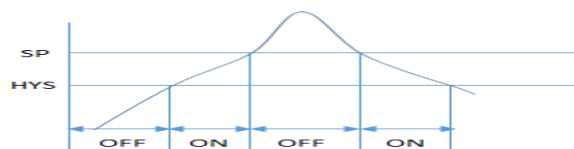
Initially Relay will be off condition. When Process value equals to Set Point + Hysteresis Relay will turn on. When Process value equal to Set Point then again Relay will turn off.

- Low Alarm Mode [L-AL]:**



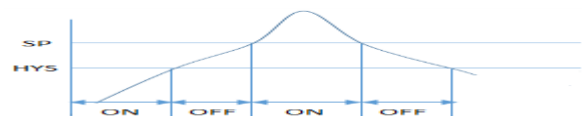
Initially Relay will be on condition. When Process value equals to Set Point + Hysteresis Relay will turn off. When Process value equal to Set Point then again Relay will turn on.

- In Band Alarm Mode [IB-A]:**



Relay will be on between Set point & Hysteresis condition. If Set Point=100 & Hysteresis=3 than Relay on between 97to100

- Out Band Alarm Mode [OB-A]:**



Relay will be off between Set point & Hysteresis condition. If Set Point=100 & Hysteresis=3 than Relay off between 97to100.