

µC Based BOD PID Auto Tune Temperature Controller with Timer + Low/High Alarm

PT100 – Type

Control Plate BOD (115A) (New)

Features :-

- Microcontroller Based, Double Display
- Supply 220 V AC
- Input : PT-100 Type RTD
- Output: (1) Heater : RELAY/SSR (2) Cooling: RELAY/SSR (3) Alarm: Buzzer / Relay
- Heating & Cooling Control
- Set Temperature Setting As Per Range Adjustable In Set Mode.
- Set Cooling Setting As Per Range Adjustable In Set Mode.
- Cooling Hysteresis 0.2 To 25.0 C Adjustable.
- Cooling Relay Delay Time Setting
- Defrost On & Off Setting
- High/Low Alarm Setting 0.3 To 25.0 C Adjustable Above And Below Set Value.
- PID for Heating Control and On-Off for Cooling Control
- Auto tuning selectable.
- Cycle Time (**Ct**) 1 To 60 Second Adjustable for SSR/RELAY Output.
- Delay 0 to 250 Second Adjustable for Cooling Control.
- Proportional Band (**Pb**) Adjustable.
- Integral Time (**It**) (Reset) 0 to 3600 Second
- Derivative Time (**dt**) (Rate) 0 to 3600 Second.
- **OPEn** Display if PT-100 RTD (Sensor) Break.
- Relay Trip & Give Alarm if PT-100 RTD Break or Open.
- Alarm Output Optional.
- Alarm Mute by Decrement Key.
- Manual Defrost on by Increment Key (Press for 5 Second)
- Calibration Error Correction (-25.0 To 25.0 C).
- Timer Function Optional.
- Selection of Timer Function: (1.) Power On (2.) Temp. Achieve.
- Sock Time Logic for Both Heating / Cooling.

Indicator

- Display indicating Process Temperature in RUN Mode.
- Display Indicating **TUnE** in Auto Tuning Mode.
- Display **OPEn** Mean Sensor Connection Open or Sensor Break
- Heating Led Glow When Output ON.
- Cooling Led Glow When Output ON.
- AL Led Glow When Alarm ON.

Key Function

- You Can Go In Setting Mode by Press SET Key
- You Can Change Value In Setting Mode by Increment & Decrement Key.
- Enter Key to Store All Set Value in Memory.
- Press Decrement Key to Mute Alarm.
- For Manual Defrost On Press Increment Key Continuous 5 Second.

SETTING

- You can change all Value by Increment & Decrement key.
- Press Enter Key To Exit & Save From Any Step Else Go To Next Step.
- Alarm Output Is Optional So Consider This Step of Setting Accordingly.

(A)

- Press **SET** Key to Set Heating Temperature.
Display= **Set** & Last set value
- Press **SET** key to set High Alarm Deviation Limit
Display= **AL.HI** & Last Set Value.
- Press **SET** Key to Set Low Alarm Deviation Limit
Display= **AL.LO** & Last set value.
- Press **SET** Key to Set **Sock** Time.
Display= **TIME** & Last set value.
- Repeat Above From Step (A) Else Press Enter Key To Save & Exit

Setting of CT, Tune, Delay & Calibration Error (For PID Control)

Press SET Key For 20 Second

(B)

- Set **Ct** for RELAY/SSR
Display = **Ct** & Last Set Value (Value For Relay / SSR).
- Press **SET** Key To Select Tune Function Else Go To Next Step.
Display = **nO**
Note: If You Want To Do Auto Tune, Then Press Increment Key (Display **YES**) & Press ENTER Key.
- Press **SET** Key To Set Delay For Compressor
Display = **dELY** & Last set value.
- Press **SET** Key To Set Calibration Error
Display = **C.Err** & **nO**
Note: If You Want To Do Error Correction In Process Temperature Than Go To Next Step.
- Press **Increment Key** to Select **YES** For Calibration.
- Press **SET key**
Display = **C.Err** & Last Error.
- Press Enter key to save & exit else press Set key to Repeat above from step (B)

(D)

Setting of Cooling, Hysteresis, Defrost On & Off time, Alarm Function & Range Minimum, Maximum

Connect Configure Link

Press Increment + Decrement + Enter Key For 10 Second

- Press **Set** Key To Set Cooling Setting
Display = **Set.C** & Last Set Value (0.2 To 25.0)
- Press **Set** Key To Set Cooling Hysteresis
Display = **C-Hy** & Last Set Value (0.2 To 25.0)
- Press **Set** Key To Set **Defrost On** Time
Display = **d.On** & Last Set Value in Minute (0 To 999)
- Press **Set** Key To Set **Defrost Off** Time
Display = **d.Off** & Last Set Value In Minute (1 To 9999)
- Press **Set** Key To Select Alarm Function
Display = **ALrM** & Last selection (Enable/Disable)
- Press **Set** Key To Set Range Maximum Limit
Display = **r.MA** & Last Set Value (400.0 C)
- Press **SET** Key To Set Range Minimum Limit
Display = **r.Min** & Last Set Value (-99.9 C)
- Press **SET** Key To Select Control Method (PID/On-Off)
Display = **PID** & Last Select Parameter.
Using UP / DOWN Key to Select Control Method.
- Press **SET** Key To Select Timer Function (Power On / Disable / Temp Achieve).
Display = **DISABLE or** Last Select Parameter.
Using UP / DOWN Key to Select the timer function.
- Press **SET** Key To Set Defrost (Yes / NO)
Display = **NO or** Last Select Parameter.
Using UP / DOWN Key to select Parameter , if Yes than d-On & d-Off Parameter will work.
- Press **SET** Key To Select Timer Memory Selection After Power On.
Display = **YES or** Last Select Parameter.
Using UP / DOWN Key to select timer resume function After Power Restore.
- Press **SET** Key To Select Temp. Timer Logic.
Display = **Temp.** & Last Set Value.
If Set Point is less than this parameter than cooling will work & after achieving set point timer become on.
If Set Point is greater than this parameter than heating will work & after achieving set point timer become on.