Control Panel Quick Guide

WARNING: This product operates on HIGH VOLTAGE. Improper use or failure to follow safety guidelines could result in DEATH or SERIOUS INJURY.

Panel uses the Eurotherm PID Controller. Please familiarize yourself with basic operation of the controller prior to use. Below is a quick guide to the operation of key functions of the controller, this document is not meant to replace the manual. If you have any questions please consult the manual or contact either Eurotherm Customer Support or Farnam Custom Products.

Steps for set up:

1. Modify the Housing.
2. Mount Panel.
    a. ADVISE TWO-PERSON LIFT.
3. Ensure Air flow.
4. Program the Controller.

MODIFY THE HOUSING

To make power and sensor connections the control panel will require modification by the customer. Before making modification make sure to familiarize one's self with the location of components inside the unit. **Image 1** is an image of the inside of a panel, this layout may differ based on the variation of control panel ordered.

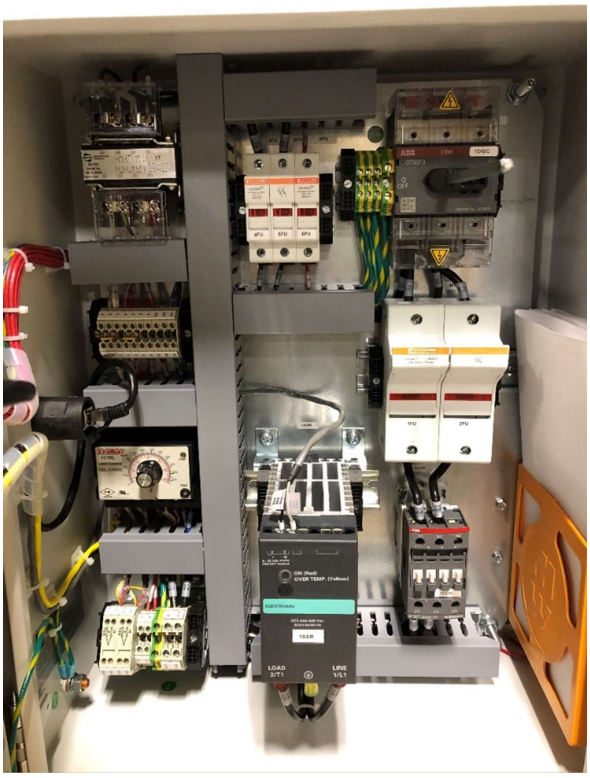
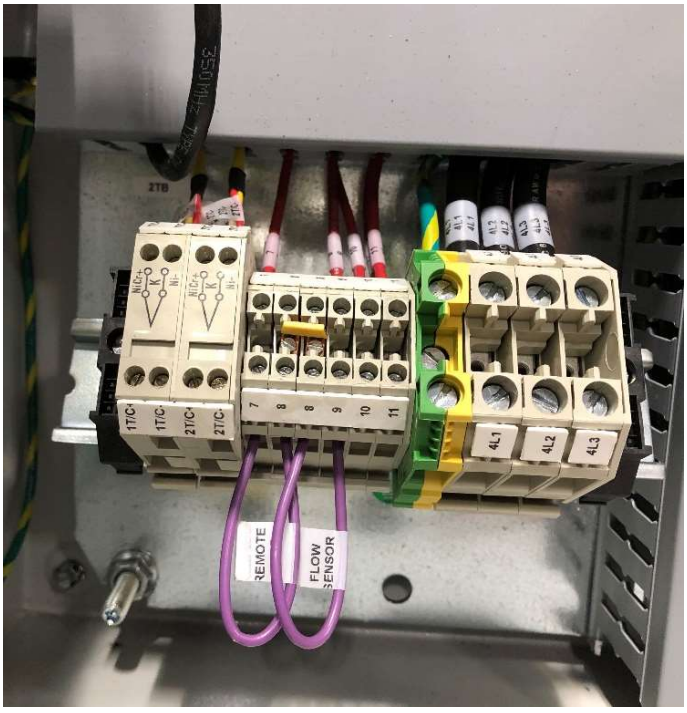


Image 1

1. Power in: Connect incoming power to the main disconnect in the top right of the panel. **Image 2** is an example of a Single-Phase input. Make sure that if it is only single phase that the input power is connected to the ports in-line with the power running to the fuse holders. In **Image 2** they are the two legs on the left.

2. Power out: Connection is located in the lower left corner of the panel. This connection is made in the terminal block labeled 4L1 and 4L2. The ground wire for both are make connected in the green and yellow terminal block. This is shown in **Image 3** in a three-phase unit as 4L1, 4L2, and 4L3.



3. Sensors:

    a. Thermocouples Inputs:

        i. Note: The red leg of the thermocouple is the (-) negative side.

        ii. TC1: High Limit temperature. (Set temperature on controller shown in **Image 4)**

        iii. TC2: Process temperature. (Set on face of controller)

b. Flow Sensor Input:

i. Terminal block input 8&9 in **Image 3.**

Replace jumper with normally open flow senor. For sensor specs. please contact Tutco-Farnam.

c. REMOTE Start/Stop Input:

i. Terminal block input 10&11 in **Image 3**.

ii. When in REMOTE mode (Image 4 shown in LOCAL mode) the start/stop will override the start/stop button on the face of the panel will not respond.

iii. The only way to stop the panel is to use power off panel.

4. LOCAL\REMOTE mode.

a. This switch will allow an external switch to start/stop the control panel output as shown in **Image 4**.

MOUNT THE PANEL.

Please note the unit is **heavy** and our recommendation is for a **two-person lift.** Follow provided instruction on mounting. After connections are made review inside of panel for debris and ensure connections are secure.

ENSURE AIR FLOW.

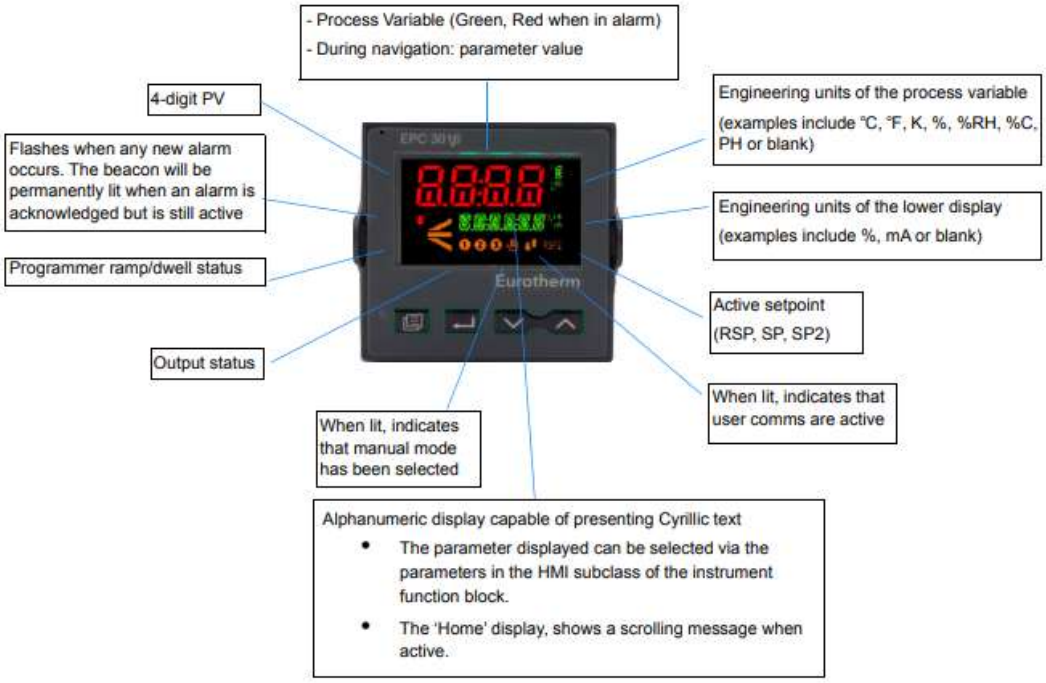
Before supplying power to the panel ensure air flow is on. The heater requires adequate air flow for proper operation

PROGRAM THE EUROTHERM CONTROLLER.

Notice: Any unauthorized changes to the controller that result in failure will not be covered under manufacturer's warranty. Listed below are the only fields that are suggested for change and/or modification. This is a document is meant to be a quick reference sheet, not a replacement for the manual.

General Description of Front Panel Displays

EPC3016



1. Turn on power to panel with the main disconnect.
    a. When the main disconnect is turned on startup takes about 3-5 seconds. Then display set point on bottom and current value on top.
    b. When in LOCAL mode as shown in **Image 4**.
        i. Use Start button on the face of the panel.
2. Buttons on Controller:

Page

In Operator levels 1 or 2 the Page button will select between the Home display or the Programmer Edit and Run lists (if one of the programmer features is enabled).

In Levels 3 or Config the Page button will scroll through list headers (no auto-repeat). If the Page button is pressed within a list, the display reverts to the top of the list. The top of the list shows the list header only with no initial parameters.

Page+Scroll - all variants

Jump directly to the "HOME page". The current operating level remains unchanged. If the HOME page is already selected, these buttons will perform the custom function as detailed in "Functionality of the F1 and F2 and Page + Scroll buttons" on page 182. The default is Alarm Acknowledge.

3. Navigation

    a. Press and hold Page button to enter the different levels.
    b. Level 1 – Default level, to use scroll button to view information for different fields.
        i. Set Point
        ii. Threshold – high point

1. **THLD** – High limit on temperature controller turns off output to heater.
2. When the limit is reached the heater will turn off. To re-engage heater the Start button must be pressed again.

iii. **TUNE** – Autotune
1. Note: Before using autotune feature allow heater to reach set point.
2. To start autotune use scroll button to navigate through menu.
3. When screen reads **TUNE** use the ^ to set to ON and press the home button.

iv. Level 2 – Password: 0002 (press page twice.)

v. **SP.HI** – Set absolute high for set point

vi. **SP.LO** – Set absolute low for set point

c. Level 3 – Password 0004 (press and hold page button)
   i. These are essentially the same as the Config level. However, the controller will stay active in this menu rather than powering down the output.

d. Config – Password 0004 (press and hold till Level 3 visible, use up arrow for CONF)
   i. After finished in Config menu return to Level 1 to reengage the controller.
   ii. Units
      1. Default C to change to F
         a. CONF -> INSt -> INFO -> T.UNIT -> dEGF
   iii. Input Type
      1. Default type K thermocouple
         a. Consult manual for other inputs.
   iv. Communication pg. 149-154
      1. Ethernet
      2. IP
      3. Node
      4. Baud

4. Communication

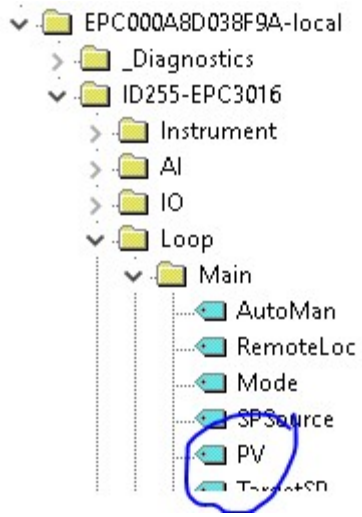
e. Download software from the Eurotherm website.
   i. [Eurotherm iTools Sudio Download page.]
   ii. Scroll down to Downloads and install Eurotherm iTools

f. YouTube Link to communication set up:
   i. https://www.youtube.com/watch?v=76PBqINx_fYr
   ii. Video advises to set IP on computer. If you are dealing with one controller, we advise setting the IP on the controller instead.

g. YouTube link to iTools user interface:
   i. https://www.youtube.com/watch?v=UPgakXKnZhE

h. Helpful pages in the Eurotherm Manual
   i. Auto discovery pg300
   ii. Ethernet pg. 71 and pg. 149

2. Collecting data
   a. Enter iTools Engineering Studio
   b. Open iTools OPC Scope Lite



c. Highlight PV from controller and add tag.

d. Click Stat Data Logger

   i. Will prompt user where to save.

TROUBLESHOOTING.

Troubleshooting should be done by someone with knowledge of the process and training on the control panel. If you do not feel comfortable please contact Farnam.

1. Not heating up
   a. Check face of panel.
      i. If High limit controller is tripped the panel requires you to reengage by pressing the start button. The red button will be lit.
      ii. If the face of the Eurotherm controller is red the Hi Limit temperature reached the programmed value in the controller and will need to be reengaged by pressing the start button.
      iii. Shut down the panel and check the two items below.
         1. Fuses inside panel.
         2. All connections are secure.
         3. Heater resistance
   b. Make sure you know if it is in Remote or Local mode.
2. Shuts down with the Hi Limit red light on.
   a. Ensure consistence/proper airflow.
   b. Check high limit controller
3. Will not settle on set point.
   a. Ensure consistent/proper air flow.
   b. Auto tune
4. Error / Notification messages on controller.
   a. Notification Messages pg. 346 from the Eurotherm Controller manual.