BURNER CONTROLLER
Model DD 810 UV3

General:

The controller is state of art microprocessor based design. The controller's basic functionality is to manage a safe start up of the Burner and continuos monitoring of the flame there after.

The controller is housed in elegant ABS plastic enclosure with over all size of 100 X 70 X 110 mm. (LXBXH) . The controller can be mounted on standard 35 mm DIN rail or on back panel with two screws.

Description:

The Burner Controller is designed for automatic start up of small capacity Burners with instant start up and flame monitoring of oil fired Burners using UV sensor for sensing the flame .

The outputs are in the form of Relay contact and are rated for **6 A , resistive load at 230 V AC.** Inputs are Potential free contacts. Flame monitoring is carried out by the UV Flame sensor. A visual indication is also provided on the controller which will make the supervision of the sequence very simple.

Flame sensing:

The controller senses the flame using UV flame sensor, A gas filled tube which is sensitive to UV radiation present in flame. Any burning flame will contain some amount of UV radiation. This phenomenon is utilised to detect the presence of flame.

Note: The UV sensor uses a high voltage for excitation of the electrodes and a very small current is generated when UV radiation falls on the sensor. Care must be taken while wiring the sensor such that cable connecting the sensor to he controller should not run along with the other power cables which can induce leakage current in the UV sensor circuit.

The ambient working temperature for UV sensor is 60^0 C and if the temperature exceeds the limit, the sensor can malfunction. So, care must be taken in environments where the temperature is expected to exceed the safe limits and UV sensor must be housed in air jacket to maintain it's temperature with in the safe operating limit.

Terminal Connections:

Phase	1	6	Blower
Neutral	2	7	Start Interlocks
Fuel valve 2	3	8	Lockout Alarm
Fuel Valve 1	4	9	UV sensor (+Red)
Ignition	5	10	UV Sensor (-Black)

Note:
1. Supply voltage – 230 V AC, 50 Hz.
Operation:

All the connections are made as per the electrical schematic diagram. All the Control Interlocks in series with supply are to be closed. When supply is provided to the terminal No. 1, The Controller will go through the following sequence of operation.

Supply at terminal No. 6 is switched On. If the Start Interlock at terminals 6 & 7 is closed. The controller will now wait for **5 seconds** during this purge time the controller will check for leakage current in the flame circuit in the absence of flame. After the pre purge, The controller will switch On Fuel Valve 1 at terminal No. 4 and Ignition at terminal No. 5.

If flame is sensed by the flame sensor (F1 – F2) , connected at terminal 9 & 10, Ignition will be switched Off after a time of **5 seconds** and the Fuel valve 2 will be switched On at terminal No. 3 at the same time. The controller will monitor the flame there on.

If flame is not sensed with in **5 seconds** since the start of Ignition, the controller will goto Lockout condition. When in lockout , the Alarm is switched at terminal No. 10 and all other outputs will be switched Off.

False flame check: Check for false flame will be carried out the beginning of the sequence start. If flame is sensed before the start of Fuel and Ignition, which is may be due to false light ingress or faulty flame sensor. The controller will goto Lockout with out starting the firing sequence. Thus making the start up sequence safe.

Controlled shut down : When under normal firing condition, if the control interlock initiating the firing sequence , across terminals 6 & 7, is opened, the firing is switched Off and Fuel valve and Blower will be switched Off. Now the control will waits for the closure of the control switch. If the control switch is closed, the controller will start the firing sequence from the start.

Lockout: When in lockout , the controller can be reset by momentarily pressing the Reset P.B. (R) provided locally on the controller or Momentary interruption in power supply the controller will also have the same reset effect on the controller.

please contact LINEAR SYSTEMS for any clarification.