Linear Systems **Ph/Fax: +91 22 25576002**

BURNER CONTROLLER
(MODEL 732 – UV – P5)

GENERAL

The Burner Controller (Model 732-UV-P5) is designed for safe start-up and continuous monitoring of GAS FIRED burners used in various applications, such as, Furnaces, Dryers, Boilers, etc. The Controller uses state of the art microprocessor based design to provide reliable and precise sequence operation, with easy to follow visual indications.

The Controller is housed in an ABS plastic enclosure with over all size of 70 mm (L) x 110 mm (B) x 105 mm (H). The enclosure consists of a Base and a Plug-in Controller module, which facilitates easy replacement at the site.

*Flame sensing is done by means of a UV Flame Sensor***.** The Controller has a built-in UV Flame Amplifier for flame sensing. The UV Flame Amplifier is designed to work with Linear Systems make UV Sensor (Model UV-01 / UV-71-AJ). However, it has been found to work satisfactorily with UV sensors (UV tube) of various makes. It is important to ensure that the UV tube is rated at 230 V AC rms (325 V peak DC). *It is the responsibility of the User to ensure the compatibility of the UV Sensor, both in terms of ratings and satisfactory operation.*

SEQUENCE SPECIFICATIONS:

The power supply (230V AC, 50 Hz) is connected to the Burner Controller across terminals 1 & 2. In practice, a typical installation may have Safety Limit Thermostat (SB), Air Pressure Switch (AP), Start/Stop push buttons connected in the supply line.

The Sequence Controller is energised when the supply is available at Terminal 1.
The Sequence will start provided the following conditions are met:

The Controller will **WAIT** for the Safety / Control Loop between Terminals 4 and 5 to close. Safety / Control Loop is typically formed by Thermostat (W) or Pressurestat(R).

This condition is indicated by Slow Flashing of the Safety LED

Step No.	Time in Seconds	Operation	Symbol Ref	Terminal Ref
1	T1 = 0	*False Flame Check (See Note Below)*		
		Blower ON	B	6

Note: The False Flame check is carried out during initial start-up and following a Reset – *provided the False Flame check is enabled*. The False Flame check takes about 3 seconds. The Ignition will be turned ON for about 1 sec, so as to check for leaky valve.

The Controller goes to LOCK OUT, if the False Flame signal is present.
False Flame LOCKOUT is indicated by Fast Flashing of the Flame LED

Linear Systems **Ph/Fax: +91 22 25576002**

Step No.	Time in Seconds	Operation	Symbol Ref	Terminal Ref
2	T2 = T1 + 5	Ignition ON	I	9
		First Solenoid OPEN	V1	7
3	T3 = T2 + 4	Ignition OFF	I	9
If Flame is present				
4A	T4 = T3 + 6	Second Solenoid OPEN *Normal Operation*	V2	8
If Flame is NOT present				
4B	T4 = T2 + 1	All Outputs OFF **LOCK OUT** ON *Slow Flashing of Flame LED*	L	10

Note: For reliable sensing of the flame, the UV Sensor surface must always be kept clean. In addition, UV Sensor must be mounted in the direct line-of-sight for reliable sensing of the flame.

LOCK OUT is initiated under following conditions:

1. False Flame in Step 1 - *indicated by Fast Flashing of Flame LED*
   (Possible Causes – Flame Rod touching the Burner/Ground or Leaky valve)
2. Flame Failure in Step 3 - *indicated by Slow Flashing of Flame LED*
   (Possible Causes – Blocked Fuel line, Faulty Ignition Transformer, etc)

The Lockout can be reset by pressing the Reset Push Button on the Controller OR externally by a Reset Push Button connected across Terminals 3 & 4, as shown in the schematic. *A momentary interruption of the Supply will also Reset the Controller*.

RETRIAL

If a Flame Failure occurs during Normal operating condition, then the Controller initiates a Retrial from Step 2. **LOCKOUT** is initiated if the flame is not present after Retrial.

Note: **RETRIAL is not recommended** for gas installation due the possibility of back fire and explosion. Hence, this feature is normally disabled, unless otherwise specified by the Customer. Please refer to ORDERING INFO for details.

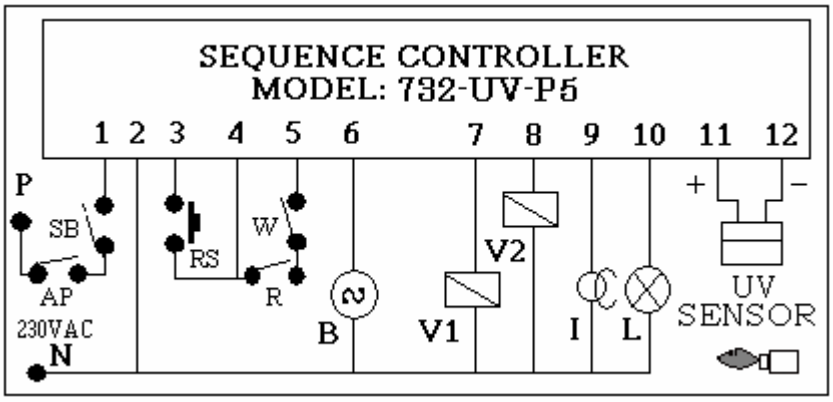
SAFETY INTERLOCK & POST-PURGE

The Safety / Control circuit is typically formed by connecting Pressure Switch and Temperature Controller Output Contacts, etc in series, across terminals 4 & 5. All contacts must be potential free Normally Open contacts. When any of the contacts in Safety Loop is OPEN, both Fuel Valve and Ignition supply is turned OFF. The Blower will stop after a Post Purge time of 5 seconds. *The Controller will now wait for safety Loop to close. This condition is indicated by Slow Flashing of the Safety LED*. When the Safety Contacts close, the Sequence restarts automatically from Step 1.

Linear Systems Ph/Fax: +91 22 25576002

BURNER CONTROLLER
(MODEL 732 – UV – P5)

WIRING DIAGRAM



P – Phase
N – Neutral

R – Pressurestat
W – Limit Thermostat or Pressure Monitor
SB – Safety Limit Thermostat
AP – Air Pressure Switch

B – Burner Motor / Blower
V1 – First Fuel Sol Valve
V2 – Second Fuel Sol Valve
L - Lockout / Alarm
I - Ignition
RS – Reset Push Button
UV – UV Sensor

Note: The Output relay contacts are rated at 3 A. However, the total current from the Controller should not exceed 3 A. A blown Fuse indicates a fault in the panel or in the external wiring. *Please check the external wiring before replacing the fuse.*

ORDERING INFORMATION

The Standard Model is 732-UV-P5. It has a Pre-Purge time of 5 sec (as specified by P5). It also has False Flame check Enabled and Retrial Disabled.

The Customer can specify Purge times of 1, 5, 7 or 9 sec, that is, P1 or P5 or P7 or P9. The Customer can also specify the False Flame and Retrial options while ordering.
For Example:

732-UV-P1-Fn-Ry

specifies Purge time of 1 sec, No False Flame Check and Retrial (yes) Enabled.
The Customer specific models will incur extra charges. Please check the Price List.

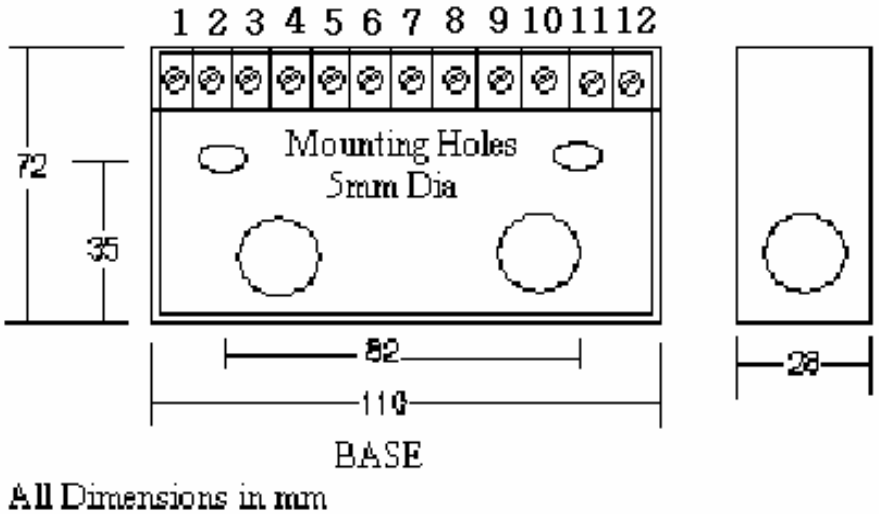
Linear Systems **Ph/Fax: +91 22 25576002**

BURNER CONTROLLER
(MODEL 732 – UV – P5)

OVER ALL DIMENSIONS

75mm (L) x 110 mm (H) x 105 mm (D)

BASE PLATE & MOUNTING DETAILS



All Dimensions in mm