Linear Systems **Ph/Fax: +91 22 2557 6002**

GAS BURNER SEQUENCE CONTROLLER

(MODEL 307-GI-D)

GENERAL

This Controller is designed for automatic start up of Gas Burner with Pilot Flame proven start up sequence. It has the features of proving the Damper Low position. It also has interlock for proving the Air Pressure. The Controller has the feature of False Flame Signal check at the beginning of the sequence. It has Built in Flame amplifier.

SEQUENCE SPECIFICATIONS:

The power supply (230V AC, 50 Hz) is connected to the Sequence Controller across terminals 1 & 2. The sequence starts when the Safety Loop (Terminals 6 & 7) is closed and the Start Push Button (Terminals 4 & 1) is momentarily depressed.

Step No.	Time in Seconds	Operation	Symbol Ref	Terminal Ref
1	T1 = 0	Blower ON	B	9
		Damper ON	D	14
2	T2 = T1 + 60	Damper OFF	D	14

The Controller will now wait (WD) for the Damper to reach Low Air position by sensing Contact Closure across Terminal 1 (Phase) and Terminal 5. If the Low Air position is not reached with in **60 seconds**, then the Controller will go to **LOCKOUT**.

3	T3 = T2+WD	Ignition ON	I	10
		Pilot Valve ON (Open)	P	11

If Flame is present

4A	T4 = T3 + 5	Ignition OFF (Go to Step 5)	I	10

If Flame is not present

4B	T4 = T3 + 5	All Outputs OFF (End of Seq)		
		LOCK OUT ON	L	3
5	T5 = T4 + 10	Main Solenoid ON (Open)	V	12
6	T6 = T5 + 5	Pilot Valve OFF (Closed)	P	11
		High Flame Terminal ON	H	13

The **LOCKOUT** sequence is initiated in the case of Low Air Pressure, Flame Failure, False Flame and Low Gas Pressure conditions.

1. If the Air Pressure Switch (connected across Terminals 7 & 8) is not closed with in **5 seconds** of starting of the Blower or at any instant there after, the Controller goes to Lockout.
2. If the flame is not present at the end of Step 3 or if there is no flame during normal operation, then all devices are turned OFF and Lockout terminal is energized.
3. If Flame is sensed before the opening of Pilot valve and Ignition, the Controller goes to Lock Out.

When the Controller is under Lock Out condition, the sequence can be restarted ONLY by depressing the Start Push Button. The sequence then restarts from the beginning.

SAFETY LOOP / POST PURGE SEQUENCE

The Safety circuit is typically formed by connecting Steam Pressure Switch and Temperature controller Switch in series, across terminals 6 & 7. The switches must be potential free. The line voltage is supplied from inside the Controller.

When Safety loop is OPEN, all circuits are switched OFF, except for the Blower. The Blower runs for **10 seconds** before it stops.

The Controller now waits for Safety Loop to close again. This condition is indicated by RUN Indicator on the Controller front panel will be ON and all other Indicators OFF. Upon closure of Safety Loop, the Controller restarts **Step 1**.

WIRING DIAGRAM