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

BOILER SEQUENCE CONTROLLER
(MODEL 107 –M)

GENERAL

This Burner Controller is designed for Fuel Oil firing with Gas (LPG) Pilot. The Fuel Oil is used for main combustion. The Flame sensing is done by means of Light Detecting Resistor (LDR) Sensor. The Controller has a built-in Flame Sensor Amplifier for sensing of the flame.

The Controller uses microprocessor based design and is housed in a ABS plastic enclosure with over all size of 150(L) x 70(B) x 110(H) mm. The mounting is by means of standard 35 mm DIN rail or on back panel with two screws. The outputs are relay based, with contact ratings of 230V AC, 5 A resistive load.

1. SEQUENCE SPECIFICATIONS:

When the supply is connected, the Sequence Controller will start when the Start Push Button (Terminal 4 & 5) and the Limit Switch Push Button (Terminals 13 & 14) are depressed. The sequence and timings for a NORMAL Startup are as given below:

Step No	Time in Secs	Operation	Sch. Sym	Term Ref.
I	t = 0	Run Indicator ON	R	(3)
		Blower ON	B	(8)
II	t = 48	Oil Pump ON	OP	(9)
		Ignition ON	I	(10)
III	t = 48+44	Main Solenoid ON	V1	(12)
IV	t = 48+44 + 7	High Flame valve ON	V2	(11)
		Ignition OFF	I	(10)

NOTE: The Sequence will only start, if the Safety Loop (Terminals 6 and 7) is closed.

FLAME FAILURE / LOCKOUT CONDITION

If the Flame is NOT present at the end of Step IV **or** if the Flame Failure occurs during normal operation; then all circuits are turned OFF, except Blower. The Blower is turned OFF after a post-purge time of 60 seconds. A Manual Restart is needed. THE LOCK OUT CONDITION IS DANGEROUS AND MUST BE CHECKED THOROUGHLY BEFORE RESTARTING.

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SAFETY INTERLOCK / POST PURGE

The Safety Loop is typically formed by connecting Pressure/ Temperature switch contacts in series across Terminals 6 and 7. The contacts MUST BE POTENTIAL FREE. Mains supply is provided internally by the Sequence Controller at Terminal 6.

If the Safety Loop is OPEN at the end of Step I OR at any time during normal operation, then all circuits are turned OFF except the Blower. The Blower is turned OFF after a **Post Purge time** of **60 seconds.**

The Sequence Controller now waits for SAFE operating conditions to return and starts the sequence from Step II. During the wait period the RUN indicator is ON.

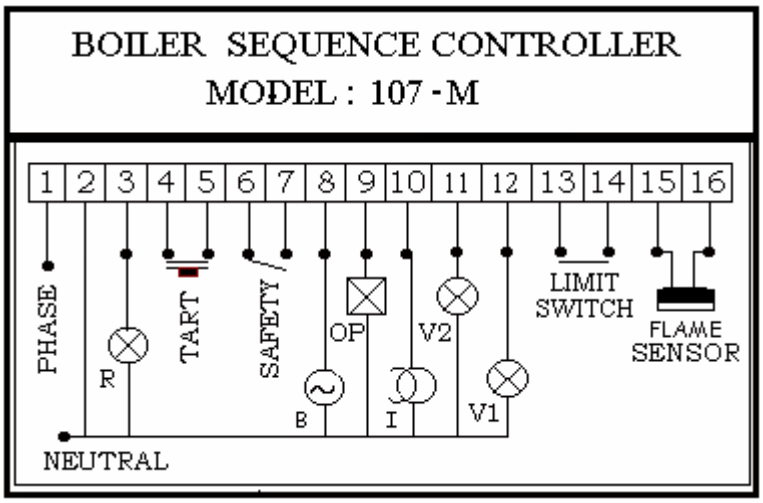
OPERATING INSTRUCTIONS: * IMPORTANT *****

1. It is important to note that the FUSE RATING should not exceed 5 Amps. The fuse has been provided essentially to protect against short circuits external to the Sequence Controller, namely in a contactor, solenoid, etc. Hence, it is recommended to investigate the panel wiring before replacing the fuse. Use of higher fuse would cause severe damage to the Sequence Controller.

2. It is recommended to use shielded wire for LDR connection. 230V SUPPLY SHOULD NEVER BE CONNECTED TO FLAME SENSOR TERMINALS.

3. The Safety circuit (between Terminal 6 and 7) is formed by potential free contacts. The 230 V supply is provided internally at Terminals 6.

3.0 SCHEMATIC DIAGRAM:



For more details and clarifications, please feel free to contact us.