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

BURNER CONTROLLER
(MODEL 710 – PR –MA)

GENERAL

The Burner Controller (Model 710-PR-MA) is designed for safe start-up and continuous monitoring of OIL FIRED burners used in various applications, such as, boilers, furnaces, dryers, 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 replacement at the site.

The Controller senses the flame using Light Detecting Resistor (LDR). Please note that, LDR based flame sensors essentially detect the light emitted by the flames. Hence, they are only suitable for Oil flames. They are not suitable for gas flames. They are also not suitable for furnace applications, where there is refractory glow from the furnace walls.

SEQUENCE SPECIFICATIONS:

The power supply (230V AC, 50 Hz) is connected to the Burner Controller across terminals 1 & 2. The Controller starts operating as per the following sequence:

Step No.	Time in Seconds	Operation	Symbol Ref	Terminal Ref
1	T1 = 0	Initialisation		

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The Controller **waits** for the Safety Loop / Thermostat contacts (between 5 & 6) to close.

Flashing of RUN indicator on the Controller indicates this condition

False Flame Check

The False Flame check is carried out – *provided the False Flame check is enabled.* The False Flame check takes about 1 second.

The Controller goes to LOCK OUT, if False Flame signal is present

2	T2 = T1 + 1	Fuel Valve ON	V	7
		Ignition ON	I	10

If Flame is present

3A	T3 = T2 + 8 (max)	Ignition OFF (when flame is sensed) *Normal Operation*	I	10

If Flame is NOT present

3B	T3 = T2 + 8	All Outputs OFF **LOCK OUT** ON	L	9

LOCK OUT is initiated under following conditions:

1. False Flame in Step 1 - *indicated by fast flashing of Flame LED*
   (Possible Causes – Faulty Flame sensor 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.
A momentary interruption of the Supply will 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.

SAFETY INTERLOCK

The Safety Interlock circuit is typically formed by connecting Pressure Switch and Temperature Controller Output Contacts, etc in series, across terminals 5 & 6. 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. When the Safety Contacts close, the Sequence restarts automatically from Step 1.

FALSE FLAME CHECK

False Flame check is an important feature of the Controller. It enables diagnosis of failed (short circuited) Flame sensor. It should be noted that, a short circuit in the Flame sensor circuit will indicate to the Controller that, the flame is present, even when the flame is not present. A False Flame Check provides a framework to detect such faults.

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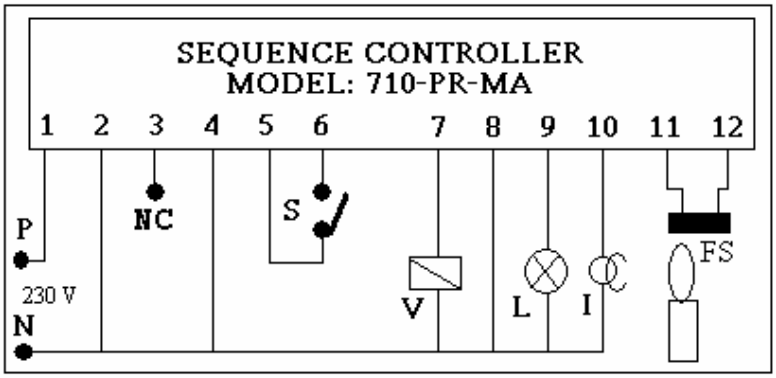
In addition, the False Flame Check feature can also help to detect a leaky valve, when the burner restarts following opening and closure of the safety interlock circuit.

Even though False Flame Check is strongly recommended, Model 710-PR-MA design does provide the feature of disabling the same. Please refer to the ORDERING INFORMATION for details.

WIRING DIAGRAM



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 710-PR-MA. It has False Flame check Enabled and Retrial Disabled.

The Customer can also specify the False Flame Check and Retrial options while ordering.

For Example:

710-PR-MA-Fn-Ry

specifies 710-PR-MA with No False Flame Check and Retrial (yes) Enabled.

The Customer specific models will incur extra charges. Please check the Price List.

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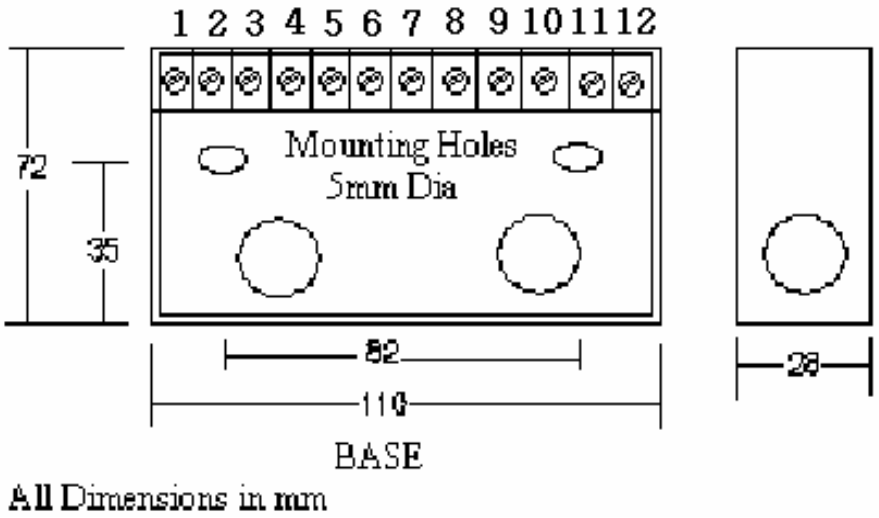
OVER ALL DIMENSIONS

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

BASE PLATE & MOUNTING DETAILS



All Dimensions in mm