

RA890G Protectorelay™ Primary Control

RA890G Protectorelay Primary Control provides solid state electronic safeguard protection for industrial and commercial gas, oil, or combination gas-oil burners.

- Designed for interrupted ignition with intermittent pilot for gas burners, and for interrupted or intermittent ignition on oil burners.
- Used only with C7027, C7035, or C7044 Minipeeper Ultra-violet Flame Detector.
- Either a line voltage or low voltage controller may be used.

- Solid-state circuitry eliminates warmup and increases resistance to vibration.
- Push-to-reset safety switch button in dust-resistant enclosure.
- Safe start check prevents start if flame or flame simulating failure is present.
- Automatic safety switch lockout if flame fails on start or if flame is not re-established after flame failure.
- When limit control opens, control de-energizes ignition and fuel valves, but safety switch lockout will not occur.
- Test jack permits reading of flame signal.
- Easy mounting and removal with captive mounting screws. Durable thermoplastic mounting base.
- Minus 40°F (-40°C) approved model available.

Specifications

APPROVALS:

Canadian Standard Association Certified: 120V models only; File no. LR1620.

Factory Mutual Approved: Report no. 22013.

American Gas Association Design Certified: For -20°F (-29°C); Certificate no. 20-6B.

Alarm Contacts: 3.0A at 24 Vac, or 75 VA pilot duty at 120 Vac in suitable wiring enclosure.

Low Voltage Control Circuit (T-T): 0.17A.

NOTE: Allowable inrush can be up to ten times the pilot duty rating.

Example: Pilot duty rating = 25 VA.

At 120V, running current is $25/120 = 0.21A$.

Maximum allowable inrush is ten times 0.21 - 2.1A.

Underwriters Laboratories Inc. Listed: 120V models only; File no. MP268, Guide no. MCCZ.

NOTE: All devices meeting UL component recognition bear the following symbol:



Replacement exchange controls that meet current UL requirements are identified with the term REMFR'D following the listing or component recognition mark.

APPLICATIONS

Either a line or low voltage controller can be used. If a line voltage controller is used, connect it between the limit control and terminal 6, and jumper T-T.

Refer to the appropriate flame detector instructions when paralleling two flame detectors.

STANDARD MODELS

MODEL: RA890G Protectorelay™ Primary Control.

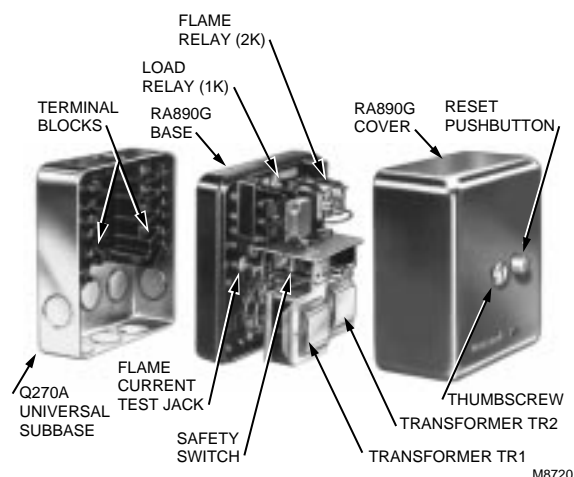
VOLTAGE AND FREQUENCY: 120, 208, 220, 240V; 50/60 Hz models.

VOLT-AMPERE RATING:

60 Hz: 14 VA maximum, 12 VA standby.

50 Hz: 18 VA maximum, 17 VA standby.

Fig. 1—RA890G and Q270A Subbase.



POWER CONSUMPTION:

60 Hz: 9.5W maximum, 3W standby.

50 Hz: 10W maximum, 4W standby.

FLAME FAILURE RESPONSE TIME:

Flame Establishing Period: Up to 15 seconds (nominal).

Recycle Time: Almost immediately after Flame Failure Response Time.

SAFETY SWITCH TIMING (Lockout Timing): 15 sec nominal timings are proportional with input voltages and temperatures. For RA890s that are classified in Underwriters Laboratories Inc. gas groups 6 and 6A gas and oil group 8, the maximum safety switch timing with voltages ranging from 70 to 110 percent of rated voltage and with ambients ranging from 32°F (0°C) to 115°F (66°C) is allowed to be as high as 50 seconds.

DIMENSIONS (including subbase): Approximately 5 x 5 x 5 in. (127 x 127 x 127 mm).

AMBIENT TEMPERATURE RATING:

Minimum: Models with 15 sec safety switch -20°F, -29°C.

Models with 30 sec safety switch^a +10°F, 112°C.



Maximum: Models without alarm contacts 50 Hz (115°F, 46°C). 60 Hz (125°F, 52°C).

Models with alarm contacts 50 Hz (105°F, 41°C), 60 Hz (115°F, 46°C).

ALARM CONTACTS (optional): Isolated spdt contacts. Alarm terminals are male quick-connects (female quick-connects included for field installation). See rating above.

FLAME DETECTOR: C7027, C7035 OR C7044 Ultraviolet Flame Detector.

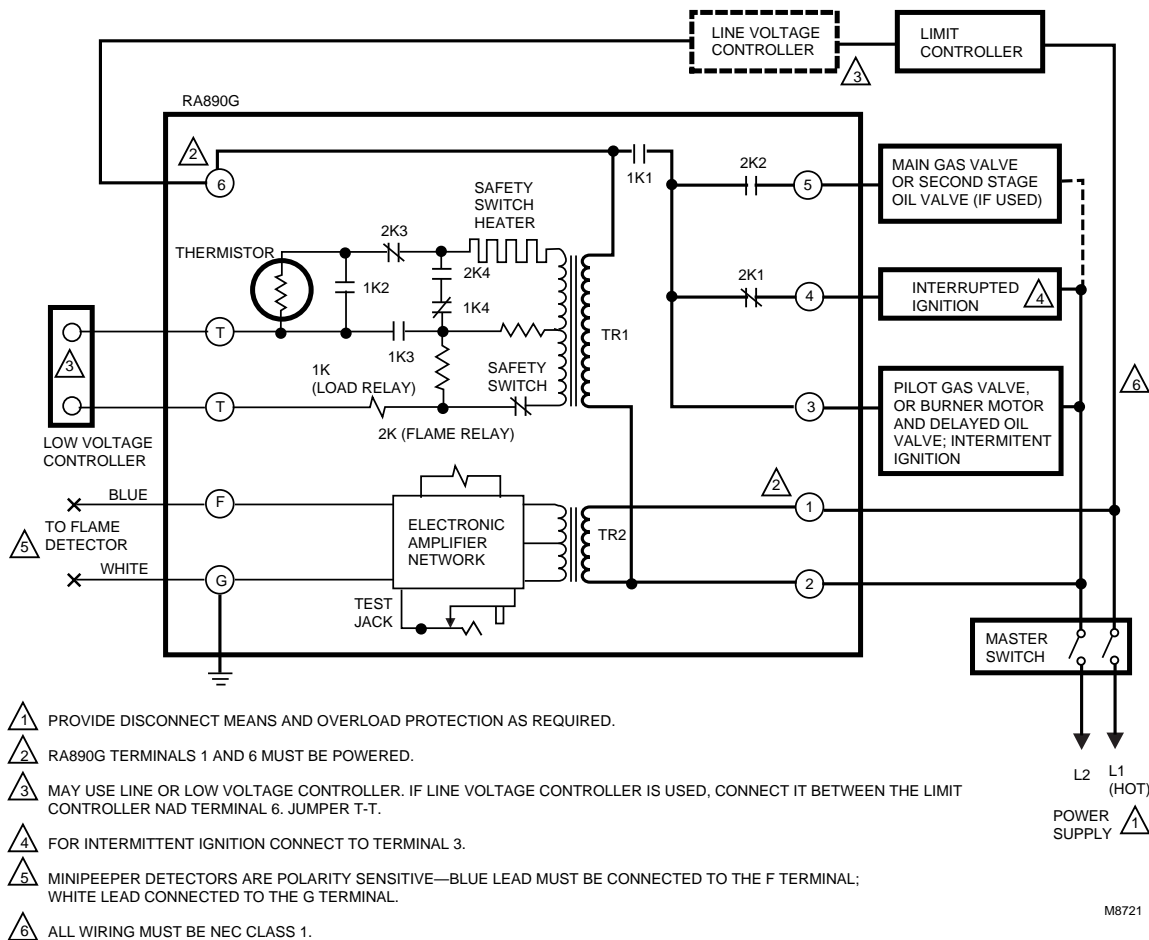
MOUNTING: Q270A Universal Mounting Base (ordered separately).

ELECTRICAL RATINGS:

Terminal	Electrical Load		120	240
			Vac	Vac
3	Burner	Full Load	5.2A	2.6A
	Motor	Locked Rotor	31.2A	15.6A
	Ignition ^a		3.0A	1.5A
	Pilot Fuel Valve		25 VA	25 VA
4	Ignition ^a		3.0A	1.5A
	Main Valve (Pilot Duty)		125 VA	125 VA
5	Alternate Rating: 25 VA pilot duty plus one or more motorized valves with total rating 400 VA opening, 200 VA holding.			

^a If Ignition and motor are connected to terminal 3, terminal 4 cannot be used. This is to prevent overloading relay 1K.

Fig. 2—Internal schematic of RA890G (typical external connections included).



- ⚠️ PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚡ RA890G TERMINALS 1 AND 6 MUST BE POWERED.
- ⚡ MAY USE LINE OR LOW VOLTAGE CONTROLLER. IF LINE VOLTAGE CONTROLLER IS USED, CONNECT IT BETWEEN THE LIMIT CONTROLLER AND TERMINAL 6. JUMPER T-T.
- ⚡ FOR INTERMITTENT IGNITION CONNECT TO TERMINAL 3.
- ⚡ MINIPEEPER DETECTORS ARE POLARITY SENSITIVE—BLUE LEAD MUST BE CONNECTED TO THE F TERMINAL; WHITE LEAD CONNECTED TO THE G TERMINAL.
- ⚡ ALL WIRING MUST BE NEC CLASS 1.

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