



Single Burner Supervision, Automatic or Manual Pushbutton Ignition,  
Plug-in SS100A FLAME-PAK, Plug-in Control Relays.

Power on PROTECTOFIER terminal L1 and L2 provides power to electronic network.

#### AUTOMATIC IGNITION

Provide wire jumper between terminal 12 and terminal 13 on PROTECTOFIER. Connect ignition transformer to PROTECTOFIER terminal 6.

Power on PROTECTOFIER terminal 12 (thru permissive safety limits and cycling circuit).

1. "ACF" CHECK relay "C" is energized thru N.C. contacts of "ACF" FLAME relay "F", low voltage winding of SS3CP TRANSFORMER, and SAFETY LOCKOUT switch circuit.
2. Ignition transformer is energized from terminal 6 (thru N.C. contact of FLAME relay "F" to provide electric spark ignition to the pilot. Pilot solenoid valve is energized from terminal 4.
3. With pilot flame established "ACF" FLAME relay "F" is energized.
  - a. FLAME relay "F" contacts transfer.
    - 1) N.C. "F" contact in safe-start checking and SAFETY LOCKOUT circuit opens.
    - 2) N.C. "F" contact in ignition transformer circuit opens to de-energize the ignition transformer.
    - 3) N.O. "F" contact in main valve circuit closes to energize main valve. Neon indicator light on PROTECTOFIER chassis will glow to indicate flame is established.

#### MANUAL PUSHBUTTON IGNITION

No jumper required between terminal 12 and terminal 13 on PROTECTOFIER. Use momentary type pushbutton with two normally open contacts. Connect one set of normally open contacts between terminal 12 and 13. Connect other set of normally open contacts between terminal 4 and ignition transformer primary.

Power on PROTECTOFIER terminal 12 (thru permissive safety limits circuit).

1. Press and hold "START" button.
  - a. "ACF" CHECK relay "C" is energized thru N.C. contacts of "ACF" FLAME relay "F", low voltage winding of SS3CP TRANSFORMER, and SAFETY LOCKOUT switch circuit.
  - b. Ignition transformer is energized thru contact of "START" button to provide spark ignition to the pilot. Pilot solenoid valve is energized from terminal 4.
2. With pilot flame established, respective "ACF" FLAME relay "F" is energized.
  - a. FLAME relay "F" contacts transfer.
    - 1) N.C. "F" contact in safe-start checking and SAFETY LOCKOUT circuit opens.
    - 2) N.O. "F" contact between terminal 12 and terminal 13 closes providing holding circuit around "START" pushbutton contact.
    - 3) N.O. "F" contact in main valve circuit closes to energize main valve. Neon indicator light on PROTECTOFIER chassis will glow to indicate flame is established.

(over)



Power Equipment Company  
Manufacturers Representative  
2011 Williamsburg Rd. Richmond, VA 23231  
(804) 236-3800 Fax (804) 236-3882

INSTALLATION, OPERATION AND MAINTENANCE SHALL CONFORM WITH NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS, NATIONAL AND LOCAL CODES, AND AUTHORITIES HAVING JURISDICTION. ANY MODIFICATION VOIDS APPROVALS.

3. Release "START" button. Ignition transformer is de-energized.

Failure to establish pilot flame during limited ignition trial cycle will cause SAFETY LOCKOUT switch contacts to open circuit to CHECK relay "C" coil. CHECK relay "C" is de-energized, pilot valve is de-energized and electric ignition is stopped. With no flame signal, main valve remains de-energized.

SAFETY LOCKOUT requires manual reset.

Flame failure during operation de-energizes fuel valves.

Automatic ignition model will automatically make one attempt to relight. Manual pushbutton start model requires manual pushbutton start to relight.

Power interruption to PROTECTOFIER terminal 12 de-energizes relays and fuel valves. Resumption of power on automatic ignition model will cause PROTECTOFIER to go thru another safe-start check and relight cycle. Manual pushbutton start model requires manual pushbutton start to relight.

Failure of CHECK relay "C" to prove safe-start check will prevent energizing fuel valves and ignition system.

**POWER EQUIPMENT CO.**

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[www.peconet.com](http://www.peconet.com)

**PROTECTOFIER**  
**AUTOMATIC OR MANUAL OPERATION**

SS 100A FLAME PAK

ACF { C - CHECK RELAY  
 F - FLAME RELAY

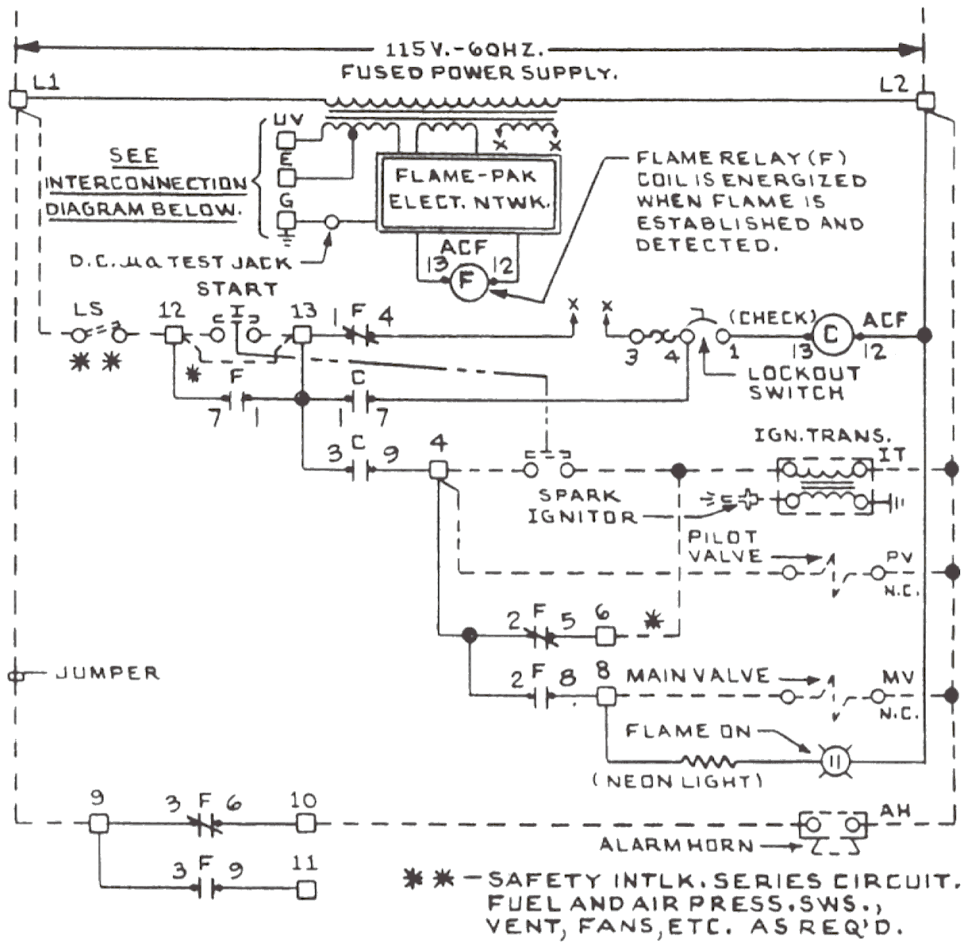
\* - P.B. FOR MANUAL OPERATION.  
 ADD JUMPERS AS INDICATED  
 FOR AUTOMATIC OPERATION.



**SINGLE BURNER  
 PROTECTOFIER**  
 (FORM 6642 VB  
 GROUP M2101.)

□ — INTERNAL WIRING.  
 - - - EXTERNAL WIRING.

**WIRING DIAGRAM**



\*\* - SAFETY INTLK. SERIES CIRCUIT.  
 FUEL AND AIR PRESS. SWS.,  
 VENT, FANS, ETC. AS REQ'D.

**SINGLE BURNER  
 PROTECTOFIER**  
 (FORM 6642 VB  
 GROUP M2101.)

\* - P.B. FOR MANUAL OPERATION.  
 ADD JUMPERS AS INDICATED  
 FOR AUTOMATIC OPERATION.

**NOTES:**

FLAME WIRE TO BE NO. 14 TYPE TW,  
 600V. INSULATED WIRE OR EQUAL.  
 FLAME WIRE MUST NOT BE IN SAME  
 CONDUITS WITH POWER WIRING.

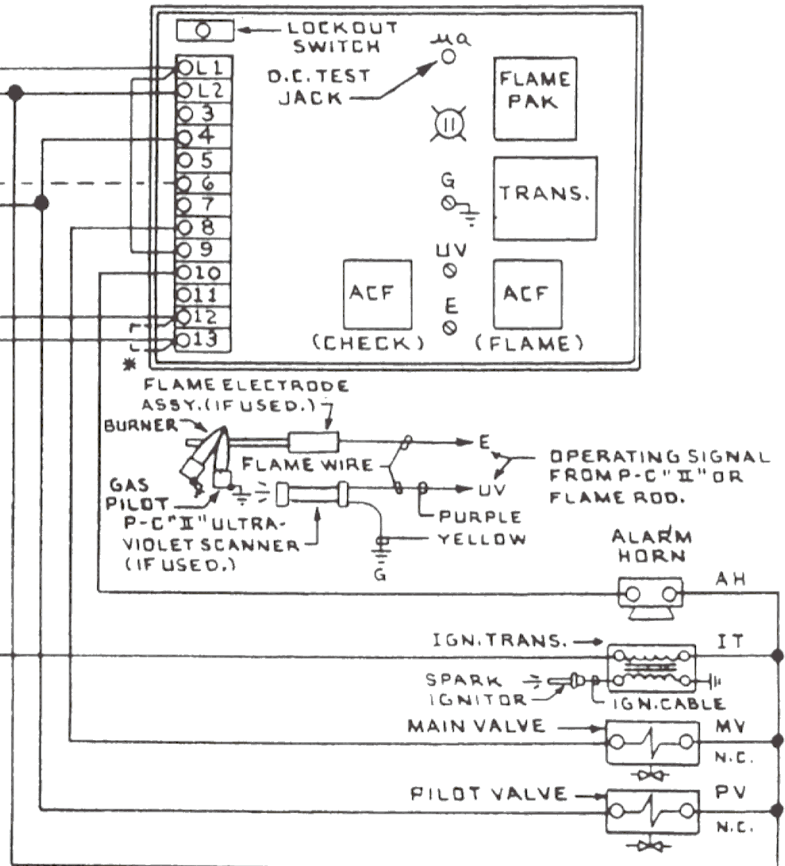
IGNITION CABLE MUST BE RUN IN  
 SEPARATE CONDUIT TO SPARK  
 ELECTRODE. (DO NOT MIX WITH  
 115V. WIRING.)

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 STANDARDS, NATIONAL AND LOCAL CODES, AND  
 AUTHORITIES HAVING JURISDICTION  
 ALL WIRING AND EQUIPMENT  
 EXTERNAL TO PROTECTOFIER  
 TO BE FURNISHED BY OTHERS  
 UNLESS OTHERWISE SPECIFIED.

**PROTECTION CONTROLS, INC.**  
 SKOKIE, ILLINOIS

WIRING DIAGRAM FOR:  
 PROTECTOFIER FORM 6642 VB GROUP M2101

JOB NO.	DRWN. BY	DATE	DRWNG. NO.
	H.R.V.	5-30-79	X-236



**INTERCONNECTION DIAGRAM**

REVISED AND REDRAWN. 10-1-81