Protectofier

COMBUSTION SAFEGUARD

Form 6642 VBL-NR

Multi-Burner Supervision, Automatic Ignition, Non-Relight, Plug-in SS100A FLAME-PAKS, Plug-in Control Relays, Built-in SSN TELEFIER for Flame Failure Position Indication.

Power on PROTECTOFIER terminals L1 and L2 provide power to electronic network.

Terminal L1 must be powered before terminal 12.

Power on PROTECTOFIER terminal 13 (thru safety limits circuit).

Power on PROTECTOFIER terminal 12 (thru operating control).

1. "ACF CHECK relay "C: is energized thru N.C. contacts of "ACF" FLAME relays "F", N.C. contact of "ACF" NON-RELIGHT relay "NR", N.C. contact of "ACF" LOAD relay, low voltage winding of SS3CP TRANSFORMER, and SAFETY LOCKOUT switch circuit.

2. Ignition transformer is energized from terminal 6 (thru N.C. contact of LOAD relay "L" to provide electric spark ignition to the pilot). Pilot solenoid valve is energized from terminal 4.

3. With pilot flames established, respective "ACF" FLAME relay "F" is energized and series circuit of "F" contacts energizes "ACF" LOAD relay "L".

   a. LOAD relay "L" contacts transfer.

      1. N.C. "L" contact in safe-start checking and SAFETY LOCKOUT circuit opens.

      2. N.C. "L" contact in ignition transformer circuit opens to de-energize the ignition system in series circuit with N.O. "C" contact and N.C. "N.R." contact.

4. N.O. "L" contact in NON-RELIGHT circuit closes to energize "ACF" NON-RELIGHT relay "NR". NON-RELIGHT relay "NR" contacts transfer.

   a. N.O. "NR" contact in SAFETY LOCKOUT circuit closes and electrically seals in "NR" relay thru a second N.O. "NR" contact.

PROTECTION CONTROLS, INC.

POWER EQUIPMENT CO.
Manufacturers Representative
2011 Williamsburg Rd. • Richmond, VA 23231
(804) 236-3800 • FAX (804) 236-3882
www.peconet.com

b. N.C. "NR" contact in pilot valve circuit opens. (pilot valve remains energized thru N.O. "L" contact).

c. N.O. "NR" contact in series with a N.O. "L" contact closes to energize the main valve.

d. Neon lamps on PROTECTOFIER chassis will glow to indicate pilot flames established. Neon lamp will glow as its respective FLAME relay "F" responds to flame signal upon establishment of flame. These indicator lights may be extended and brought to the face of operating panel but they must be NE51H (B2A) neon type and extended lamps and sockets must not have resistors.

Failure to establish pilot falme during 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 shuts off fuel supply by de-energizing fuel valves. NON-RELIGHT relay "NR" is held energized through series circuit of two N.O. "NR" contacts and N.O. "C" contact preventing a relight attempt. Safety lockout circuit is energized to lockout system.

Interruption in safety limits between PROTECTOFIER terminals L1 and 13 de-energizes fuel valves. When FLAME relay responds to loss of flame, safety lockout circuit is energized to lockout system.

Power interruption to PROTECTOFIER terminal L1 or opening of operating control circuit to termianl 12 will de-energize relays and fuel valves. Resumption of power will cause PROTECTOFIER to go thru another safe-start check and relight cycle.

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

PROTECTOFIER
WITH
S100A FLAME PAK

ACF
- C - CHECK RELAY
- F - FLAME RELAY
- L - LOAD RELAY
- NR - NON-RECYCLE RELAY

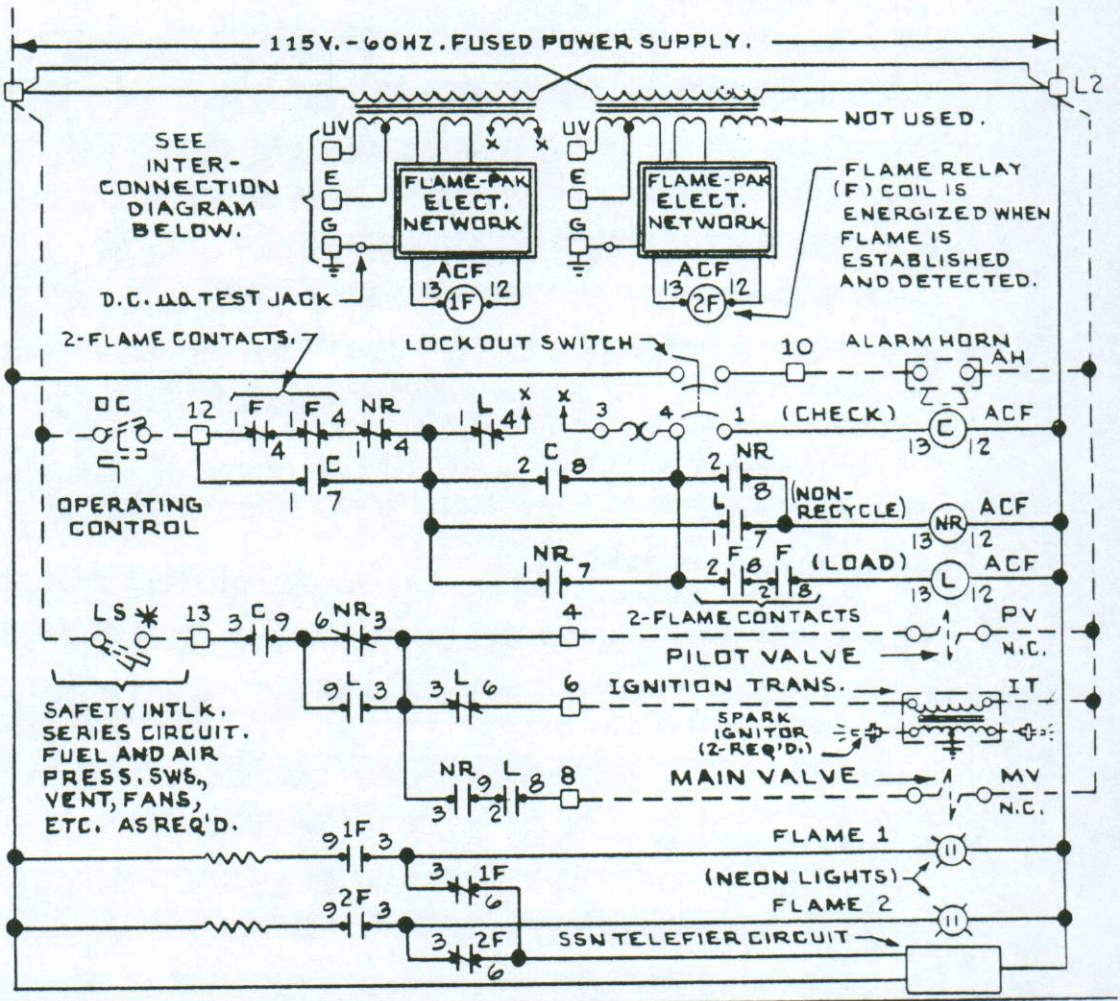
TWO BURNER
PROTECTOFIER
(FORM 6642 VBL-NR
GROUP M3102.)

3 5 7 9 11
□ □ □ □ □
NO CONNECTIONS.

□— INTERNAL WIRING.
- - - EXTERNAL WIRING.

✱ - NOTE:
INTERRUPTION IN THIS CIRCUIT CLOSES FUEL VALVES. WHEN FLAME RELAY RESPONDS TO LOSS OF FLAME, SAFETY LOCKOUT CIRCUIT IS ENERGIZED TO LOCKOUT SYSTEM.

WIRING DIAGRAM



TWO BURNER
PROTECTOFIER
(FORM6642 VBL-NR
GROUP M3102.)

115V.-60HZ.
FUSED
POWER SUPPLY.

NOTES:

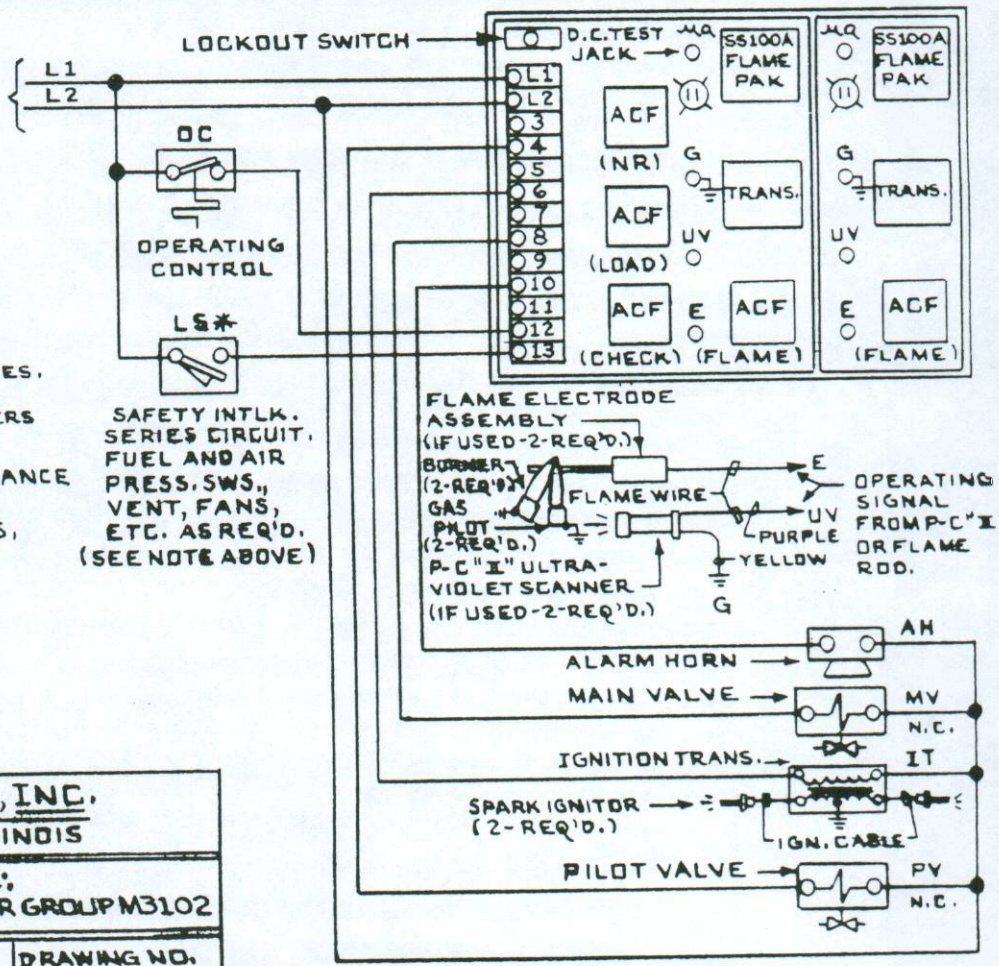
FLAME WIRE TO BE NO. 14 TYPE TW. 600V. INSULATED WIRE OR EQUAL. FLAME WIRE MUST NOT BE IN SAME CONDUITS WITH POWER WIRING.

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

WIRING AND INSTALLATION TO CONFORM WITH NATIONAL AND LOCAL ELECTRICAL CODES. ALL WIRING AND EQUIPMENT EXTERNAL TO PROTECTOFIER TO BE FURNISHED BY OTHERS UNLESS OTHERWISE SPECIFIED.

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

INTERCONNECTION DIAGRAM



PROTECTION CONTROLS, INC.
SKOKIE, ILLINOIS

WIRING DIAGRAM FOR:
PROTECTOFIER FORM 6642 VBL-NR GROUP M3102

JOB NO.	DRAWN BY	DATE	DRAWING NO.
	H.R.V.	6-6-79	X-330

REVISED AND REDRAWN. REV. 9-30-81