



Protectofier

COMBUSTION SAFEGUARD
Form 6642 VL

Multi-Burner Supervision, Manual Pushbutton Ignition,
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 provides power to electronic network.

Terminal L1 must be powered before terminal 12.

Power on PROTECTOFIER terminal 12 (thru permissive safety limits circuit) permits manual pushbutton ignition.

1. Press and hold "START" pilots pushbutton.
 - a. "ACF" CHECK relay "C" is energized thru N.C. contacts of "ACF" FLAME relays "F", and N.C. contact of "ACF" LOAD relay "L".
 - b. Ignition transformer is energized thru contact of "START" button to provide spark ignition to the pilots.
 - c. Pilot solenoid valve is energized to open (from PROTECTOFIER terminal 4).
2. 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 circuit opens.
 - 2) N.O. "L" contact between terminal 12 and terminal 13 closes providing holding circuit around "START" pilot pushbutton contact.
 - 3) N.O. "L" contact in series circuit with N.O. "C" contact between PROTECTOFIER terminals 7 and 8 closes to energize main gas valve. FLAME-ON indicator light to indicate all flame circuits established can also be con-

nected in parallel with main valve between PROTECTOFIER terminals 8 and L2.

- 4) 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 the operating panel but they must be NE51H(B2A) neon type and extended lamps and sockets must NOT have resistors.

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

Flame failure during operation de-energizes fuel valves.

Power interruption to PROTECTOFIER terminal 12 de-energizes relays and fuel valves.

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

The built-in SSN TELEFIER will indicate the flame position initially causing shutdown, by the flame signal neon light of the faulty position remaining lighted at reduced brilliance with one element glowing. All other neon lights will go out.

One of the SSN TELEFIER neon indicator lamps on the PROTECTOFIER chassis will glow when PROTECTOFIER terminal 3 is energized. Connect one N.C. contact of "START" pilots pushbutton between PROTECTOFIER terminals L1 and 3. When "START" button is depressed during light-off period, terminal 3 will be de-energized and neon light will gradually be extinguished. Neon lights on chassis will then glow in response to respective flame signal.



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

