

PROTECTION CONTROLS, INC.
Skokie, Illinois

MINI-UNIFIED
Form 76057BT
(Drawing X-349)

Single burner supervision, with purge and manual pushbutton ignition. Plug-in type "SST" Solid State Purge Timer, plug-in type "ACF" relays, plug-in type SS100A Flame Pak, safety lockout switch (providing trial for ignition), Start P.B., Stop P.B., Purging Light, Purged Light, Flame On Light, and enclosure.

OPERATING SEQUENCE

Power on PROTECTOFIER terminals 1 and 2 thru the safety and cycling limit switch circuit provide power to the electronic network, and energizes the SST purge timer and "PURGING" light.

1. When the purge time is complete, the "PURGED" light illuminates and the "PURGING" light goes out.
2. The SSR relay contact closes at the end of the purge cycle and energizes the ACF Check Relay when the "START" pushbutton is pushed. The SSR Relay contact insures that the ignition trial can not be initiated until the purge cycle is complete.
 - a) N.O. "C" relay contact in safety lock-out circuit closes to start limited ignition trial cycle period.
 - b) N.O. "C" relay contact in "SSR" circuit closes to hold in "C" coil.
 - c) N.O. "C" relay contact in the pilot/burner/ignition circuit closes to energize terminal 3. With either a burner motor starter interlock or a jumper between terminals 3 and 6, the pilot valve and the ignition transformer are powered.
3. When the pilot flame is established and detected by the flame sensor, the flame relay "F" contacts transfer.
 - a) N.O. "F" contact closes to hold in check relay. "START" P.B. may be released.
 - b) N.C. "F" contact opens to terminal 4 de-energizing the ignition transformer.
 - c) N.O. "F" contact closes to terminal 5 energizing the main valve and "FLAME ON" light.
 - d) N.C. "F" contact between SS3CP transformer and terminal 7 opens, stopping trial for ignition timing.
4. Failure to establish a pilot flame during limited ignition trial cycle will cause the safety lockout switch contacts to open and de-energize check relay "C" coil. The "C" contacts transfer, de-energizing the pilot valve and ignition transformer. Without a flame signal the main valve remains de-energized. Safety lockout requires manual reset. Push "RESET" button.
5. Flame failure during operation de-energizes the flame relay "F" contacts and shuts off power to the fuel valves. The timer will complete another purge cycle before ignition may be attempted.
6. Momentary power interruption, interruption of limits, or operation of "STOP" P.B. de-energizes the ACF relays. When power resumes, the control will complete another purge cycle before ignition may be attempted.

