

PROTECTION CONTROLS INC.  
Skokie, Illinois

PROTECTOFIER  
Form 7256 BH  
(Drawing X-341)

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

OPERATING SEQUENCE

AUTOMATIC IGNITION

Provide wire jumper between terminal 1 and terminal 7 on PROTECTOFIER  
connect ignition transformer to PROTECTOFIER terminal 4.

Power on PROTECTOFIER terminal 1 and 2 provide power to electronic  
network (thru safety and cycling limit switch circuits).

- 1 - "ACF" CHECK relay "C" is energized thru N.C. contacts of "ACF"  
FLAME relay "F", SAFETY LOCKOUT switch circuit and component check  
"TD" circuit.
- 2 - Ignition transformer is energized from terminal 4 (thru N.C. contact  
of FLAME relay "F") to provide electric spark ignition to the pilot.  
Pilot solenoid valve is energized from terminal 3.
- 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 1 and terminal 7 on PROTECTOFIER.  
Use momentary type pushbutton with two normally open contacts. Connect  
one set of normally open contacts between terminal 1 and 7. Connect  
other set of normally open contacts between terminal 3 and ignition  
transformer primary.

Power on PROTECTOFIER terminal 1 (thru safety and cycling limit switch  
circuits).

- 1 - Press and hold START button.
  - a) "ACF" CHECK relay "C" is energized thru N.C. contacts of "ACF"  
FLAME relay "F", SAFETY LOCKOUT switch circuit and component  
check "TD" 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 3.
- 2 - 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.O. "F" contact between terminal 1 and terminal 7 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.
- 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 shuts off fuel supply by de-energizing 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 1 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 opening of fuel valves and also prevent ignition.

N.O. CHECK relay contact in safe-start check circuit closes when CHECK relay "C" is energized jumpering component check "TD" circuit.

Suffix letter "H" in Form number indicates Alarm circuit option is provided. Alarm circuit will be energized when SAFETY LOCK-OUT switch trips on failure to light pilot. Alarm load to be limited to 50VA maximum. Suffix letter "E" in Form number indicates PROTECTOFIER is enclosed type.

**POWER EQUIPMENT CO.**

*Manufacturers Representative*

2011 Williamsburg Rd. • Richmond, VA 23231

(804) 236-3800 • FAX (804) 236-3882

www.peconet.com

8/28/74

# PROTECTOFIER

## AUTO/MANUAL OPERATION

SS100A FLAME-PAK  
 ACF { C - CHECK RELAY  
 F - FLAME RELAY

## SINGLE BURNER PROTECTOFIER (FORM 7256-BH)



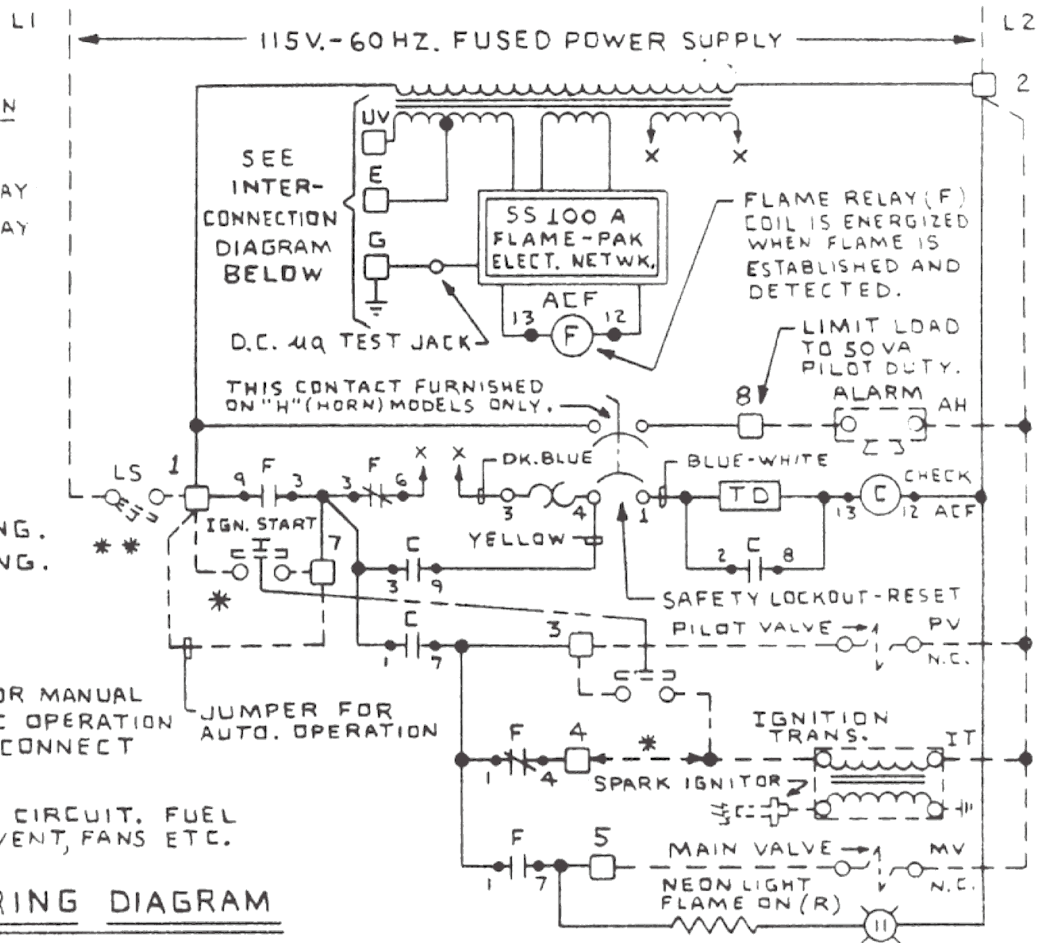
NO CONNECTION

—— INTERNAL WIRING.  
 - - - EXTERNAL WIRING.

\* PUSH-BUTTON SHOWN FOR MANUAL START. FOR AUTOMATIC OPERATION OMIT PUSHBUTTON AND CONNECT JUMPERS AS INDICATED.

\*\* SAFETY INTLK. SERIES CIRCUIT. FUEL AND AIR PRESS. SWS., VENT, FANS ETC. AS REQUIRED.

## WIRING DIAGRAM



### 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.

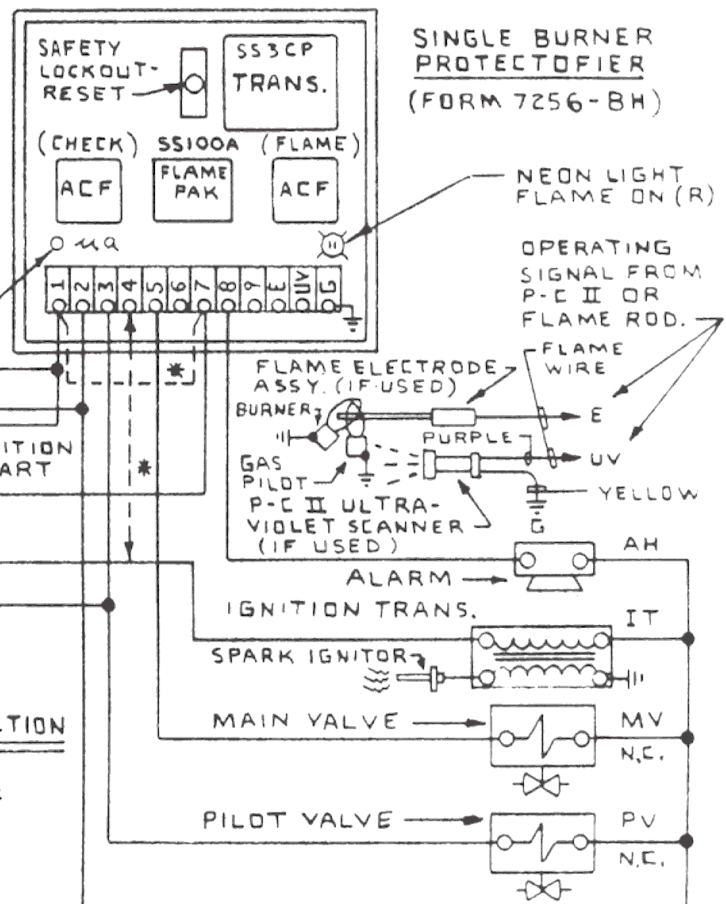
IGNITION CABLE MUST BE RUN IN SEPARATE CONDUIT TO SPARK ELECTRODE. (DO NOT MIX WITH 115 V. WIRING.)

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

### NOTES:

OPENTYPE CONTROL SHOWN. LETTER SUFFIX "E" AFTER FORM NUMBER INDICATES ENCLOSED MODEL. LETTER SUFFIX "H" IN FORM NUMBER INDICATES PROTECTOFIER PROVIDED WITH CONTACT FOR FLAME FAILURE ALARM (SHOWN). STANDARD TRIAL FOR IGNITION PERIOD IS 15 SEC. SUFFIX "5" FOLLOWING LETTER "B" INDICATES 5 SEC. TRIAL FOR IGNITION PERIOD.

## INTERCONNECTION DIAGRAM



## PROTECTION CONTROLS, INC.

SKOKIE, ILLINOIS

WIRING DIAGRAM FOR:  
 PROTECTOFIER FORM 7256-BH

JOB NO.	DRAWN BY	DATE	DRWG NO.
TR	RM 91	1-26-88	X-341

REDRAWN 1-26-88