Protectofier

COMBUSTION SAFEGUARD
Operates with FLAME ROD
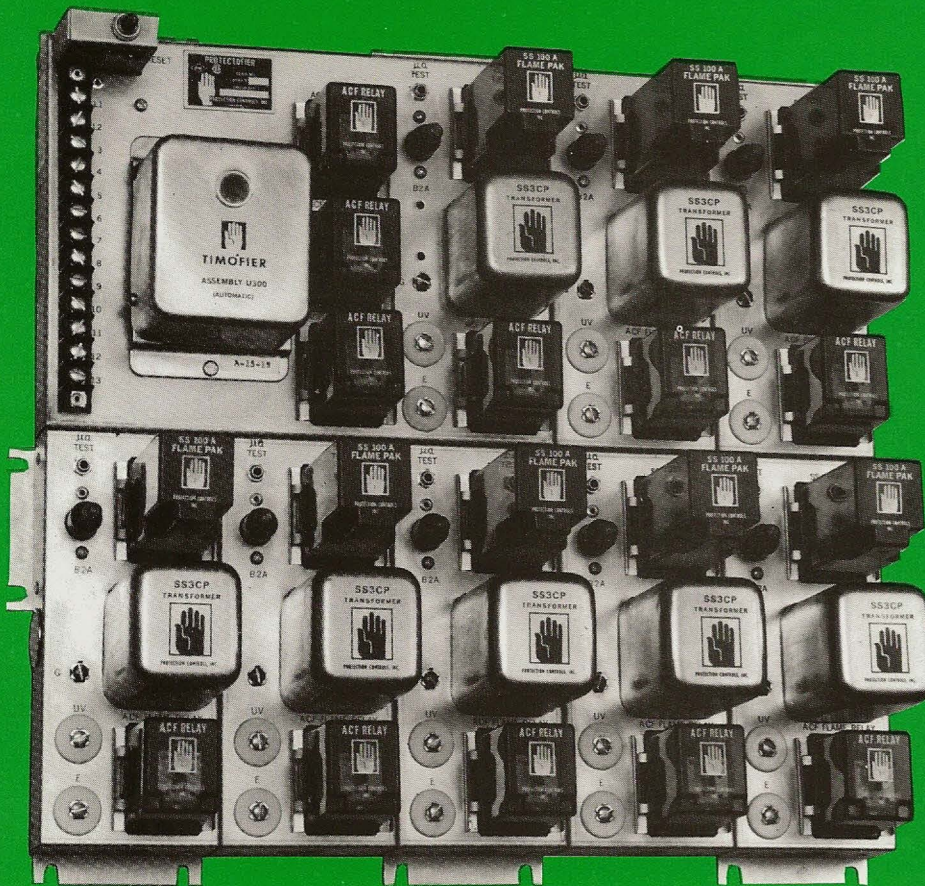and/or
P-C II (Ultra-Violet) SCANNER

- Modularized Multi-Burner Control
- Time Proven Plug-In Solid State FLAME-PAK Amplifier.
- Plug-In, Interchangeable Relays
- Plug-In Power Transformer.
- Flame Rod and/or Ultra-Violet Sensing. Independent or simultaneously using same FLAME-PAK Amplifier.

For continuous, automatic protection against build-up of combustible fuel mixtures due to flame failure or other faults in ovens, boilers, furnaces and other heating equipment.
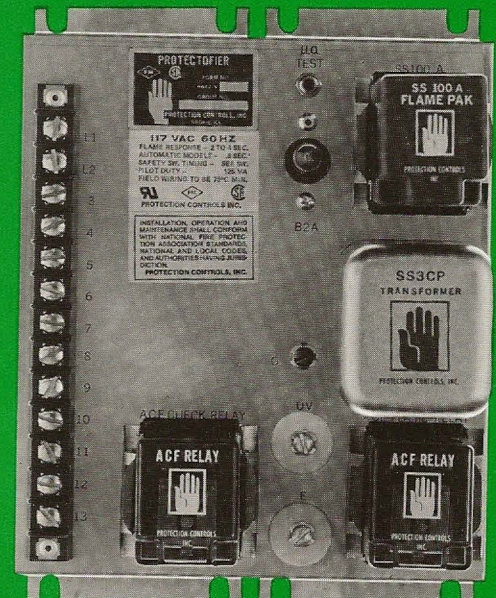
UNDERWRITERS LABORATORIES RECOGNIZED COMPONENT

FM

IRI ACCEPTED

Eight Burner PROTECTOFIER

Single Burner PROTECTOFIER

MADE IN U.S.A.

PROTECTION CONTROLS, INC.
ELECTRICAL SAFETY EQUIPMENT

SINGLE AND MULTI-BURNER

Protectofier
COMBUSTION SAFEGUARD

Operates with FLAME RODS and/or P-C II (Ultra-Violet) SCANNERS

RELIABLE PERFORMANCE STANDARDS Solid state circuitry . . . modular/plug-in construction . . . automatic purge and ignition . . . built-in flame-fault indication!

BASIC OPERATION

PROTECTOFIER monitors one or more burners, and responds to the presence or absence of flame via the *rectification principle*. When using a FLAME ROD, the flame itself serves as a switch to open or close a D.C. circuit to FLAME-PAK. Similarly, when using a P-C II SCANNER, a D.C. signal source is created by the ultra-violet sensitive tube *only* when the flame is scanned. With either sensing system, if the signal from flame to FLAME-PAK is interrupted (response time, 4 seconds or less), the circuit to the safety shut-off valve is broken, which automatically shuts down the complete system (and can also energize circuit to alarm). The TELEFIER light instantly indicates faulty burner in a multi-burner system.
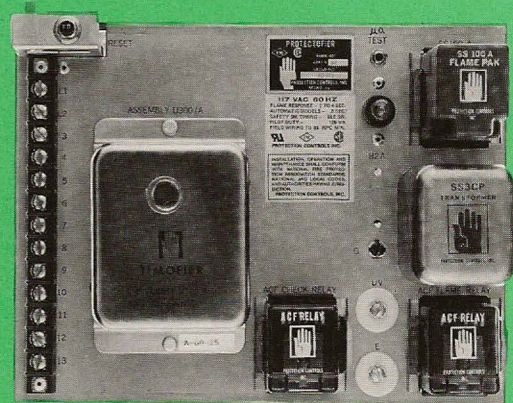
Single-Burner PROTECTOFIER

INSTALLATION DATA

MOUNTING

PROTECTOFIERS can be mounted in any position and any practical distance from supervised burners. Open types can be mounted in standard Control Panels. Separate enclosures, constructed of heavy gauge steel, are available.

FLAME SENSORS

PROTECTOFIERS function with any commercial flame rod assemblies and/or with P-C II (Ultra-Violet) SCANNER-even in a *single* burner system. The Ultra-Violet Scanner can be used with either gas or oil flames.

WIRING

Wiring between the flame sensor(s) and the PROTECTOFIER should be No. 14 gauge, type TW wire, insulated for 600 volts. All sensor wires may be run *together* in the same conduit. See Service Manual PSM-1187.

PROTECTOFIERS are supplied for operation at 120V 50-60Hz.

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

PCI ADVANTAGES

FLAME-PAK

Solid state module contains entire electronic circuit to supervise one burner—no components under chassis! Compact units provide exceptionally reliable operation, long service life, and are interchangeable for easy plug-in servicing.

TIMOFIER

Optional control for automatic system *purge and/or ignition trial timing*. It actuates "flush-out" of combustible atmosphere before start-up. Timing cycle is non-adjustable (specify range required). Plug-in convenience permits easy servicing and *inter-changing* of TIMOFIERS with different time cycles.

TELEFIER

Built-in flame-fault *indicator light* for multi-burner systems instantly shows exact burner position causing shutdown—eliminates trouble-shooting steps and downtime.

(Available with readout extended to *front* of Control Panel or enclosure.)

CONTROL MODULES

PROTECTOFIER Modules are teamed-up with the master chassis to supervise multi-burner systems. Each module contains a FLAME-PAK, TELEFIER, TRANSFORMER and FLAME RELAY to supervise one burner. The plug-in FLAME RELAY insures that each pilot flame is established before main valve is energized.

P-C II (ULTRA-VIOLET) SCANNERS

For use with either *gas* or *oil* flames. Compact units contain only an ultra-violet sensing tube for direct 2-wire connection to PROTECTOFIER. IMPORTANT: Flame rod assembles and P-C II SCANNERS can be used simultaneously in the same PROTECTOFIER System. P-C II W U-V SCANNER, provided with a 1/2" straight liquid-tite electrical connector and P-C II WRA U-V SCANNER, provided with a 1/2" right angle liquid-tite electrical connector are also available.

Five Burner PROTECTOFIER
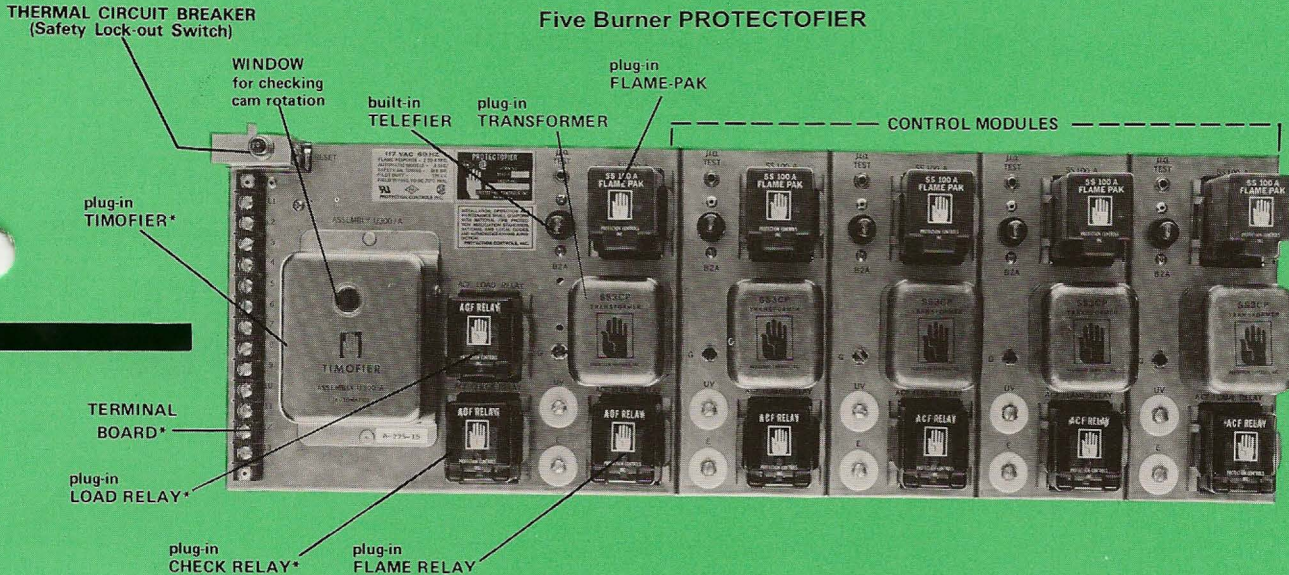
*Serves entire multi-burner system.

PROOF OF CLOSURE (P)

Form 6642VT and Form 6642VLT Models allow proof of closure contact on fuel valves to be interlocked before purge timer initiates.
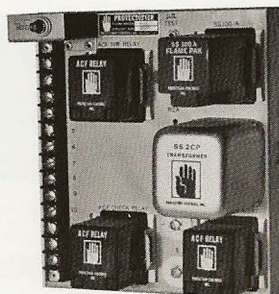
NON RE-LIGHT PROTECTOFIER (NR)

Single and Multi-Burner Models

These "NR" Models are available to meet safety requirements that do not permit a re-light upon flame failure on certain automatically operated burner installations. They have the same built-in reliability and features of the standard Form 6642V Series PROTECTOFIER, plus an additional plug-in ACF relay and the necessary circuitry to prevent a re-light attempt upon a flame failure. "NR" Automatic Models are available with plug-in U-300A TIMOFIER to provide for pre-purge.

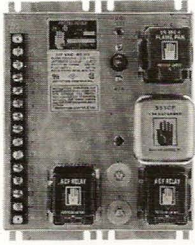Two Burner
NON RE-LIGHT PROTECTOFIER (NR)
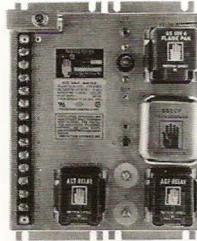
Single Burner
NON RE-LIGHT PROTECTOFIER (NR)

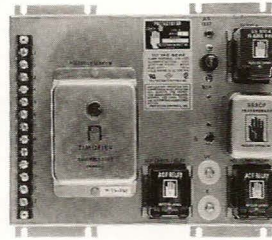# PROTECTOFIER

SINGLE BURNER WITHOUT TIMOFIER
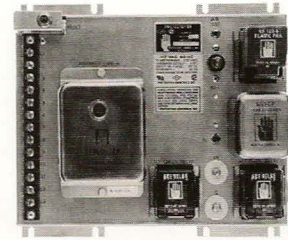

**FORM 6642VA
GROUP M2101**

**FORM 6642VB
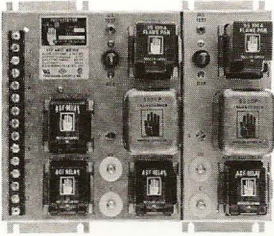GROUP M2101**

SINGLE BURNER WITH TIMOFIER
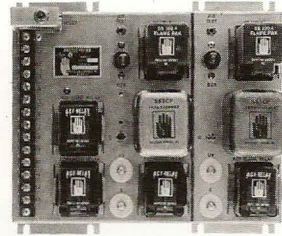

**FORM 6642VT
GROUP MP3101**

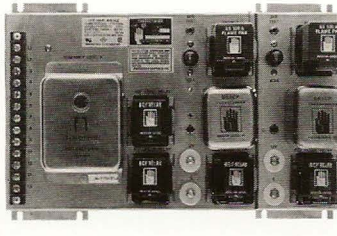**FORM 6642VBT
GROUP M3101**

TWO BURNER WITHOUT TIMOFIER

**FORM 6642VL
GROUP M3102**
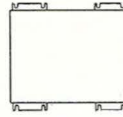
**FORM 6642VBL
GROUP M3102**

TWO BURNER WITH TIMOFIER

**FORM 6642VLT
GROUP MP4102**
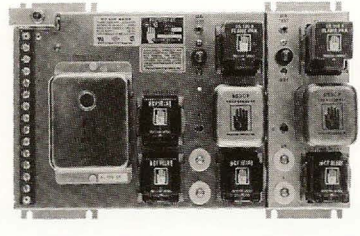
**FORM 6642VBLT
GROUP M4102**

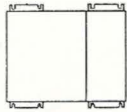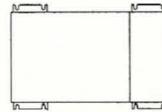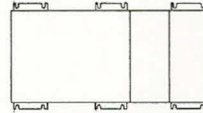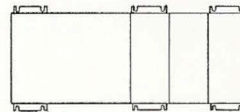|	
ONE BURNER Group M2101 6-1/2" W x 8-1/2" H	
TWO BURNER Group M3102 9-3/4" W x 8-1/2" H	
THREE BURNER Group M4103 13" W x 8-1/2" H	
FOUR BURNER Group M5104 16-1/4" W x 8-1/2" H	
FIVE BURNER Group M6105 19-1/2" W x 8-1/2" H	
SIX BURNER Group M4206 14" W x 16" H	
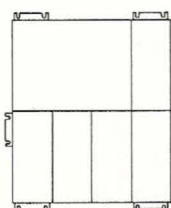
ONE BURNER Group MP3101 9-3/4" W x 8-1/2" H	M3101
TWO BURNER Group MP4102 13" W x 8-1/2" H	M4102
THREE BURNER Group MP5103 16-1/4" W x 8-1/2" H	M5103
FOUR BURNER Group MP6104 19-1/2" W x 8-1/2" H	M6104
FIVE BURNER Group MP4205 14" W x 16" H	M4205
SIX BURNER Group MP4206 14" W x 16" H	M4206

NOTE: PROTECTOFIERS are available to supervise any number of burners. See Price Bulletin 42.

"A" Indicates basic combustion safeguard model.

"B" (BREAKER) indicates lock-out switch model. Required for automatic-lighted installations. System "latches-out" after failure to light within ignition trial time and cannot attempt re-start until switch is manually reset.

"L" (LOAD relay) All multi-burner models include load relay.

"T" (TIMER) indicates TIMOFIER model PLUG-IN, FIXED-TIME assembly. The TIMOFIER provides purge time and ignition trial time.

"P" (PROOF OF CLOSURE) in group number of VT and VLT models.

"NR" (NON-RELIGHT) PROTECTOFIER available in all automatic models.