



OVEN CONTROLS

EN298 Certified Automatic Gas Control For gas appliances

The programmable flame safeguard (PFS) is a configurable electronic gas ignition system, specifically designed for ignition and control of gas burners and gas burning appliances with or without fans.

As a world market leader in gas ignition Tytronics has introduced the PFS safety gas control system to meet the increasing demand for safe automatic gas ignition systems. PFS products are designed for the control of gas cooking appliances such as ovens, grills and broilers, and gas heating systems that meet the requirements of the Electrical and Gas Authorities in the countries of use. Our PFS products can be used with natural, manufactured, and LP gas mixtures.

The PFS is designed for safety, simplicity and flexibility. The unit can control single or dual gas valves, provide single or dual spark ignition outlets and independent flame sensing using Tytronics patented flame rectification circuits. Other options such as air-proving or fan control are also available on request.

Safety

The unit has been designed to meet the rigorous requirements of EN298 for automatic gas controls. On each ignition sequence a safe start check is done to verify lockout operation, valve drive circuitry, microcontroller operation, flame signal and integrity of safeguards.

Double circuit redundancy ensures any single fault will mean the unit fails in a safe manner.

If for any reason a 'flame out' is detected, the unit will attempt re-ignition. The unit will shut down the gas and go to 'lockout' after a pre-determined number of re-ignition attempts. The diagnostic LED will indicate a fault code for ease of servicing. To restart, the user resets the system, generally by turning the user control (oven or grill burner knob) to the OFF position, then continuing with normal operation.

Simplicity

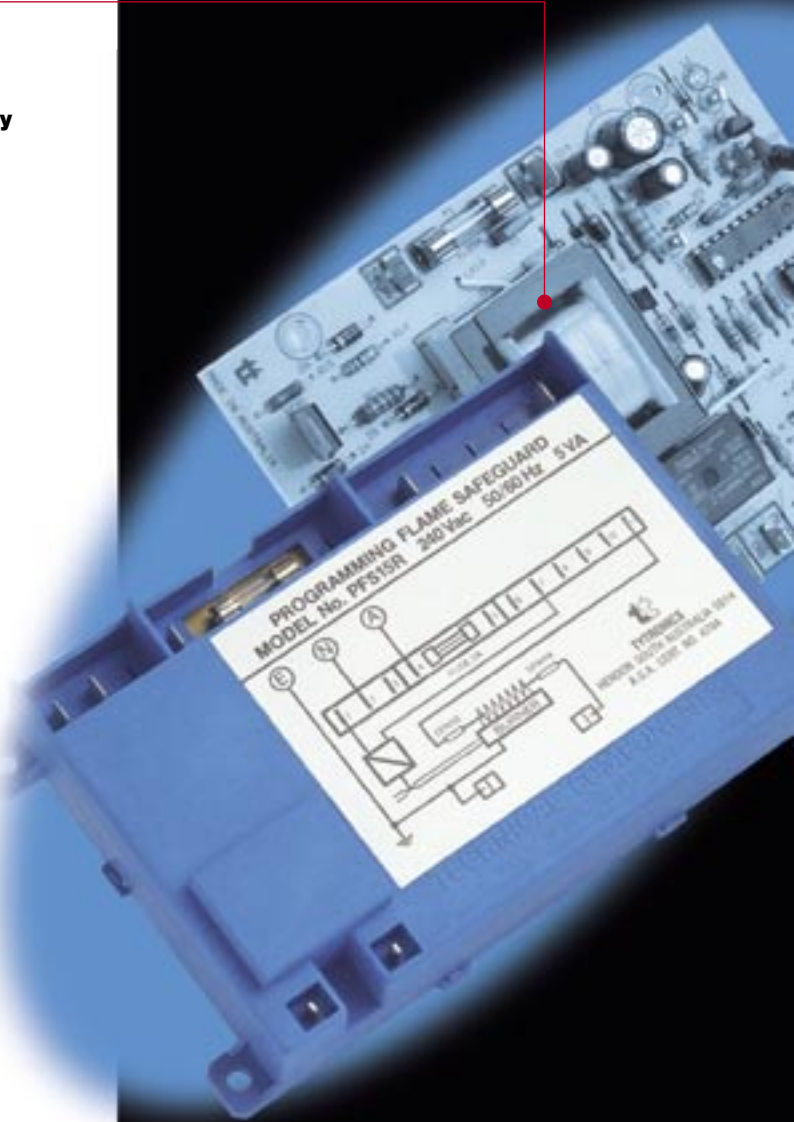
The PFS can be used on its own or in combination with a thermostat if temperature control is required. The unit can be supplied with or without housings in various voltage ranges: 230 VAC, 120 VAC or 24 VAC.

Flexibility

The microprocessor system allows parameters such as flame establishment time (5 – 15 secs), selection of ignition or re-ignition, number of re-ignition attempts and diagnostic information to be set and locked either at the factory or in the field.

Reliability

Direct spark ignition provides superior product life, in-service reliability and has low power usage requirements. The PFS incorporates Tytronics patented flame rectification sense circuit. This sense circuit is able to differentiate between flame presence and leakage to earth caused by dirt or grease build at the electrode and can tolerate false leakage currents up to ten times larger than those used in standard conduction circuits. Correct operation of flame sense circuits requires that the burner system be earthed.



*A safe and effective solution
for gas controls*



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Specification

Number of outlets

1 or 2 direct spark ignition

Supply voltage

120 VAC (96 – 132 VAC) at 60 Hz
230 VAC (187 – 264 VAC) at 50 Hz
24 VAC (20 – 28.5 VAC) at 50/60 Hz

Spark rate

4 – 8 Hz (6 Hz typical)
Other spark rates available

Spark voltage

Open circuit 30 kV
15 kV typical

Spark gap

Minimum 2.5mm
Maximum Typically 5.0mm at 35pf
Maximum spark gap may be increased if load capacitance is reduced below maximum specification

Timings

Safestart check nominal 1 sec
Flame establishment 5 - 15 sec programmable
Flame failure response time nominal 0.6 sec
Lockout recovery time 0.5 sec

Flame detection

Ionisation flame detector using rectification property of the flame
Sensitivity 0.25 μ A minimum

Relay contact load ratings

2 A typical

Environmental specification

Operating temperature (continuous)
0° C to 85° C (32° F to 185° F)
Relative Humidity (at 40° C non condensing)
95%

Connectors

Input 6.3mm (0.25") x 0.8mm (0.032")
Quick Connect tabs
Output 2.8mm (0.11mm") x 0.8mm (0.032")
Quick Connect tabs

Size

Housing 158 x 96 x 36mm
PCB 125 x 95mm

Fastenings

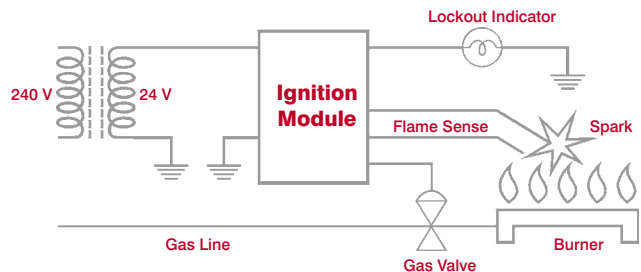
3 x 5mm Diameter holes

Certifications

These units have been constructed to comply with:
EN298: 1994 Automatic gas burner control systems for gas burners and gas burning appliances with or without fans
American Gas Association ANSI Z21.20 1997 Standard and,
Canadian Standard CAN/CSA-C22.2 no. 199-M89 Automatic gas ignition systems and components.



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TYTRONICS Pty Ltd
ABN 22 007 914 374

*Note: Specifications subject to change without notice.
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Australia

12 Circuit Drive
Hendon South Australia 5014

Phone : +618 8268 5400
Fax : +618 8268 2503
Email : sales@tytronics.com.au
Website : www.tytronics.com.au

United States of America

Products for Industry
5581 Toyon Bay
Long Beach California 90803

Phone : +562 498 7134
Fax : +562 498 7764
Email : pi4dacey@earthlink.net

Europe

ISPHORDING Germany GmbH
Askay 10
D-57439 Atterdorn Germany

Phone : +49 2722 9263-0
Fax : +49 2722 9263-31
Email : sales@isphording.de
Website : www.isphording.de

