

Masport[®]

CONVERSION

NATURAL GAS TO LPG

for

Grenada PG36



INSTALLATION

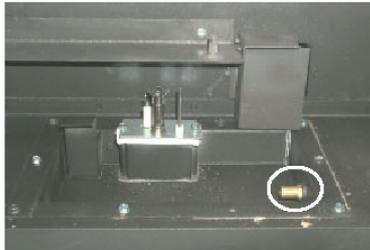
Conversion Kit for NG to LPG Model #516-969

THIS CONVERSION MUST BE DONE BY A QUALIFIED GAS FITTER IF IN DOUBT DO NOT DO THIS CONVERSION !!

Conversion Kit 516-969 Contains:

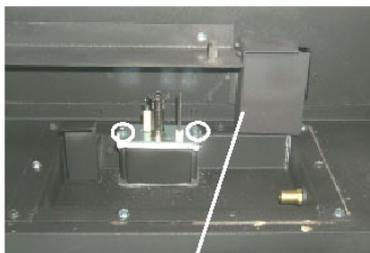
Qty.	Part#	Description
1	904-390	Burner Orifice #52
1	908-528	Red "LPG" label
2	908-255	Label "Converted to LPG"
1	918-334	Instruction Sheet
1	910-920	LPG Pilot Orifice

- 1) Shut off the gas supply and unplug the power cord.
- 2) Carefully remove the glass, logs and lava rock.
- 3) Remove burner.
- 4) Remove burner orifice with a 1/2" wrench and discard. Use a wrench to hold on to the elbow behind the orifice.
- 5) Reinstall new burner orifice LPG stamped #52 and tighten.



Burner Orifice

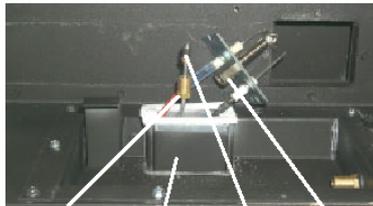
- 6) Remove the rear log burner tray.
- 7) Remove the 2 screws which secure the pilot.



Rear Log Burner Tray

- 8) Lift the pilot assembly and remove the pilot tube from the pilot holder using a 11mm wrench.

- 9) Remove the NG pilot orifice and replace it with the LPG orifice.



Pilot Tube Pilot Extrusion Tube Pilot Orifice Pilot Assembly

- 10) Install the pilot tube to the pilot assembly.
- 11) Place the pilot assembly over the pilot extrusion tube and secure it with 2 screws.
- 12) Replace the rear log burner tray.
- 13) Adjust the burner aeration setting to fully open and replace the burner.
- 14) Open the bottom louvre.
- 15) Remove the front cover by undoing the 2 screws.



Front Cover

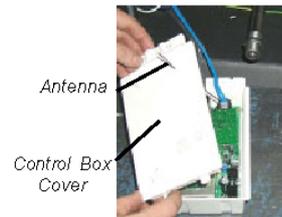
- 16) Stick the conversion label "This unit has been converted to LPG" over top of the serial number decal.
- 17) Replace the yellow "NG" label with the red "LPG" label.
- 18) Disconnect the 6 pin Molex connector and carefully pull out the control box.

NOTE: The control box is held in place with velcro.



6-pin Molex Connector

- 19) Remove the control box cover by undoing the 3 screws. Maneuver through antenna.

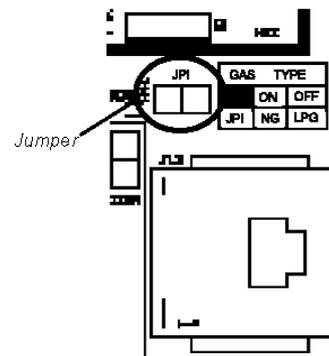


Antenna Control Box Cover

- 20) Remove the jumper using a plier.



Jumper Location



INSTALLATION

21) Stick the conversion label "This unit has been converted to LPG" on the control box cover.

22) Reverse steps 19 and 18.

23) Turn on gas supply and plug in power cord.

24) **Adjusting the Outlet Pressure**

All the adjustments must be carried out in the following order:

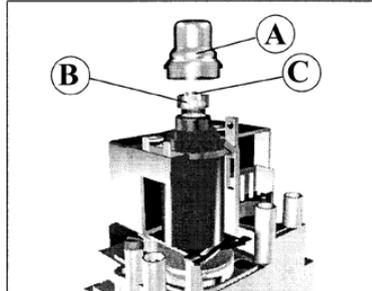
Remove the modulator plastic cap (A) using needle nose pliers.

Maximum pressure: Turn the unit ON to its highest input rating. Screw in the nut (B) to increase the outlet pressure and screw it out to decrease it. Use a 10 mm wrench.

NOTE: The outlet pressure must be set to maximum 2.75 kPa.

Minimum pressure: Remove one of the cables connected to the electric modulator. Keeping the nut (B) blocked, screw in the screw (C) to increase the pressure and screw it out to decrease it. Use a screwdriver 6 x 1 blade.

NOTE: The outlet pressure must be set to minimum 0.72 kPa.

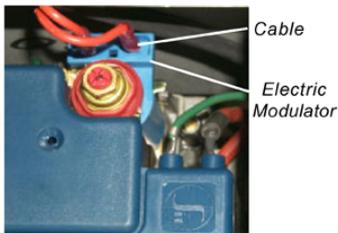


25) At the end of all setting and adjustment operations, check electrical insulation and gas leaks.

26) Check operation of flame control.

27) Check for proper flame appearance and glow on logs.

Installer Notice:
These instructions must be left with the appliance.



After carrying out all adjustments, block the setting screws with paint, taking care not to obstruct the breather orifice of the pressure.

Put back the modulator plastic cap.

WARNING: To ensure the correct operation of the modulator it is necessary that the plastic cap (A) is returned to its original location.

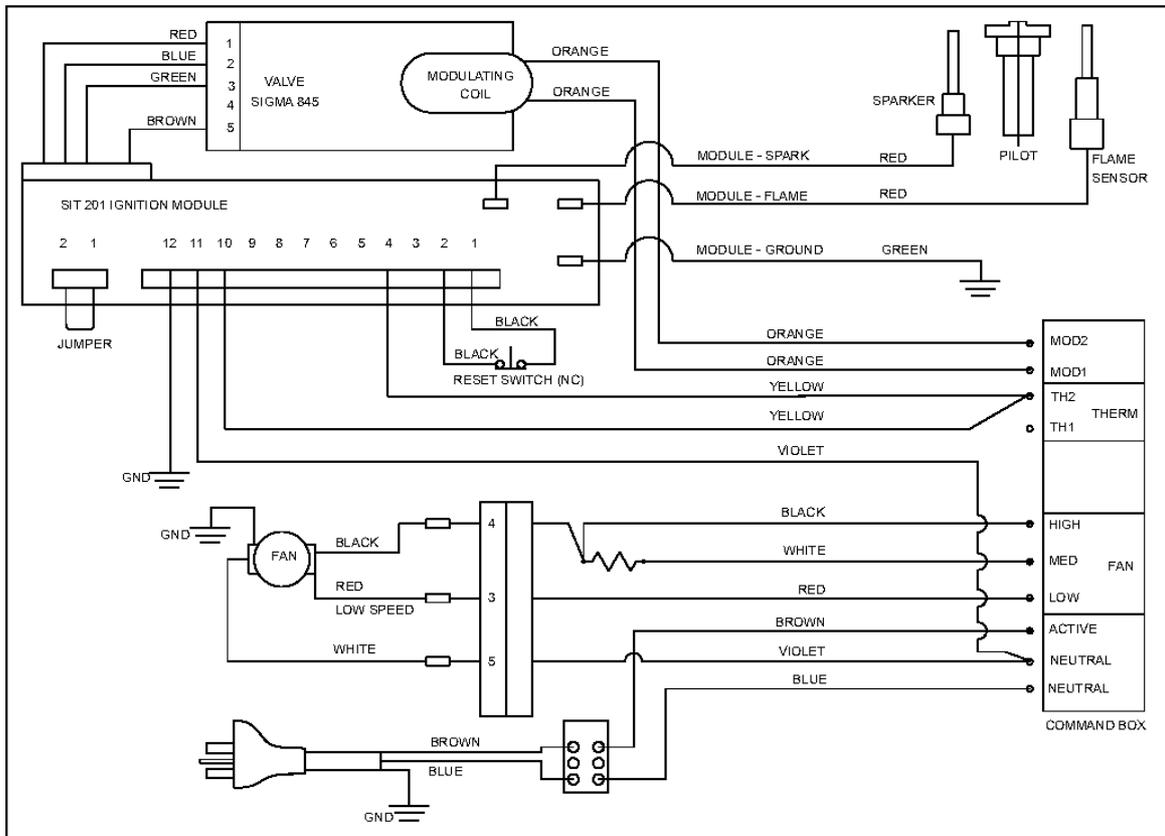
INSTALLATION

WIRING

This heater requires a 240V A.C. supply for the gas control to operate. A 240V A.C. power supply is needed for the fan/blower operation.

Caution: Ensure that the wires do not touch any hot surfaces and are away from sharp edges.

CAUTION: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.



WARNING: Electrical Grounding Instructions

This appliance is equipped with a three pronged (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from this plug.

Masport®

CONVERSION

NATURAL GAS TO LPG

for

Roma PG33



INSTALLATION

Conversion Kit #436-967 for NG to ULPG

THIS CONVERSION MUST BE DONE BY A QUALIFIED GAS FITTER IF IN DOUBT DO NOT DO THIS CONVERSION !!

Conversion Kit 436-967 Contains:

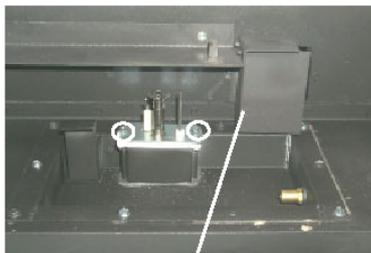
Qty.	Part #	Description
1	904-575	Burner Orifice #55
1	918-273	Red "ULPG" label
2	918-272	Label "Converted to ULPG"
1	918-339	Instruction Sheet
1	910-920	ULPG Pilot Orifice

- 1) Shut off the gas supply and unplug the power cord.
- 2) Carefully remove the glass, logs and lava rock.
- 3) Remove burner. See important note on page 11 and 18.
- 4) Remove burner orifice with a 1/2" wrench and discard. Use a wrench to hold on to the elbow behind the orifice.
- 5) Reinstall new burner orifice stamped #55 and tighten.



Burner Orifice

- 6) Remove the rear log tray.
- 7) Remove the 2 screws which secure the pilot.

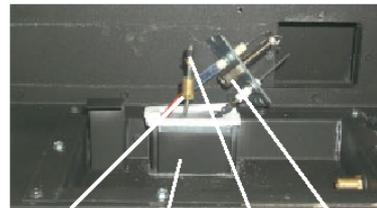


Rear Log Tray

- 8) Lift the pilot assembly and remove the pilot tube from the pilot assembly using a 11mm wrench.

- 9) Remove the NG pilot orifice and replace it with the ULPG orifice.

- 10) Re-install the pilot tube to the pilot assembly.



Pilot Tube Pilot Extrusion Tube Pilot Orifice Pilot Assembly

- 11) Re-install the pilot assembly over the pilot extrusion tube and secure it with 2 screws.

- 12) Re-install the rear log tray.

- 13) Adjust the burner aeration setting to fully open and re-install the original with the ULPG burner OR maintain minimum vent configurations as outlined on page 11 or 18.

- 14) Open the bottom louvre.

- 15) Stick the conversion label "This unit has been converted to ULPG" over top of the serial number decal.

- 16) Replace the yellow "NG" label with the red "ULPG" label.

- 17) Remove the screw from the module and pull off the module cover.



screw module cover

- 18) Pull out the 2 orange wires attached to the valve, and the connector from the module.

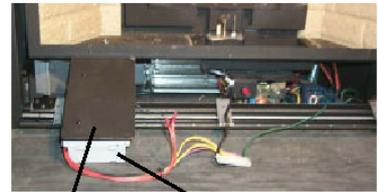


orange connector wires connector

- 19) Carefully pull out the control box.

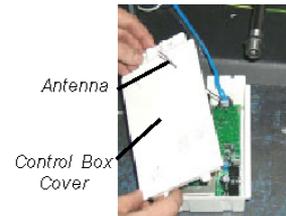
- 20) Remove the heat shield from the control box by removing the 2 screws.

NOTE: The control box is held in place with velcro.



heat shield control box

- 21) Remove the control box cover by undoing the 3 screws. Maneuver through antenna.



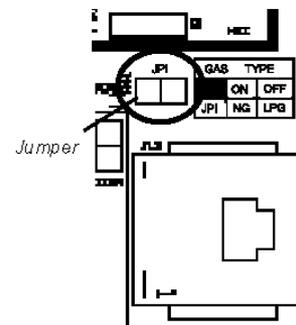
Antenna

Control Box Cover

- 22) Remove the jumper using a plier.



Jumper Location



- 23) Stick the conversion label "This unit has been converted to ULPG" on the control box cover.

INSTALLATION

24) Reverse steps 22 and 17.

25) Check venting configuration on pages 17 & 18.

26) Turn on gas supply and plug in power cord.

27) **Adjusting the Outlet Pressure**

All the adjustments must be carried out in the following order:

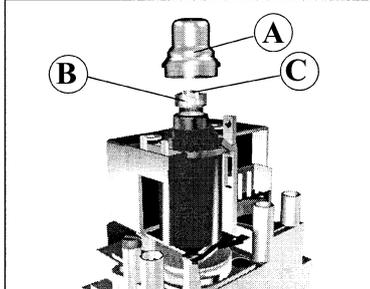
Remove the modulator plastic cap (A) using needle nose pliers.

Maximum pressure: Turn the unit ON to its highest input rating. Screw in the nut (B) to increase the outlet pressure and screw it out to decrease it. Use a 10 mm wrench.

NOTE: The outlet pressure must be set to maximum 2.40 kPa.

Minimum pressure: Remove one of the cables connected to the electric modulator. Keeping the nut (B) blocked, screw in the screw (C) to increase the pressure and screw it out to decrease it. Use a screwdriver 6 x 1 blade.

NOTE: The outlet pressure must be set to minimum 0.60 kPa.



28) At the end of all setting and adjustment operations, check electrical insulation and gas leaks.

29) Check operation of flame control.

30) Check for proper flame appearance and glow on logs.

Installer Notice:
These instructions must be left with the appliance.



After carrying out all adjustments, block the setting screws with paint, taking care not to obstruct the breather orifice of the pressure.

Put back the modulator plastic cap.

WARNING: To ensure the correct operation of the modulator it is necessary that the plastic cap (A) is returned to its original location.

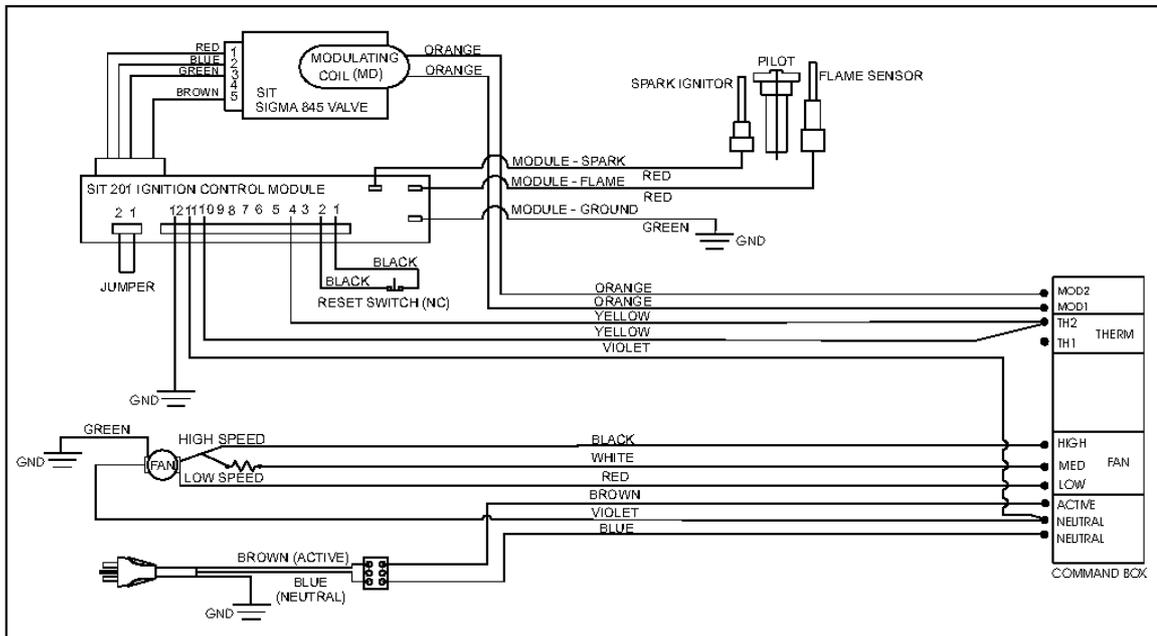
INSTALLATION

WIRING

This heater requires a 240V A.C. supply for the gas control to operate. A 240V A.C. power supply is needed for the fan/blower operation.

Caution: Ensure that the wires do not touch any hot surfaces and are away from sharp edges.

CAUTION: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.



WARNING: Electrical Grounding Instructions

This appliance is equipped with a three pronged (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from this plug.



ECS II TROUBLE SHOOTING GUIDE

for

Geneva ECS Series

Grenada ECS

Hampton ECS

Roma ECS

Madrid ECS

Monaco ECS

Newport ECS

Newport Pier ECS

Guide to correct operation of the 0537402 ABC Ignition and Flame Failure Module

NOTE: ALL ECS SYSTEMS ARE POLARITY SENSITIVE. BEFORE TESTING, ENSURE POLARITY IS CORRECT

System Checks: -

To check the operation of the 537 ABC you will require a digital multi-meter with the functions to measure AC/DC Voltage, Continuity or Resistance and Micro-Amps.

It is critical that the appliance is earthed and that the active and neutrals are not reversed. For an initial inspection, turn off the power supply and check wiring for continuity. This also applies to the Electrode and Flame rod wiring.

Check the Electrode and Flame Rod ceramic insulators for signs of cracks. Cracking can cause leakage to earth of HT for spark and loss of flame rod signal.

Check that the connections are according to the wiring diagram.

An internal fuse of 3.5amp (Fast blow) is located inside the box. It can be replaced if required. Spark Ignition electrode gap should be 2 - 4mm.

Flame sensitivity lockout value is 0.5 μ A. (Micro-amps).

We recommend that a stable value of greater than 1.5 μ A is an acceptable measurement for a normal flame signal. This can be measured using a micro-amp meter in series with the flame rod output.

Connections.

Terminals 5,6 and 7 are bridged.

Terminal 10 is the Active supply.

Terminal 11 is the Neutral connection.

Terminal 12 is the Earth connection.

Terminal 13 is a Neutral connection.

Terminal 14 is an Active connection only when the Flame is on.

Fault Finding.

No Ignition when appliance is turned on.

If there is power to terminal No: 10 but the heater is not operating, the 537 ABC Module may be in the lockout mode.

To reset the 537 ABC, turn off the power supply for 10 secs and then turn the power on again. If terminal 1 a is active, check the internal 3.5amp fuse.

If the fuse is OK and there is power to terminal 1 0, check other connections are in place. If these checks are correct, the ignition electrode should spark at the same time as the gas control solenoid valves open. At this point the Spark Electrode will activate for up to 10 seconds maximum until the flame has been established. Terminal 14 will be active as soon as the flame has been sensed. If the 537 is still not operating continue with the following checks.

Electrode and flame rod check.

If there is no spark, check the continuity of the HT cable. Check both the Flame rod and spark electrode so that there is no short circuit to earth and spark gap is correct. A positive check on the spark is to use a jumper wire and connect one end to earth and hold the other end with insulated pliers 4mm from the Spark Generator on the 537 ABC. If there is no spark to earth then change the module.

Sigma Gas Control

The gas valve should open at the same time that the Igniter sparks. If there is no gas to the burner when this occurs, check the solenoid coils for continuity. EV1 coil resistance is 0.8 - 0.9k Ohms. EV2 coil resistance is 6 - 7k Ohms. Check that the gas pressure regulator has been adjusted to allow gas to flow. Check that there is gas to the inlet of the appliance.

Appliance ignites but goes to lockout.

If there were no faults with the gas control this would indicate that the Flame Rod circuit requires to be checked. Make sure there is correct earthing of the appliance including the burner or chassis. Check flame rod cable for continuity making sure there is no short-circuit to earth and there is the correct gap between the probe and the burner. To test the flame for the correct ionisation signal, you must connect a multi-meter in series with the flame rod and set the function to measure micro-Amps. The module will go to lockout if the flame current sensitivity is less than 0.5 micro-Amps. The approximate signal strength on high flame can be about 10 micro-Amps and on low it could be approximately 4 micro-amps. The signal strength will fluctuate but should be greater than 1.5 micro-amps at all times.

Please take precautions because the ionisation probe can have a high negative voltage and can cause shock.

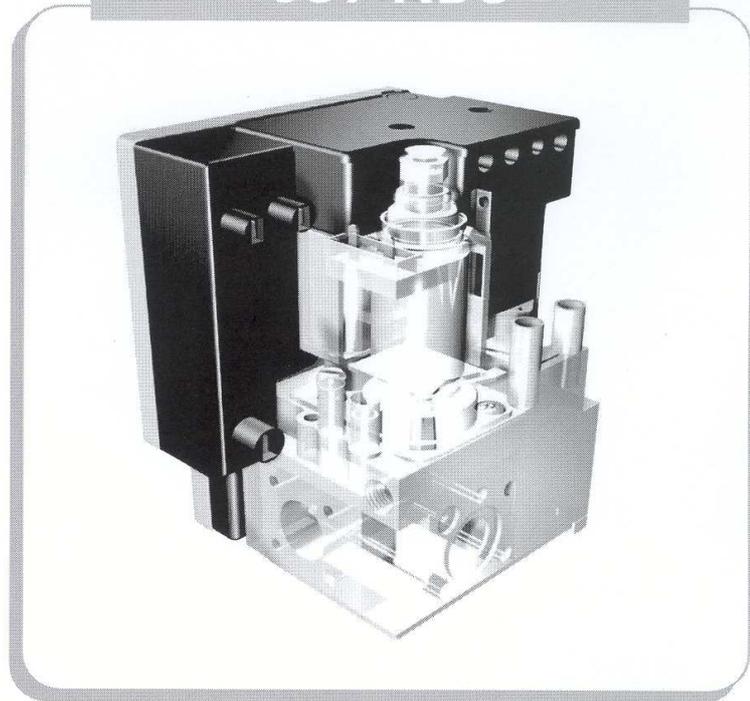
Fuse blowing continually.

Should the fuse continue to blow. Please check the solenoid coils for any sign of them being shorted. If you remove the 537ABC from the gas control you can still start the ignition sequence on the appliance, as this will eliminate the coils. If the fuse still blows then checks need to be carried out on the Fan and wiring for short circuits.



SIT Group

537 ABC



**537 ABC - ELECTRONIC FLAME
CONTROL DEVICE FOR INTEGRAL
MOUNTING ON SIT SIGMA
MULTIFUNCTIONAL CONTROLS**

Subject to change without notice

9.955.486 108

w w w . s i t g r o u p . i t



537 ABC

DESCRIPTION

The 537 ABC is an electronic flame safety device for controlling a gas appliance using the principles of flame rectification.

The 537 ABC automatic device has been designed for domestic gas appliances with or without a fan in the combustion circuit; with direct ignition or ignition by means of an intermittent pilot in applications which require either non-volatile or volatile lockout. The 537 ABC family of products has been specifically designed for fixing on SIT 840, 845 and 848 SIGMA multifunctional controls by means of an exclusive plastic container which integrates itself with the valve body and simplifies connection of the solenoid valves.

APPLICATIONS

The 537 ABC is an automatic ignition control for applications with intermittent operation in accordance with EN298 for:

- boilers with natural draught
- boilers with forced draught including dynamic control of the air pressure switch.

NORMATIVE REFERENCE

EN 298

Automatic gas burner control systems for gas burners and gas-burning appliances with or without fans.

BASIC FEATURES

- Compact design
- Direct assembly on the gas control
- Incorporated igniter
- Direct burner ignition (DBI) or by intermittent pilot (IP)
- Manual reset function and remote signalling of the non-volatile lockout state
- Multiple plug-in connectors
- Utilises well established electronic technology for high reliability of operation
- Precise and repeatable timing
- Flame detection by ionization
- EC approval according to EN 298 standard
- Repetition of the cycle after loss off flame during operation
- Permanent lock-out visualization, a without thermostat input being present
- Suitable for applications at low ambient temperatures

Options available

- Fan and air pressure switch control
- Volatile lockout version for specific applications
- Possibility to connect an automatic safety thermostat in series with the solenoid valve with manual lockout following its operation
- Different flame current sensitivity options may be specified
- Protection rating IP44
- Several pre-purge and safety timings can be tailored to the application.

537 ABC



OPERATION

Normal operation (natural draught or fan assisted)

During the waiting or purge time, T_w or T_p , the unit verifies that there is no parasitic flame signal present, and that the internal circuitry is operating correctly. If the unit is used on a fan-assisted application, the air pressure switch is verified to be in the N.C. (normally closed) or "no flow" position.

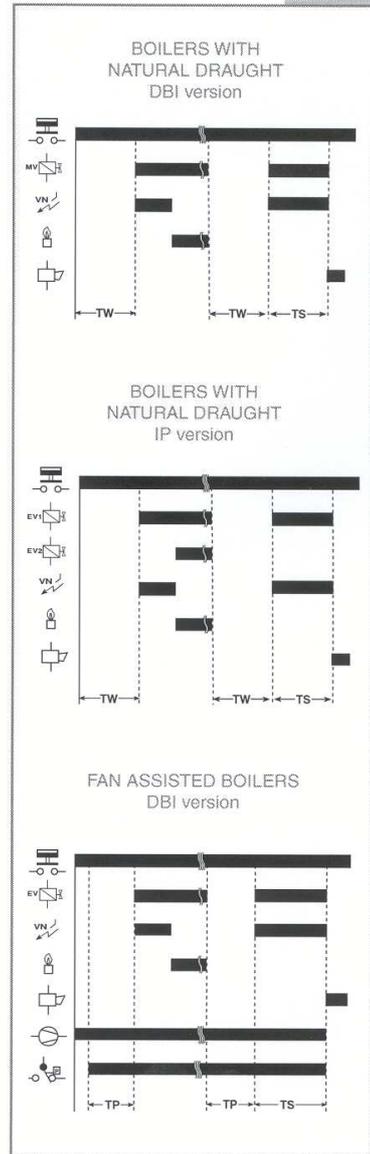
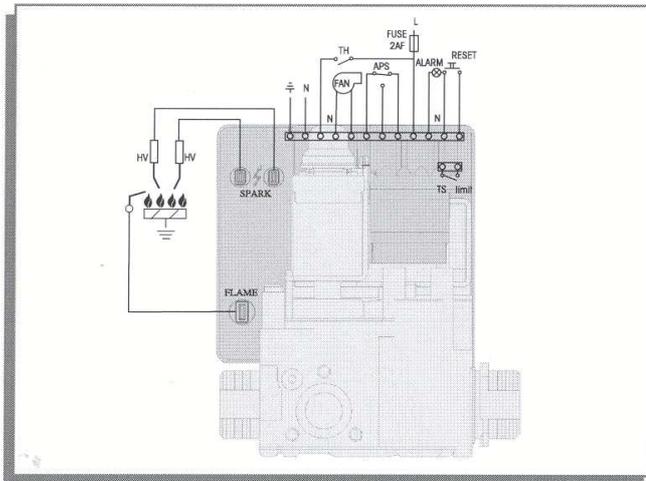
Upon powering the fan, the unit will not begin the operating sequence until the N.O. (normally open) or "flow" position is activated on the air pressure switch. After the scheduled waiting time T_w , or purge time T_p , the built-in igniter and the gas valve are energized. This commences the safety time, T_s . The ignition spark will ignite the gas and the flame will be sensed by the HV electrode.

Upon sensing the flame, the HV spark will be suppressed and the gas valve will remain energized. When the thermostat is satisfied, the valve and fan are de-energized and the control returns to the stand-by mode. The safety time of the 537 ABC has a constant duration in all operating conditions and, in particular, does not depend on the moment the pressure switch is switched over.

Resetting the unit

To reset the unit the reset switch is depressed. If a first reset is not successful, wait at least 10 seconds before the next attempt.

WIRING DIAGRAM





537 ABC

TECHNICAL DATA

AMBIENT WORKING TEMPERATURE

-20 TO + 60 °C

HUMIDITY

95 % max at 40 °C

SUPPLY VOLTAGE

230 Vac - 15 %, + 10 %, 50-60 Hz

POWER CONSUMPTION

10 VA

ELECTRICAL RATINGS

Gas valves: 230 Vac, 0.5 A, $\cos\phi \geq 0.4$

Fan: 230 Vac, 1 A, $\cos\phi \geq 0.4$ (optional)

Allarm: 230 Vac, 1 A, $\cos\phi = 1$

ELECTRICAL CONNECTIONS

High voltage probe: male fast-on connector 2.8 mm X 0.5 mm

Flame detection probe: male fast-on connector 4.8 mm X 0.8 mm

Other connections: male Molex series 2599 suitable for female Molex series 3001 and 3002 or compatible.

PROTECTION DEGREE

Standard IP 40

IP 44 with gaskets

TIMING

Minimum waiting time T_w or purge time T_p : 1.5 ... 40 sec.

Maximum safety time T_s : 3 ... 60 sec.

FLAME SENSING

Minimum flame current: 0.5 μ A

Recommended flame current: > 3 times the minimum current

FUSING

Internal: 4 A fast.

External: 3.15 A fast or less depending on the electrical loads. This fuse protects the device in the event of overloading or short circuits and prevents the intervention of the internal fuse.

IGNITION

Ignition voltage: 15 KV at 30 pF load

Repetition rate: 25 Hz standard (1 + 25 Hz)

Max. length of the cable: 2 m

Spark gap recommended: 2-4 mm

MOUNTING

Integrated on SIT SIGMA multifunctional gas controls.

DIMENSIONS - 537 ABC with 845 SIGMA VERSION G3/4 ISO 228

