AGS Parksafe Control Panel

Gas Detection and Ventilation Control System

Installation & Operation Manual

Please read this manual carefully and retain for future use.

This gas detection and ventilation control system is designed for installation into car parking facilities and enclosed garages in the United States of America. It is designed to be paired with AGS Nitrogen (NO_2) and Carbon Monoxide (CO) gas detectors.

The Parksafe control panel will monitor Parksafe gas detectors in numbers up to 16 per control panel.

CONTENTS

INSTALLATION

Planning

This gas detection and ventilation control system is designed for installation into car parking facilities and enclosed garages in the United States of America.
It is designed to be paired with AGS Nitrogen (NO_2) and Carbon Monoxide (CO) gas detectors that will be linked via MODBUS back to this Parksafe control panel. The Parksafe control panel will monitor the connected detectors in numbers up to 16 per panel.

The Parksafe will make or break a dry contact internally on Alarm 1 and a second contact on Alarm 2. This is to have a live feed to the ventilation system wired through the contact so that on alarm, the Parksafe can activate the fans. This can either be via a direct live to the fan or via a run signal. There is a second relay for Alarm 2 that will activate after alarm 2 has been activated for an extended period of time. This can be used for a link to the BMS or other external indication device. The Parksafe also has the 0-10VDC output to allow the panel to drive VSD's based on the gas detector outputs.

The Parksafe is designed to be located in an office or area within the carpark not accessible to the public.

⚠

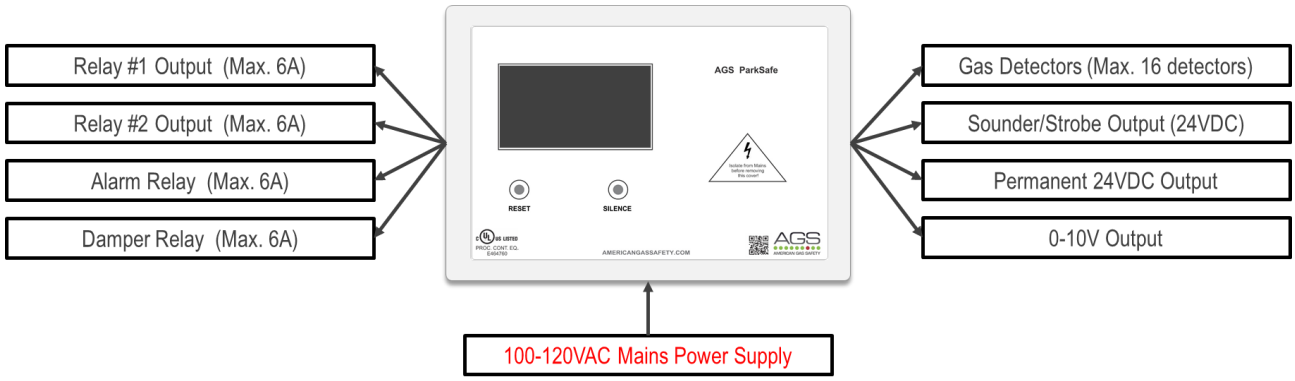
Please refer to your detector manual for important information regarding coverage, location and positioning including areas and conditions to avoid.

Generally, the installation height of a sensor for Nitrogen Dioxide would be close to the ground, and for Carbon monoxide gases, sensors would be positioned at a higher point in the area. Any recommended heights may vary based on air flow and temperature conditions in addition to the proposed application and location.

Carbon Monoxide (CO) gas	Breathing Zone - 1700mm (5ft 6") from ground level.
Nitrogen Dioxide (NO_2) gas	Low Level - 300mm (1ft) from ground level.

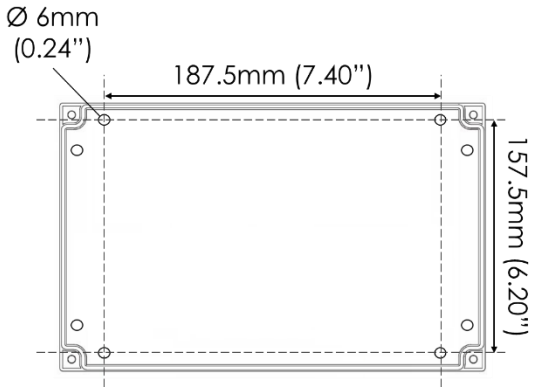
Typical Installation Arrangement

Place the panel 48-60 inches above finished floor level for ADA compliance.



Fixing

Unpack all the parts!



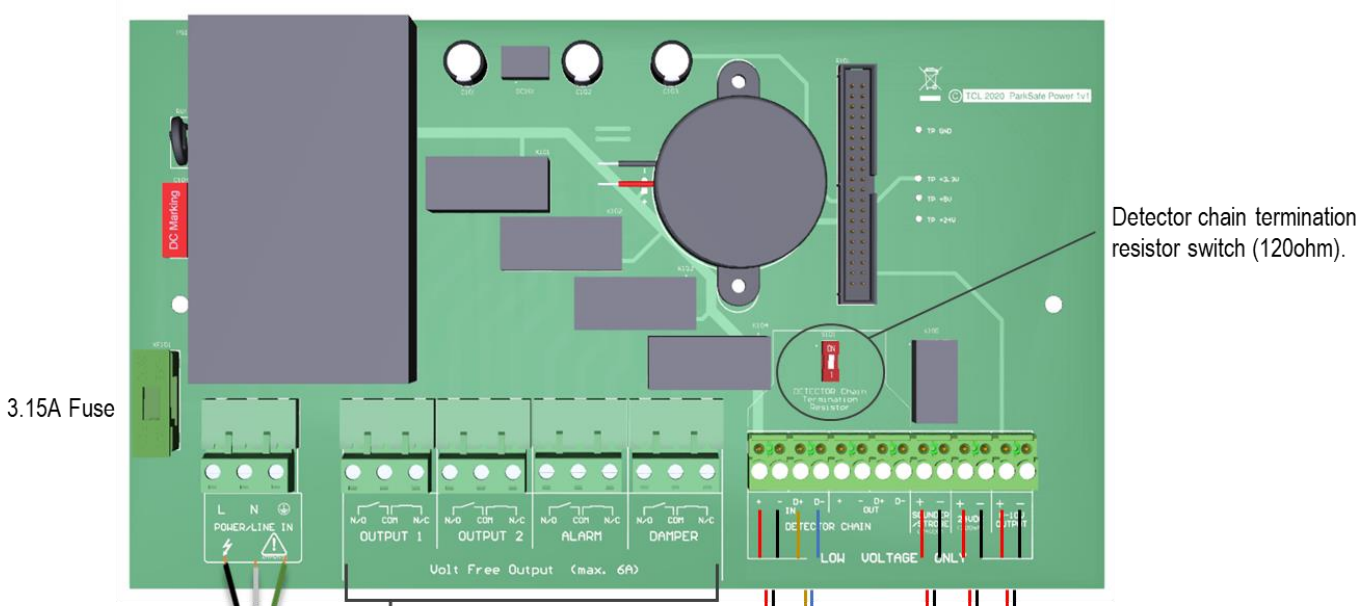
1. Carefully remove the front cover from the unit by unscrewing the four bolts located at each corner. To do this – use the socket wrench provided.

2. Mark the four screw holes located on the back of the enclosure to the wall. Ensure the wall surface is flat to prevent base distortion.

3. After executing the mounting and the connections – replace the front cover and insert the security caps over the four bolts.

⚠ Be careful when creating access for cables – Damage to boards will void any warranty.

Wiring your Parksafe Panel



1. Power / Line In
110-120VAC
Max. 3Amp

2.
Output 1
1st relay output for vent system

Output 2
2nd relay output for vent system

Alarm
Time delayed relay following Output 2

Damper
Relay output with [Output 1, 2 or Alarm]

(Volt free / Non-latching / Max. 6A)

3. Detector Chain
12/24V
Power
+ / -

Modbus
Data
+ / -

6. 0-10V **Output**

5. Permanent 24V DC **Output**

4. Sounder/ Strobe Output Relay 24VDC

1. POWER/ LINE IN

100-120VAC single phase mains power should be supplied to the [POWER/LINE IN] connector using a 3 core cable and fused at 3A.

When mains power is supplied to the panel - a red LED will illuminate located on the front cover.

---

2. OUTPUT 1 RELAY

This relay output switches when any external AGS gas detectors reach 'pre-alarm' status and the [0-10V OUTPUT] will send 5V to ventilation systems.

OUTPUT 2 RELAY

This relay output switches when any external AGS gas detectors reach 'alarm delay' status and the [0-10V OUTPUT] will send 10V to ventilation systems.

ALARM RELAY

This relay output switches when any external AGS gas detectors reach 'alarm delay' status for longer than the selectable 1-5 minutes time following the [OUTPUT 2] relay.

DAMPER RELAY

This relay output can switch together with either OUTPUT 1, OUTPUT 2 or ALARM relays - selectable in the settings menu.

---

3. DETECTOR CHAIN

12-24VDC power and Modbus communication data is wired to AGS Parksafe gas detectors.

Up to 16 detectors can be connected to the Parksafe panel and chained up to *500 yards approx from the panel.

* Detector *chain length varies depending on chain configuration, wire type and condition.*

For more information refer to your AGS Parksafe detector manual.

---

4. SOUNDER/ STROBE

This relay output (24VDC) is for an external sounder alarms/ strobe lighting to activate on alarm.

---

5. 24VDC

This is a permanent 24VDC power output for external auxiliary devices.

Max output: 200mA.

---

6. 0-10V OUTPUT

This output can drive ventilation systems. Under normal operating conditions, this output can send either 0 or 2V – selectable in the settings menu.

The [0-10V OUTPUT] will send 5V when [OUTPUT 1] relay is activated and 10V when [OUTPUT 2] relay is activated.

Parksafe Detector Identification

When wiring multiple detectors to the Parksafe panel it is important to identify each detector and in which monitoring zone the detector is located for the Park Safe system to receive and display data. Detector ID switches are fitted to detector circuit boards.

For more information refer to your Parksafe detector manual.

Detector Chain Termination Resistor Switch

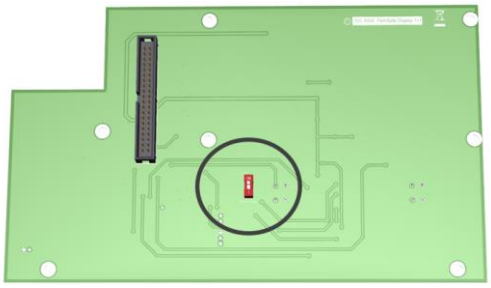
Signal communication issues may occur where the bus length is too long or high baud rates are used. In this instance – *terminating at each end* of the chain may help the quality of the data signal.

To do this - turn on the [CHAIN TERMINATION RESISTOR] switch.
For more information refer to your Parksafe detector manual.

Settings Switch

On the front display circuit board you'll find a SETTINGS switch – when switched to ON, the screen will display the settings menu – you can now configure your Parksafe system.

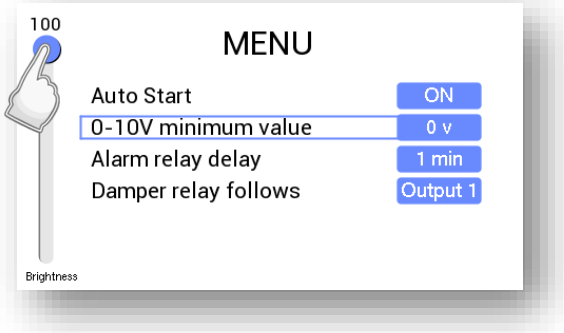
When changes have been made – turn the SETTINGS switch off and the system will automatically restart.



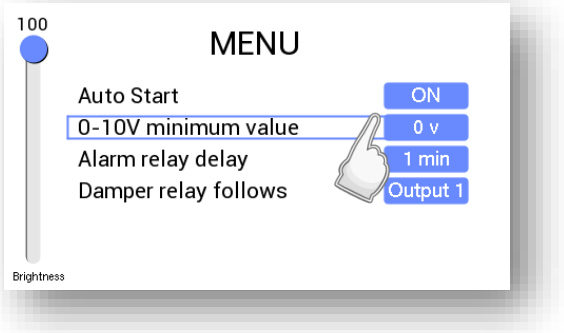
Settings Menu

The Parksafe panel has a touch screen which allows the engineer/ user to configure the system.

Adjust the screen brightness.
(Press or slide the cursor up and down)



Change/select option.
(Press the blue option box or press and hold)



Menu Options Explained

FUNCTION	OPTION	*Explanation*
Auto start	- ON - OFF	*In the event of a power loss - the Parksafe panel will automatically restart when power is restored, or not.*
0-10V minimum value	- 0V - 2V	*0-10V output value under normal/ safe conditions.*
Alarm relay delay	- 1 - 2 - 3 - 4 - 5	*Time (minutes) for alarm relay to switch when detectors reach alarm status. (Following second relay: Output 2).*
Damper relay follows	- Output 1 - Output 2 - Alarm	*This relay output can switch together with either OUTPUT 1, OUTPUT 2 or ALARM relays.*

Factory Set Condition

Auto start	- OFF	Alarm relay delay	- 1
0-10V minimum value	- 0V	Damper relay follows	- Output 1

Specification

Product:	AGS Parksafe Control Panel
Display	4.3" Touch Screen TFT
Power Input Voltage	100-120V AC
Current Consumption Approx.	48W max (fully loaded)
Internal Fuse	3.15A
Operating Temperature / RH Approx.	14 – 122°F / 30-85% RH non-condensing
Audible Alarm Buzzer dB	65 dB (300mm distance in quiet conditions)
Maximum Gas Detectors	16 max
Gas Detector Wiring Length Approx.	± 500 Yards
Housing Material	Polylac PA-765
Flame Rating	UL 94
Approvals	CE, RoHS
O/All Dimensions (H x W x D) mm / inch	7.08 x 10 x 3.03"

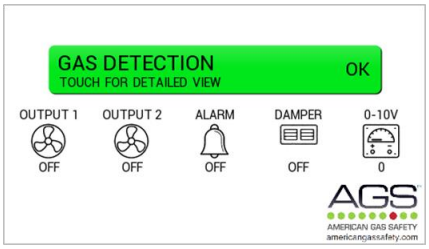
OPERATION

First Power Up

On connecting mains power, the Parksafe control panel will 'warm up' for approximately 60 seconds – during this time the screen will display an 'system initialising' message.

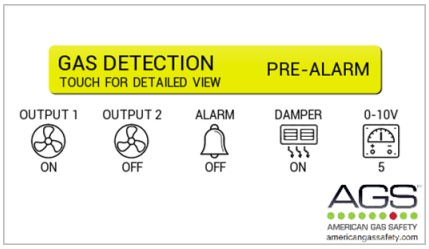
The panel will now search for detector signals.

Home Screen & Alarm Condition



When the system has completed initialising, the home screen will display an overview of each relay output and system condition.

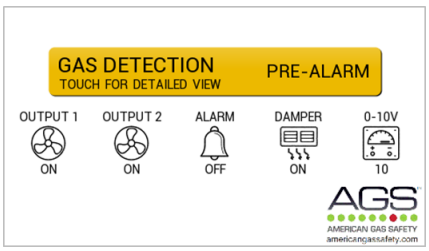
System OK.
Under normal/ safe conditions.



System in 'Pre-Alarm' condition.
When gas detected reach pre-alarm levels.

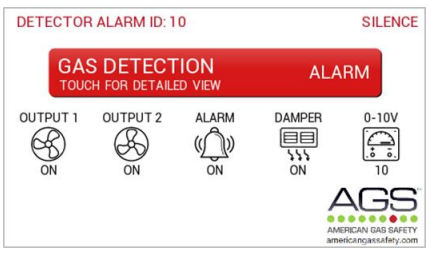
- *OUTPUT 1 relay: activated.*
- *0-10V output: 5V*

Other relays and external devices may activate– see settings menu.



System in 'Alarm Delay' condition.
When gas detected reach dangerous alarm levels.

- OUTPUT 1 relay: activated.
- OUTPUT 2 relay: activated.
- 0-10V Output: 10V



System in Alarm condition.
When gas levels remain dangerous beyond the delay time.

- Gas detector 'ID' appears on screen.
- *The internal buzzer will sound to alert the user.*
- *The ID shown will be the detector that signals an alarm first.*

To silence the internal buzzer – press the 'SILENCE' button on the front panel.
This will also silence any external audio sounders connected to the panel.

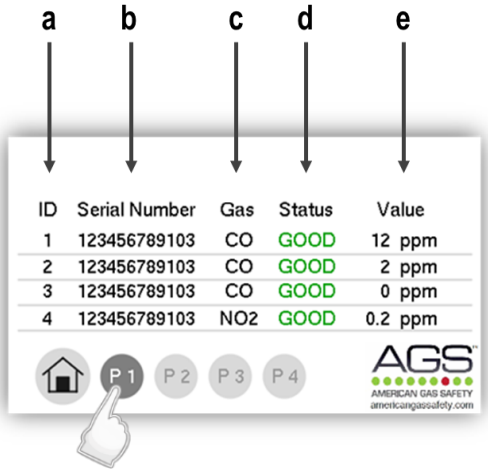
If the Parksafe system reaches Alarm condition – the control panel will need to be reset when the gas levels detected return to a safe concentration.
Check the detector information pages to identify where gas has been detected and if levels are returning to a safe condition before resetting the system.

Accessing Detector Information

To access detector status information screens - Press the 'Gas Detection' button on screen during any system condition.

Switch between pages by touching the relevant page button.
Each page can display up to 4 detectors as follows:

a. **ID**
The detector identification number (configured via dip switches on the detector circuit board).
b. **Serial Number**
The unique serial number for that sensor.
c. **Gas**
The target gas that detector is monitoring.
d. **Status**
The status of gas levels, errors and messages.
e. **Value**
The concentration value of gas being detected.



To return to the main screen, press the HOME button on screen.

Detector Status

GOOD	○	*Gas levels are safe / No error conditions.*
PRE ALARM	○	*Gas detected has reached pre-alarm levels.*
ALARM	○	*Gas detected has reached alarm levels.*
FAULT	○	*Gas sensing module issue. Contact your supplier immediately.*
END OF LIFE	○	*The gas sensing element has reached the end of its expected lifecycle.*
SERVICE	○	*Gas sensing element requires periodic bump test/ service.*
-- X --	○	*Detector signal lost, not installed or not configured correctly.*

Gas Alarm Levels

Gas	GOOD	PRE-ALARM	ALARM
Carbon Monoxide (CO)	*0 - 25 ppm*	*25 -100 ppm*	*+ 100 ppm*
Nitrogen Dioxide (NO_2)	*0 - 0.7 ppm*	*0.7 - 2 ppm*	*+ 2 ppm*

For more information refer to your Parksafe detector manual.

EOL or Service Required

This message/status will appear on the screen and indicates that a Parksafe detector has reached either its expected operational lifecycle or that the detector requires its periodic service check.
Press the Gas detector button on screen to identify the detector and its status.

No gas levels will be displayed for that detector during this time.

End of Life (EOL).
The expected operational life of a sensor will depend on the type of gas your detector is targeting and may vary depending on environmental conditions.

When the detector displays the 'End of Life' message contact your supplier immediately.

Service.
It is important to maintain the gas sensing elements of gas detectors for optimum performance, protection and security of the system.

When the detector displays the 'SERVICE' message contact your supplier immediately.

Parksafe detectors will still operate as intended but its sensitivity can be inhibited by external factors such as, dust; humidity; temperature fluctuations; cleaning products; contaminants or sensor drift (ageing). All can cause a decline in sensitivity and eventual failure.
It is recommended that Parksafe detectors are inspected and serviced at least annually from the date of installation for optimum performance and protection.

Contact your supplier for more information.

General Maintenance

- ✓ DO carefully remove any accumulated dust from outer enclosures once a month.

- × NEVER use detergents or solvents to clean your devices – this may permenantly or temporarily damage the gas sensing elements.
- × NEVER spray lighter gas, paint or other aerosols near your devices.
- × NEVER paint devices. Paint will seal vents and may cause interference.

Avoid exposure of high concentrations of alcohol found in many products, this can damage, deteriorate or affect the gas sensing elements. For more information refer to your Parksafe gas detector manual.

Bump Testing

What is Bump Testing?

Bump testing is a term used for checking a gas detector is functioning correctly by exposing it to the target gas. A known concentration of the target gas is applied to the device to trigger an alarm condition and ascertain the detector is working safely.

Why is it Important?

A detector may visually appear in good order, but its sensitivity can be inhibited by external factors such as, dust; humidity; temperature fluctuations; cleaning products; contaminants or sensor drift (ageing). All can cause a decline in sensitivity and eventual failure.
The aim of the bump test is to make sure a gas detector is working at its optimum by briefly exposing the unit to a known concentration of the target gas. The reading (if displayed) is compared to the actual content of gas present, as stated on the test gas cylinder and if the detector goes into alarm within an acceptable range of the actual concentration, usually within 10%, then it is working safely.
If the bump test results are not within the acceptable range, the gas detector must not be used until a full calibration has been conducted.

Bump testing has a number of benefits for the end user:

- Peace of mind that the system does actually detect the gas in question.
- Allows the site to practice safe operations in a similar manner to the fire system.
- Early indication of any issues.

How Often?

Regular bump tests are important to make sure the detector is able to detect a release of gas as early as possible. A bump test usually takes seconds (gas type dependant) and is often completed alongside a scheduled fire alarm test, however the frequency should be determined following a risk assessment by the end user.
Current standards recommend that for new installations - it may be prudent to carry out a bump test frequently (perhaps weekly), following a successful initial period and as confidence grows in the installation concerned, the frequency could be reduced.

Remember, bump testing does not remove the need to have gas detectors inspected, calibrated and serviced periodically by a trained engineer. You should not attempt this yourself and should employ the services of a specialist company.

For more information on this, contact us.

⚠ IMPORTANT WARNING STATEMENTS

Please take the time to thoroughly read this user's guide which should be retained for future reference.

It is recommended that this device be commissioned upon installation and serviced at least annually.

Do not apply lighter gas or other aerosols to detectors – this will cause extreme damage to the gas sensing elements.

High concentrations of alcohol found in many products may damage, deteriorate or affect the gas sensing elements of the detectors – Avoid exposure near your devices.

This device is designed to detect the gas displayed on screen and in the designated zone area from any source of combustion or dangerous level. It is NOT designed to detect smoke, fire or other gases and should NOT be used as such.

This device provides early warning of the presence of gas, usually before a healthy adult would experience symptoms. This early warning is possible provided your alarm is located, installed and maintained as described in this guide.

Never ignore your device when in alarm. Actuation of your alarm indicates the presence of an error or significant issue that requires immediate attention.

This device requires a continual supply of electrical power – it will not work without power.

This device should not be used to substitute proper installation, use and/or maintenance of fuel burning appliances including appropriate ventilation and exhaust systems.

This device does not prevent dangerous gasses from occurring or accumulating.

This unit may not fully safeguard individuals with specific medical conditions. If in doubt, consult a doctor/physician.

Your product should reach you in perfect condition, if you suspect it is damaged, contact your supplier.

Manufacturer's Warranty

Warranty coverage:

The manufacturer warrants to the original consumer purchaser, that this product will be free of defects in material and workmanship for a period of three (3) years from date of purchase. The manufacturer's liability hereunder is limited to replacement of the product with repaired product at the discretion of the manufacture. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material or workmanship. This warranty extends to the original consumer purchaser of the product only.

Warranty disclaimers:

Any implied warranties arising out of this sale, including but not limited to the implied warranties of description, merchantability and intended operational purpose, are limited in duration to the above warranty period. In no event shall the manufacturer be liable for loss of use of this product or for any indirect, special, incidental or consequential damages, or costs, or expenses incurred by the consumer or any other user of this product, whether due to a breach of contract, negligence, strict liability in tort or otherwise. The manufacturer shall have no liability for any personal injury, property damage or any special, incidental, contingent or consequential damage of any kind resulting from gas leakage, fire or explosion. This warranty does not affect your statutory rights.

Warranty Performance:

During the above warranty period, your product will be replaced with a comparable product if the defective product is returned together with proof of purchase date. The replacement product will be in warranty for the remainder of the original warranty period or for six months – whichever is the greatest.

Information on waste disposal for consumers of electrical & electronic equipment.

When this product has reached the end of its life it must be treated as Waste Electrical & Electronics Equipment (WEEE).

Any WEEE marked products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used. Please contact your supplier or local authority for details of recycling schemes in your area.

Notes

BUMP TEST / SERVICE RECORD

Date	Device ID	Gas	Batch	Pass	Sign

Date	Device ID	Gas	Batch	Pass	Sign

INSTALLATION DETAILS

Please pass this manual to the system owner / user.

Date of Installation:	
Installation Location:	
Organisation:	
Stamp/ Signature of the installer:	

CONTACT:

AGS Head Office
Tel: (727) 608-4375
Fax: (727) 538-4237
info@americangassafety.com