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THAT THE INSTALLATION
GUIDE IS READ AND FULLY
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Four channel Gas Detection system

System description

The AGDS-4 is a gas detection system designed to monitor the atmosphere for target gases. The system comprises of a mains powered panel capable of operating up to four sensors, either combustible or Carbon Monoxide gas or a combination of both. The sensors are pre-calibrated by Banico such that they only require to be connected to the panel and functionally tested.

In the event of a high alarm from one of the sensors the system will isolate the gas supply by closing a connected electric control valve. Emergency stop buttons and Thermal Links can be fitted and a fire alarm can close the gas valve when connected to the panel.

Emergency Stop

LED indications:

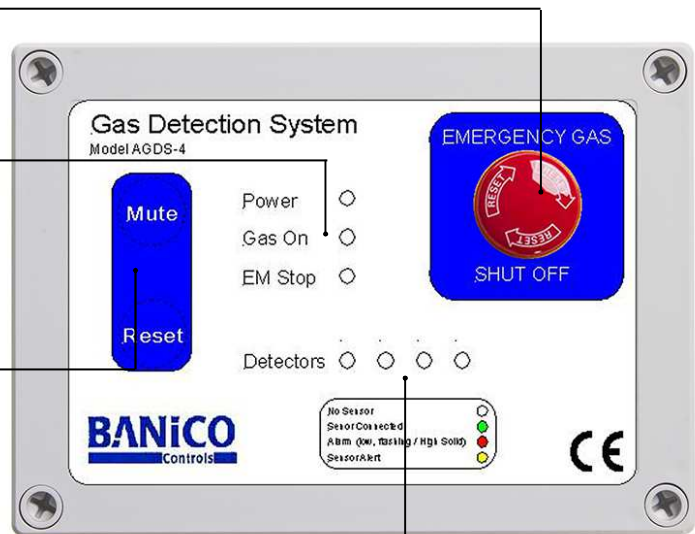
Power On - green
Gas On - red
EM STOP - yellow

Panel Buttons:

Mute button
Reset button
Press and hold reset button (2's) when power is first applied to enable gas.

Detector LED's

No Detector	- off
Detector Powered	- green (flashing during warm up)
Low Alarm	- flashing red (every second)
High Alarm	- flashing red (every 1/2 second)
High Alarm & Gas isolated	- permanent red
Sensor Alert	- yellow



Low Voltage Gas Detectors

The maximum cable(4 core) length between a sensor and the control panel should not exceed 100 metres, If the distance between the main panel and the detectors is greater than 20meters 1mm cable should be used on the 12v, 0v terminals..

Combustible detectors are pre calibrated at 5% LEL (Pre alarm) and 10% LEL for the High alarm.
Carbon Monoxide detectors are pre calibrated at 80ppm (pre alarm) and 100ppm for high alarm.

Each detector has a rotary address selector switch (0-F) you must use address's 1-4 only. Once connected and addressed you are required to press the "learn Det's" button (12). Once pressed the corresponding detector LED's on the main panel will light green.

Each sensor unit has an LED which shows green when power is applied.

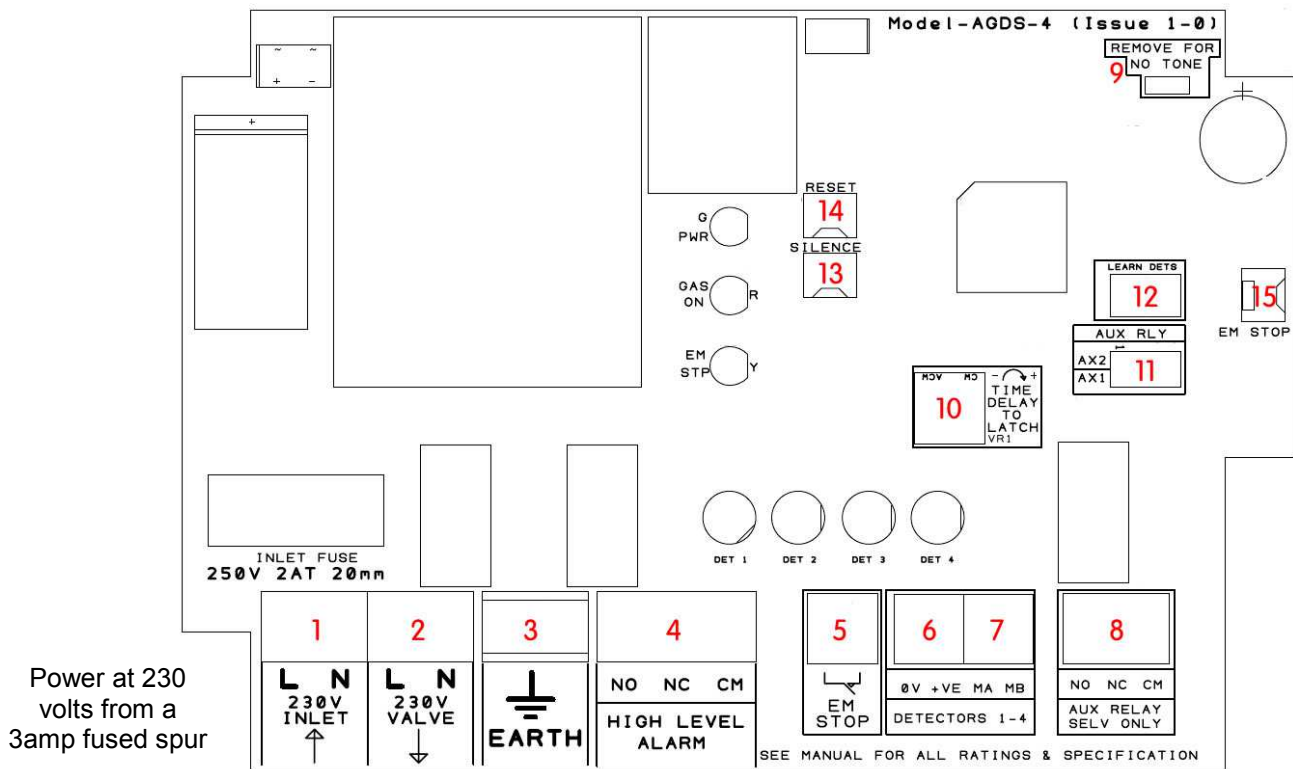
Note: There is a warm up period after initial power up of approximately 90 seconds. During this time the green LED will flash once per second and the output signal will be inhibited. This is to prevent spurious alarms. After the warm up period and on application of gas, the red LED will light when a high gas alarm level is reached.

Sensor Alert state (yellow LED): indicates that a previously learnt detector is no longer being recognised, normally due to a change to the detectors address or an issue with the wiring.

When first powered or after a loss of power press and hold the reset button for 2 seconds to start the system and open the gas valve.

AGDS-4

Main features



Connections to panel: marked on board

1. Live & Neutral 230 volts supply from 3amp switched fuse spur
2. 230 volts out to gas solenoid valve (5amp relay)
3. Earth connection terminals
4. High Alarm BMS relay (potential free contact, mains rated, max load 5amp)
5. Remote emergency stop buttons SELV, multiple buttons connect in series (requires a N/C circuit)
6. Power connections for detectors, Methane, LPG, CO.
7. Comms connections for detectors, Methane, LPG, CO.
8. Aux Relay, (potential free contact, SELV Only) - **see 11 for settings** (non-latching)
9. Jumper link to disable audible alarm sounder.
10. High alarm time delay function - Controls the length of time between a High alarm and the closing of the gas valve
11. Aux Rly Switch - Setting controls the Aux Relay switching conditions

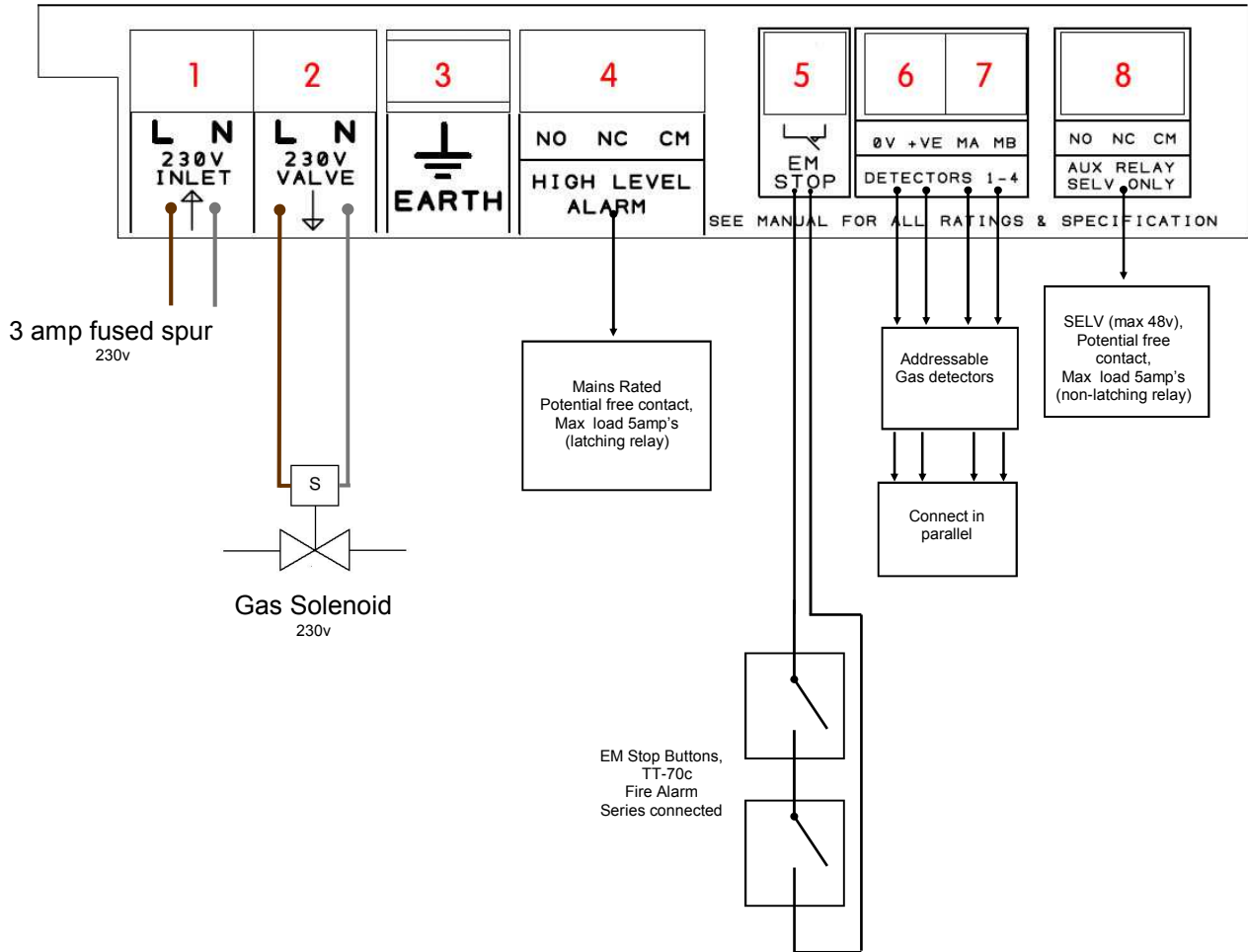
Aux1	Aux2		State
OFF	OFF	=	Low Alarm
OFF	ON	=	Detector Alert
ON	OFF	=	Em-Stop
ON	ON	=	Gas On

12. Learn Detectors - Press after connecting & addressing Banico gas sensors (detector address's 1 - 4 only)
13. Front Panel button connection - Mute
14. Front Panel button connection - Reset
15. Front Panel button connection - Emergency Stop

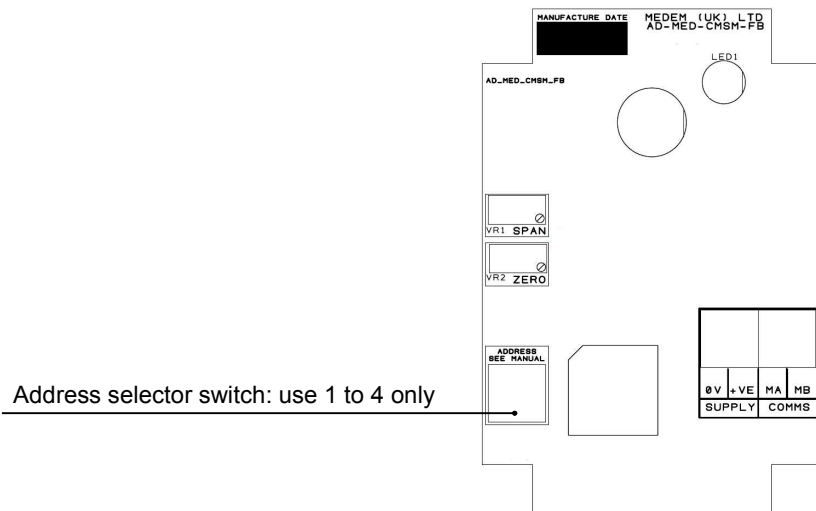
AGDS-4

Schematic

Earth Connections not shown



Example Gas Detector



Detector Location

Detector location will vary dependant on the individual characteristics of the target gas that is being monitored for. The descriptions below describe the position for each detector after considering these characteristics.

Natural Gas

Natural gas detectors should be mounted at high level on a wall approximately 150mm from the ceiling height and avoiding corners and potential dead air areas.

Natural gas detectors should not be mounted below the height of the top of a doorway for example. This is because as the gas is slightly lighter than air it will rise filling the room from the ceiling down and will spill through the top of a door opening into the next room. If the detectors are mounted below this height then it will take longer the gas to reach the detector.

LPG

LPG gas is heavier than air so detectors need to be mounted at low level 100mm from the floor, consideration should be given to any potential mopping or wet floor height.

Carbon Monoxide

Carbon Monoxide is similarly weighted to air so detectors should be mounted between 1 to 2 meters from the floor (within the breathing zone).

Detector Testing

Any installed gas detector can be tested by allowing a small amount of the target gas onto the detector head until a change of state is registered on the control panel.

If the level of gas applied is of the set low alarm level, the LED on the detector will change from a solid green to a flashing red. An LED indicating a low level alarm detection combined with an audible alarm on the panel will begin.

If the level of gas drops below the set low alarm level the detector LED will return to a solid green and the panels audible alarm and LED will clear.

Should an emergency shut-off valve be connected to the panel this will remain open during a low alarm level detection.

If the level of gas applied is of the high alarm level or above, the LED on the detector will change from a solid green to a solid red. An LED indicating a high level alarm detected combined with an audible alarm on the panel will begin.

Should an emergency shut-off valve be connected to the panel this will automatically close.

Once the level of gas drops below the high alarm level the audible alarm will continue and the high alarm LED will remain.

The valve cannot be reinstated until the gases have been cleared and the control panel reset.

AGDS-4

If you have any queries about any of our products and services or would like some more information, then feel free to get in touch with us on the details below.

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