

Typical general arrangement of internal boiler room with complete Duomo gas safety kit

Principle of operation

The GS300M will automatically turn off the electrical supply to the gas valve and sound the remote alarm should any of the following conditions arise.

1. Carbon monoxide level increases to 50ppm for 1 hour, 100ppm for 10 minutes or 300 ppm instantaneously (Time Weighted Average).

2. Natural gas level rises to 20 % L.E.L.

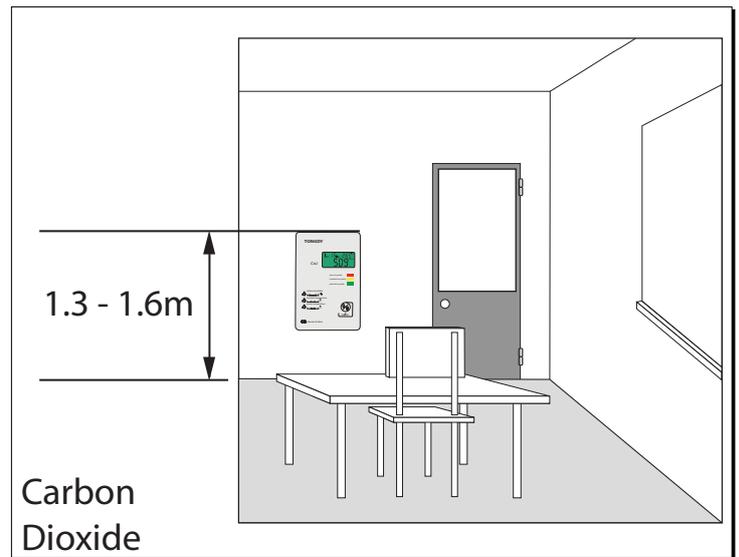
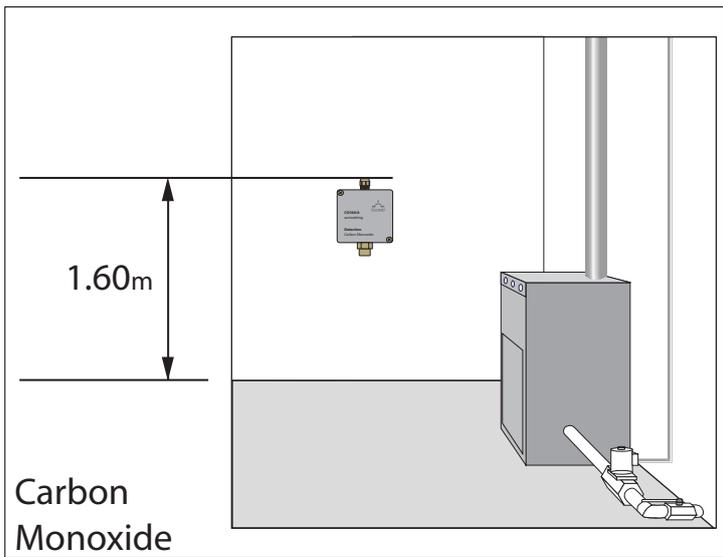
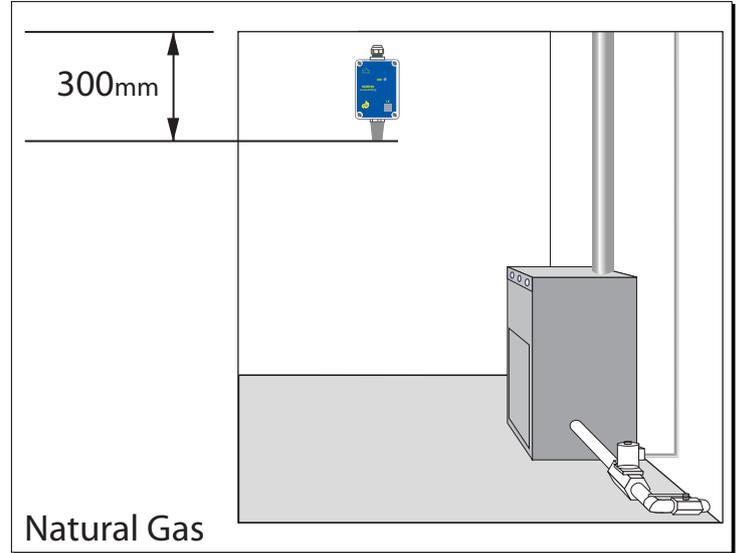
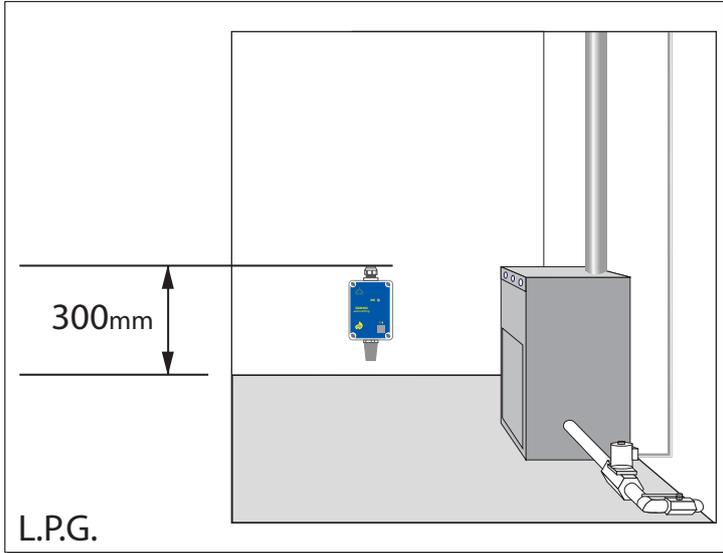
and/or

3. Boiler room temperature exceeds 72 degrees centigrade.

The system can only be reset and gas re-instated when the cause of the problem has been resolved.

Key

1. GS300M Gas Detector (3 zone controller)
2. CO100Ar Sensor (Carbon Monoxide)
3. SGM595 Sensor (Methane)
4. DFL10 Electro-Thermal Fusible Link (72°C)
5. AF126 Audible Flashing Alarm
6. Solenoid operated isolation valve
7. KOB21 Emergency Stop push button
8. L.P.G. Sensor (if fitted)



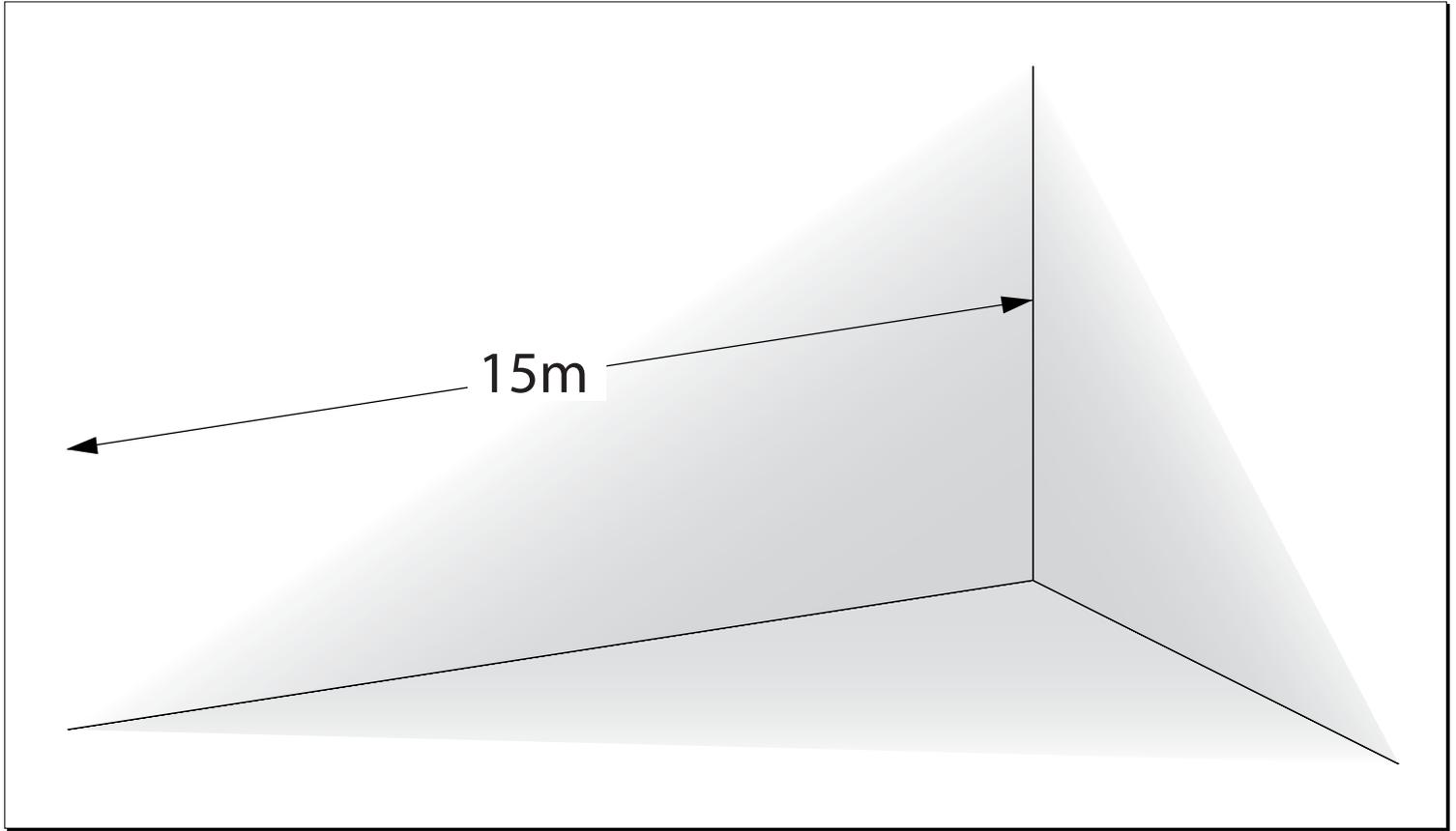
Different gases have different specific weights and so will naturally sit at different levels when mixed with air. The diagrams above show the best position to locate a sensor based on the gas it is detecting.

L.P.G. is a heavy gas so the SGM595 should be situated 300mm from the floor. Natural gas is a lighter gas so the SGM595 should be situated 300mm from the ceiling. Carbon monoxide has a similar weight to air so any carbon monoxide sensor should be situated at 1.6m from the floor.

Carbon dioxide is also a similar weight to air so sensors should be situated at 1.3 - 1.6m from the floor in a classroom or office environment. In a kitchen it "should be fitted horizontally between 1 and 3m from the cooking areas and a safe height above head level; that is 2.5m above floor level". (*IGEM/UP/11 Edition 2*)



How many sensors do I need?



The number of sensors that you need to monitor any given area will depend upon several factors. However, as a basic rule of thumb, you can use the following calculation;

$$\text{Length of longest wall in the room (metres) / 6 = No. of sensors required}$$

So, using the example above;

$$15 / 6 = 2.5$$

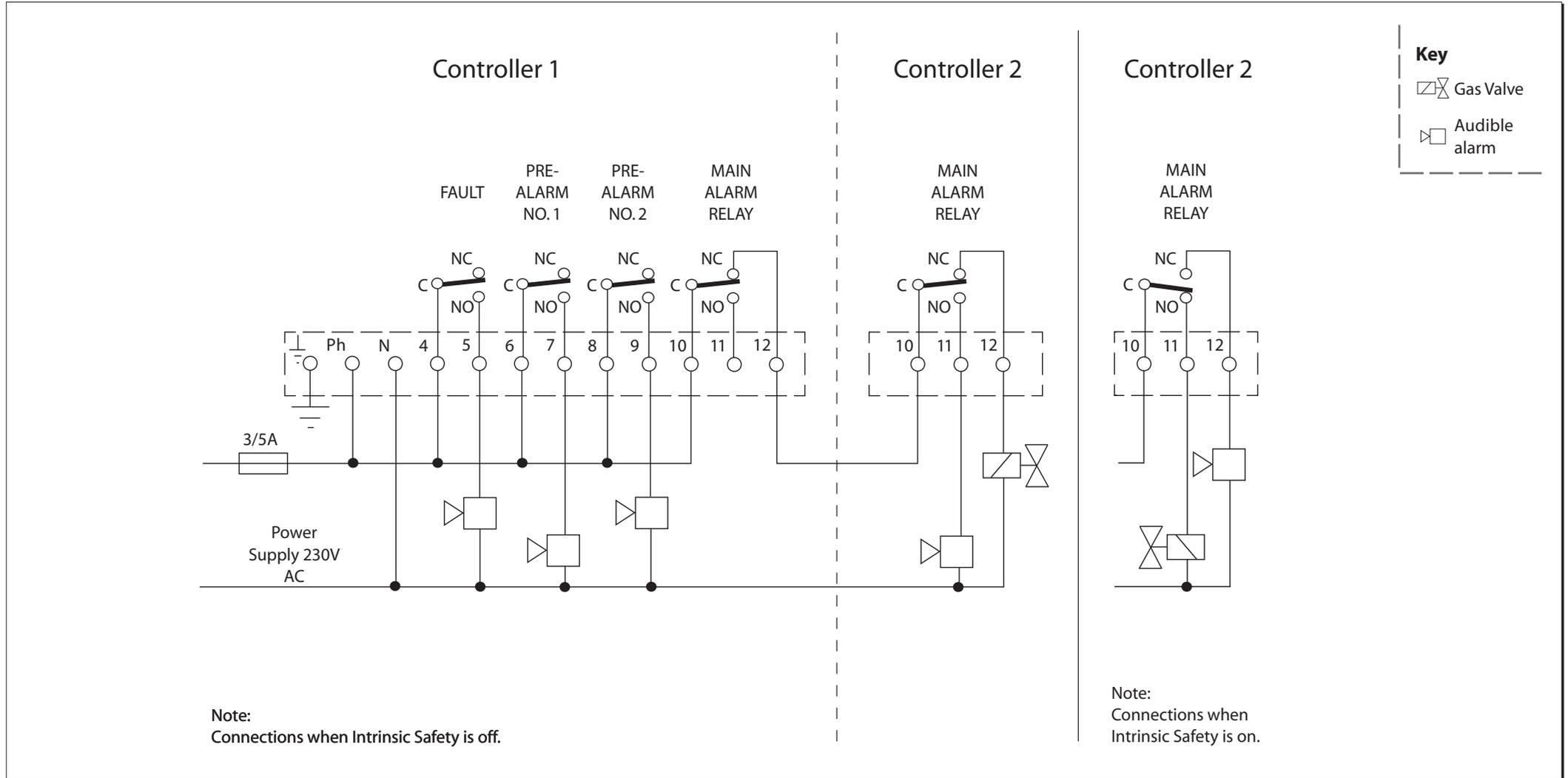
Therefore we would recommend using 3 sensors to cover the area.

Please be aware however that this a guideline only. Other factors such as the height of the room, the number of appliances, the amount of pipework etc. will also affect the number of sensors required.

If you are in any doubt, please don't hesitate to contact us on 01905 797989.



How to Link Several Controllers



The wiring diagram above explains how to link together several controllers. The main alarm relay on the first controller is used to operate the main alarm relay on a subsequent controller. When in alarm, the first controller's main alarm relay switches and causes the next main alarm to switch. This second switch activated the audible alarm and shuts off power to the gas valve, isolating the supply.