



Installation instructions v 1.2

March 2009

MSC-101

Intelligas multi services controller

With automatic ventilation control & noxious gas level indication - BB101 interface

Please read these instructions carefully damage to the unit or incorrect operation may occur if these instructions are not strictly followed, should you have any queries please do not hesitate to contact our 24hr technical line

0845 004 2496 or 07952269791

Thank you for choosing intelligas

Pg. Contents.

- 1) Siting the panel, general overview and types of recommended wiring systems.
- 2) Initial set up before power up (4 way switch setup).
- 3) Pre set parameters and actions.
- 4) Gas schematic.
- 5) Gas, water & electric services control wiring schematic.
- 6) Switch function control (8 way switch) .
- 7) Using the BB101 / noxious gas interface. Switched or 0-10v
- 8) BMS reporting
- 9) Remote front fascia option

Siting the panel

The panel should be sited away from sources of heat and mechanical damage.

Use the fixing holes marked on the rear of the enclosure, if necessary remove the PCB from its mountings and carefully set aside whilst fixing the enclosure. Ensure no screw heads protrude enough to “short out” the rear of the PCB.

Site the main panel away from sources of extreme heat. Ensure its in a position where mechanical damage is unlikely and where maintenance access is possible. Apply this to both panels if the remote control option is being used.

General Overview

The system is based around a microprocessor which utilizes powerful software providing a complete and adaptable solution for the laboratory environment.

Terminals are provided for the connection of gas supply valve, distribution board contactor and water valves giving the technician or teacher complete control of the services required to run a lab.

In addition to these terminals there are interlocks for fire and emergency stop systems. Also there are auxiliary interlocks for the connection of gas sniffers etc.

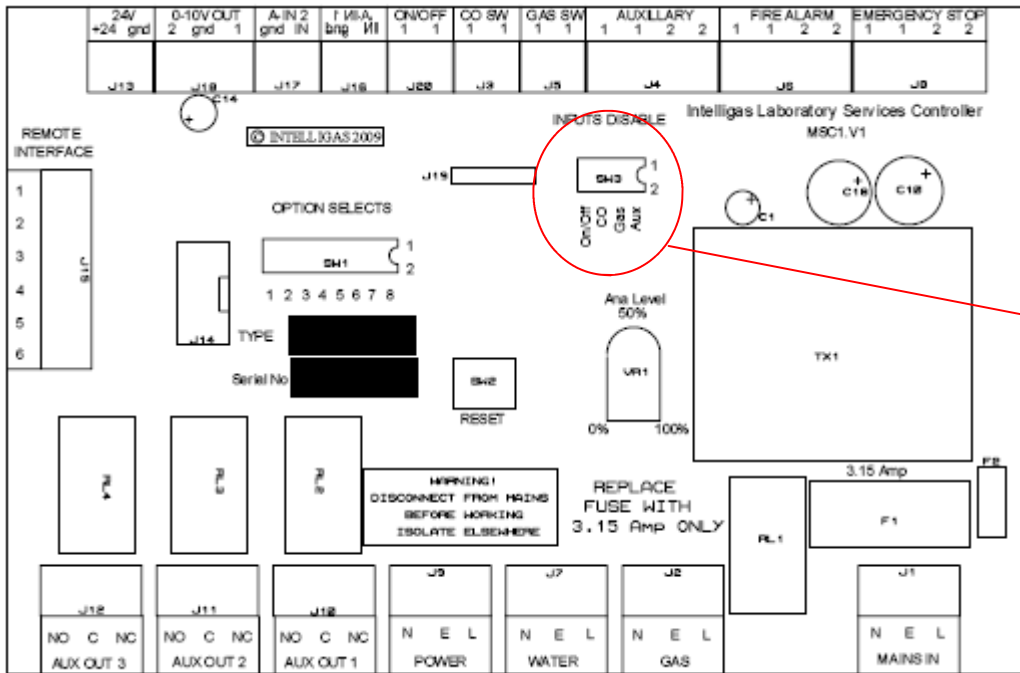
BMS control interface is provided by way of a normally closed (open when off) pair of terminals which can be connected to either a time clock or BMS terminals

Wiring systems

We recommend the use of wiring such as FP200 or T&E for the mains installation, that being supply to the unit, and the supplies to the gas valve, electrical contactor and water valve.

All other wiring from the unit can be low voltage cabling please ensure category separation as per the wiring regulations.

2) Initial set up before power up (4 way switch setup).



These switches should be used to initially set up the external control inputs, if the remote BMS on/off isn't to be used then it can be overridden by pushing the switch up (on), this can be repeated with the CO2 switched input, gas pressure switch and auxiliary interlocks, interlocks such as the remote emergency stop and fire alarm inputs should be physically linked out if not being used

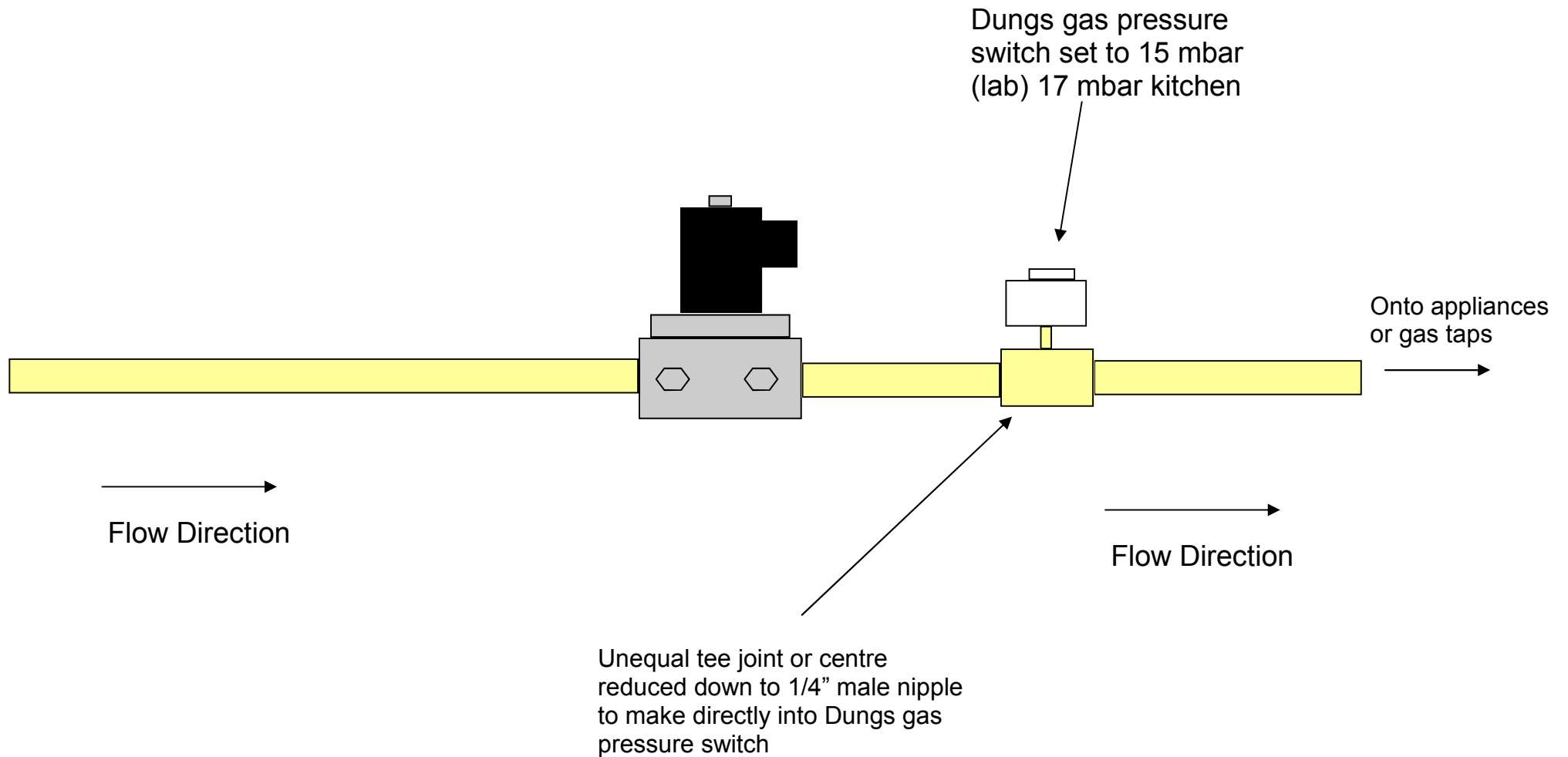
ON / OFF Switch, using the terminals marked "on/off" on the top of the controller PCB the unit can be remotely switched off using a time clock or BMS interface. This is useful in schools where services must be isolated at the end of a period or day to ensure building and occupants safety. The power light will flash green when the unit is in remote off mode.

CO switch, this switch isolates the switched input for the CO2 detector, so if you are using a 0-10v detector this input should be disabled by pushing the switch upwards.

GAS Switch, this input is used to connect the gas pressure switch for the proving side of the gas safety system. If the gas being used is inert or doesn't require pressure proving then push the switch upwards to disable the proving switch inputs.

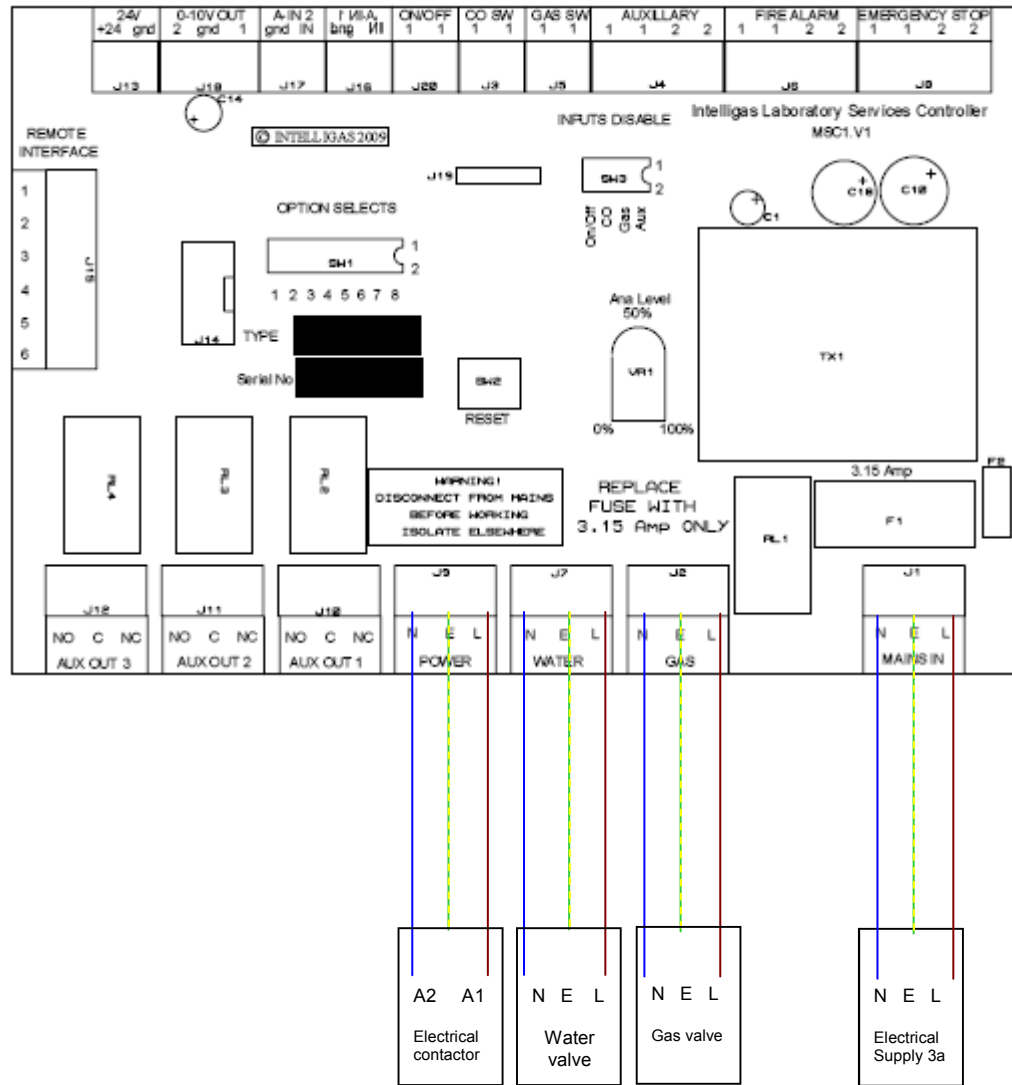
AUX Switch, if the auxiliary interlocks aren't being used (refer to the switch function control page for details of this interlock) then pushing this switch up disables them.

Intelligas gas proving system mechanical layout (lab & kitchen)



To comply with gas regulations manual isolation points, purge points and test nipples may be required. This drawing is for information only and the necessity of the above items should be checked to ensure compliance with the current regulations.

Gas Water & Electric services control wiring schematic



Switch function control (8 way switch)

The system can be set up and commissioned using the switch positions on the 8 way switch selector on the main PCB as opposite.

Typical examples are;

Using switched co2 input and buzzer required and where a rise in co2 should only be brought to the attention of the responsible person, high co2 should also be reported to the BMS. A gas sensor is connected to the auxiliary inputs.

SW1 on
SW2 off
SW3 on
SW4 off
SW5 on
SW6 off
SW7 off

As you can see the above switch layout will provide a system that will be completely suited to the situation in which it is placed, other typical examples;

Using 0—10 volt co2 sensor and having fan speed controllers connected to the 0-10v output terminals high co2 must be warned by stopping the services to ensure an action is taken and the BMS needs to know the exact position of the gas isolation valve and the co2 level

SW1 off
SW2 on
SW3 on
SW4 off
SW5 on
SW6 off
SW7 on

Should you have any concerns as to the settings you require please do not hesitate to contact technical support

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CO2 Signal selector

Sw 1 On CO2 input switched
Sw 1 Off CO2 input analogue 0-10v

CO2 Action

Sw 2 On CO2 stops services
Sw 2 Off CO2 LED & Buzzer only

CO2 Output

Sw 3 On Relay 4 signals high CO2
Sw 3 Off Relay 4 follows water valve position

Gas Proving Time

Sw 4 On Proving time 30 secs
Sw 4 Off Proving time 60 secs

Auxiliary interlock action

Sw 5 On System shuts down gas and electric
Sw 5 Off System indicator and buzzer only

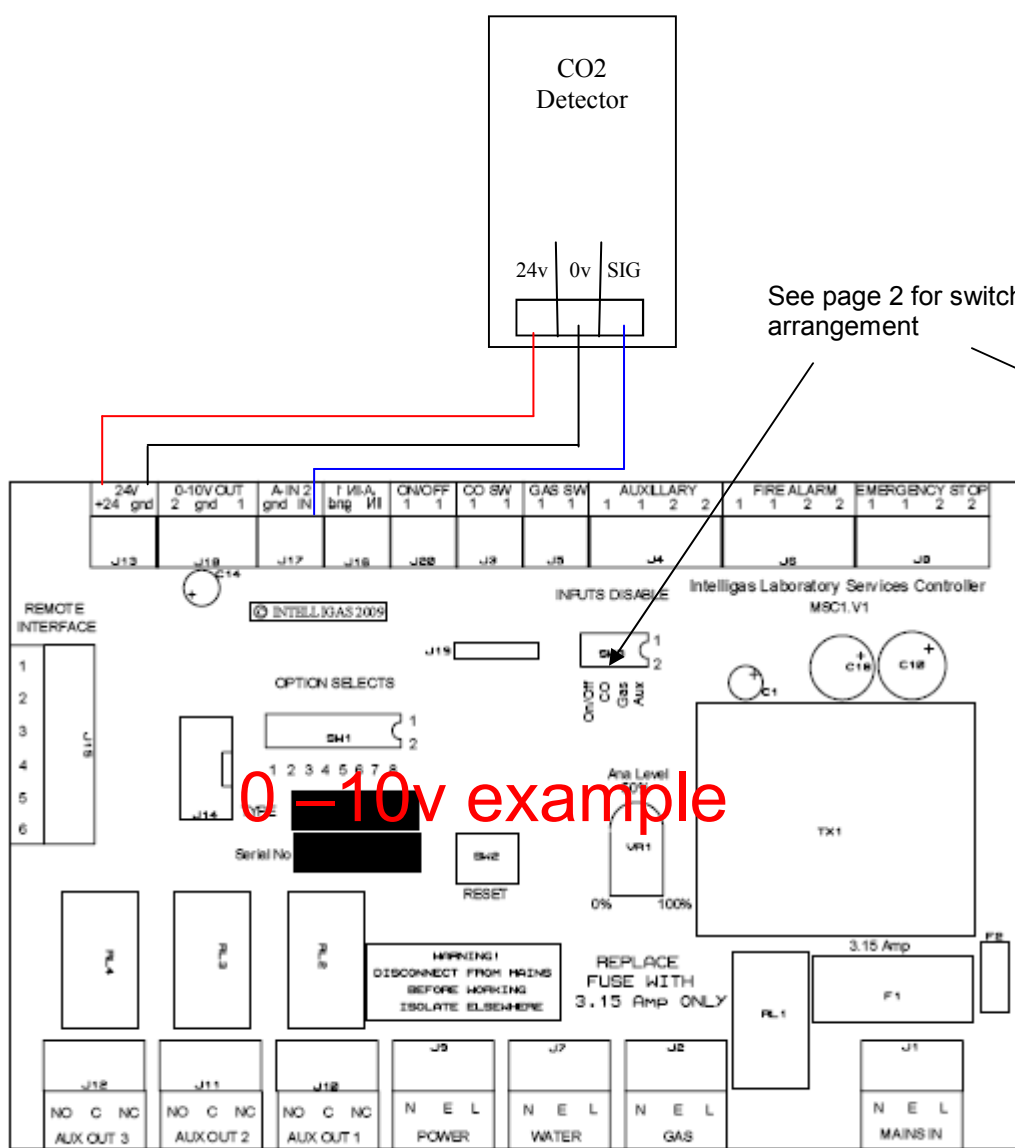
Action on failed gas prove

Sw 6 On Red LED only
Sw 6 Off LED and buzzer

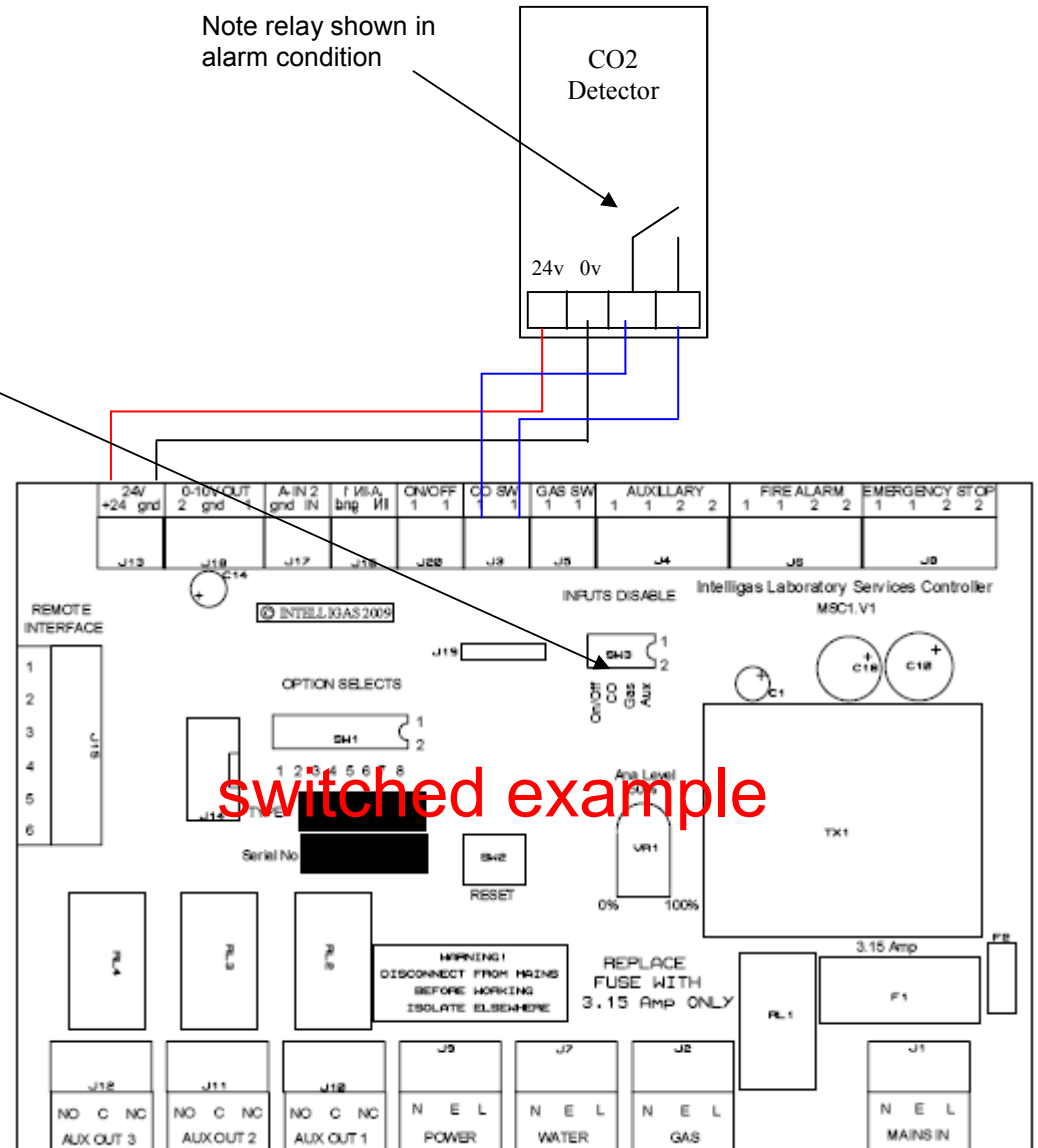
Gas valve position indicator

Sw 7 On relay 2 follows gas valve exactly
Sw 7 Off relay 2 only changes position on successful prove / off

7) Using BB101 0-10v or switched Interface



See page 2 for switch arrangement

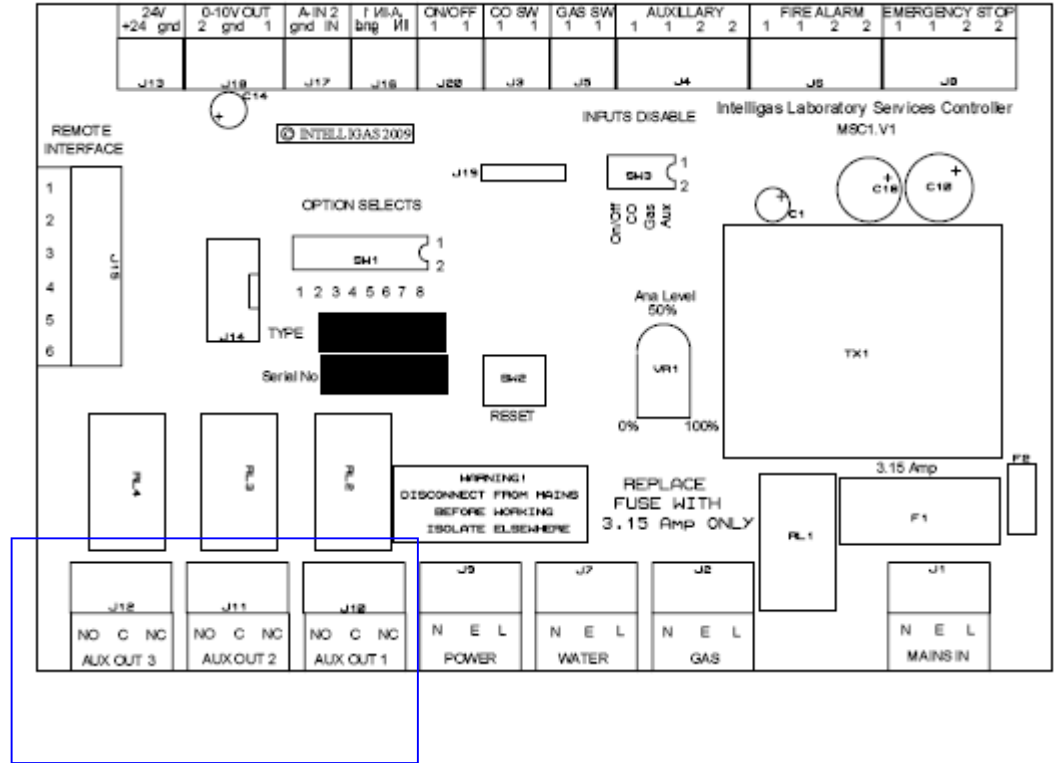


Note relay shown in alarm condition

Using the 0-10volt method gives more “commissionability” at the control panel, also a 0-10v output is given on the 0-10v out terminals “1” & “gnd” this can be fed into fan speed controllers to automatically ventilate a room in the case of the CO2 level creeping up.

The pot in the centre of the PCB marked “Ana level” should be used to determine the “alarm” point EG. If the sensor’s output is 0-10v over a 0-5000ppm scale and you want the alarm level to be set at 1000ppm then :- $10 / 5000 \times 1000 = 2\text{volts}$ or 20% of the 0-10v scale. The pot should then be set at 20%

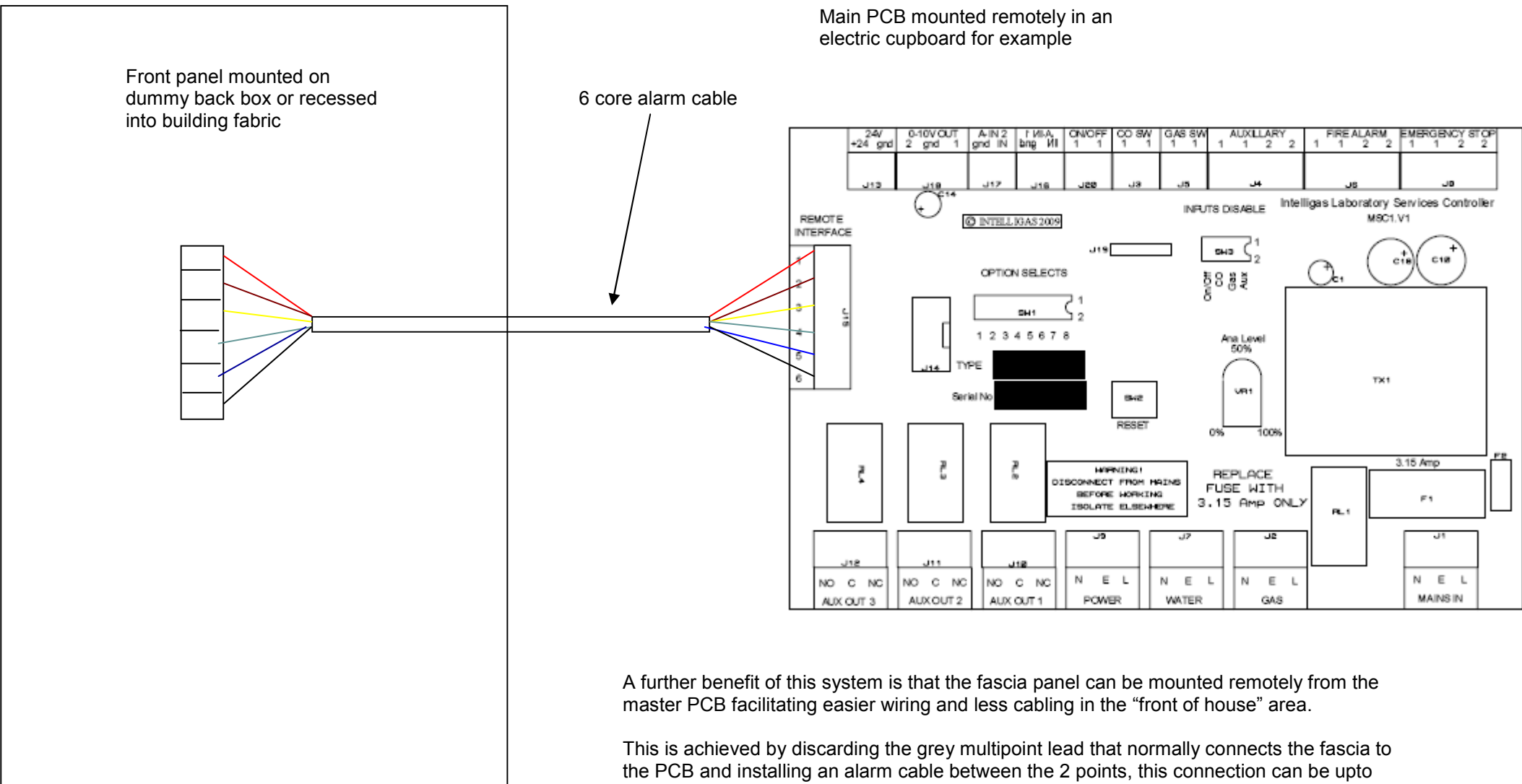
When using the switched method the unit will take whatever action has been set on the option switches when the CO interlock changes state from a closed circuit to an open circuit.



These relay outputs can be used to report back to a BMS or separate indicator set, the position or “state” of the services.

Note, relay 4 (left most relay) can be changed in the options switches to report high CO2 level detected.

9) Remote front fascia wiring



A further benefit of this system is that the fascia panel can be mounted remotely from the master PCB facilitating easier wiring and less cabling in the “front of house” area.

This is achieved by discarding the grey multipoint lead that normally connects the fascia to the PCB and installing an alarm cable between the 2 points, this connection can be upto 50 mtrs without causing any noticeable problems with key press response times.

This function is “plug & play”. The system will detect the change and operate as normal.