



# INTELLIGAS

Gas safety & control systems

## **KVM - SF**

**Short form engineers wiring diagram  
and functional explanation**

## **INSTALLATION GUIDE**

Intelligas takes every care in ensuring these products reach you in perfect working order. Each system is tested on dispatch and site induced damage **is** easily detectable.

Ensure the operation of this unit is explained fully to the kitchen staff.

**24 hour technical support line - 02381 290444**

**[intelligas.co.uk](http://intelligas.co.uk)**

## Introduction

Thank you for choosing an Intelligas product. Please follow these instructions to ensure a safe, functional and long-lasting installation.

**This information is important and should be read and understood before attempting installation.**

If you are unsure of the terminations and their design voltages or function then refer to this guide or our technical support line, you can call 02381 290444 or you can text 07952269791 and we'll get back to you as soon as we're available.

## Siting the panel

Choose a suitable mounting position for the control unit. Mount the unit away from sources of extreme heat. Ensure the panel is placed in a position where mechanical damage is unlikely and where it can be easily accessed for use and maintenance.

Fix the panel using the marked enclosure holes only. Take care not to damage the internal wiring or PCB of the unit when drilling.

Under no circumstances should wiring be routed behind the PCB of the control panel.

## Control panel supply

All our control panels (except the KVM-SF) should be supplied via a fused spur connection unit. The fuse should be changed to one that's rated at 5amps.

**KVM-SF ONLY** if the panel is supplying the fans directly from the PCB then it should be supplied via a 16amp single phase isolator. If the panel is controlling Inverters and only the output signals are being used then, as above, the panel should be supplied by a 5amp fused spur.

## Field wiring

All wiring from the supply and to the gas valve carries mains voltage (230v ac nominal). The current edition of the IEE Wiring Regulations should be strictly adhered to, wiring and connections should be made by a suitably qualified electrician or competent person.

The field wiring voltage to the interlock inputs is reduced to 24 volts, do not connect mains to the air pressure switch terminals, e-stop, analogue input/output 0-10v control, gas detector or fire alarm terminals.

Please follow the first fix wiring schedule set out below:

- 1) Main supply 2 core + E 1.5mm (as per regulatory requirements)
- 2) Gas valve 2 core + E 1.5mm (as per regulatory requirements)
- 3) Pressure switches 2 core + E 1.5mm (YY type cable)
- 4) Fire alarm interlock (if req) 2 core + E 1.5mm (FP type cable)
- 5) Emergency stops 2 core + E 1.5mm (YY type cable)
- 6) Gas detection equipment, If fitted, 3 core screened (CY type cable)
- 7) Gas pressure switch, if fitted, 2 core + E 1.0mm (YY type cable)
- 8) 0-10v signal wiring, if fitted, 2 core 1.0mm (CY type cable)

Where multiple supplies enter a control panel, perhaps in a current sensing interlock. It is preferable that each supply is on the same phase. If this can't be achieved, then additional warning labels should be fixed in a suitable location on the control panel.

### KVM SF Dip switch settings

On the fascia pcb there are 6 dip switches. Below is their function:

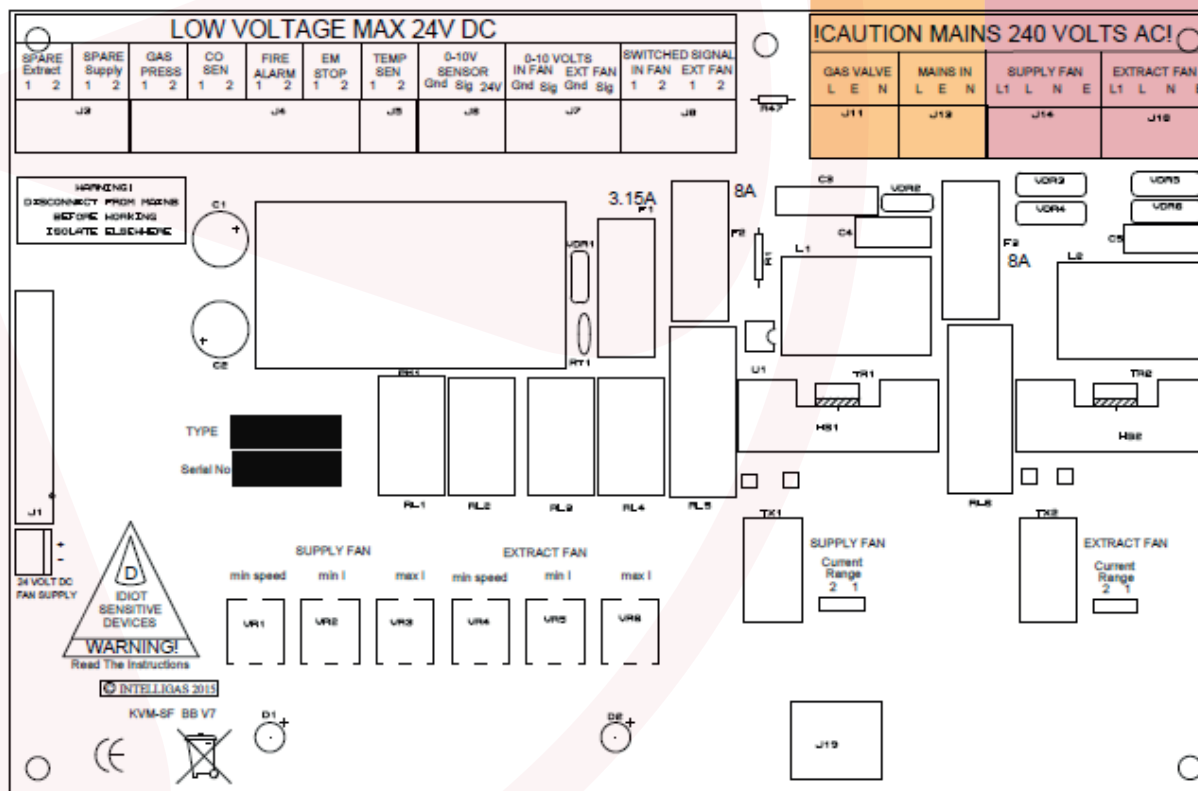
1. OFF (gas proving disabled) ON (gas proving enabled)
2. OFF (supply & extract fans used) ON (extract only)
3. OFF (CO2 detector not fitted) ON (CO2 detector fitted)
4. OFF (extractor sensed on spare input terminals) ON (extractor fan sensed on board current sensors)
5. OFF (supply sensed on spare input terminals) ON (supply fan sensed on board current sensors)
6. OFF (temp sensor fitted in kitchen space) OFF (temp sensor fitted in canopy)

*The advice given on these instruction pages, specifically to cable types and ratings may change depending on cable lengths and installation conditions. If you are not sure about any of the cable types or ratings then contact our technical support team.*

# Electrical supply set up when using internal single phase speed controllers.

Gas valve output & Mains supply to the panel. 1 x 16 amp single phase for 230v fan output or 3 amp if controlling invertors remotely.

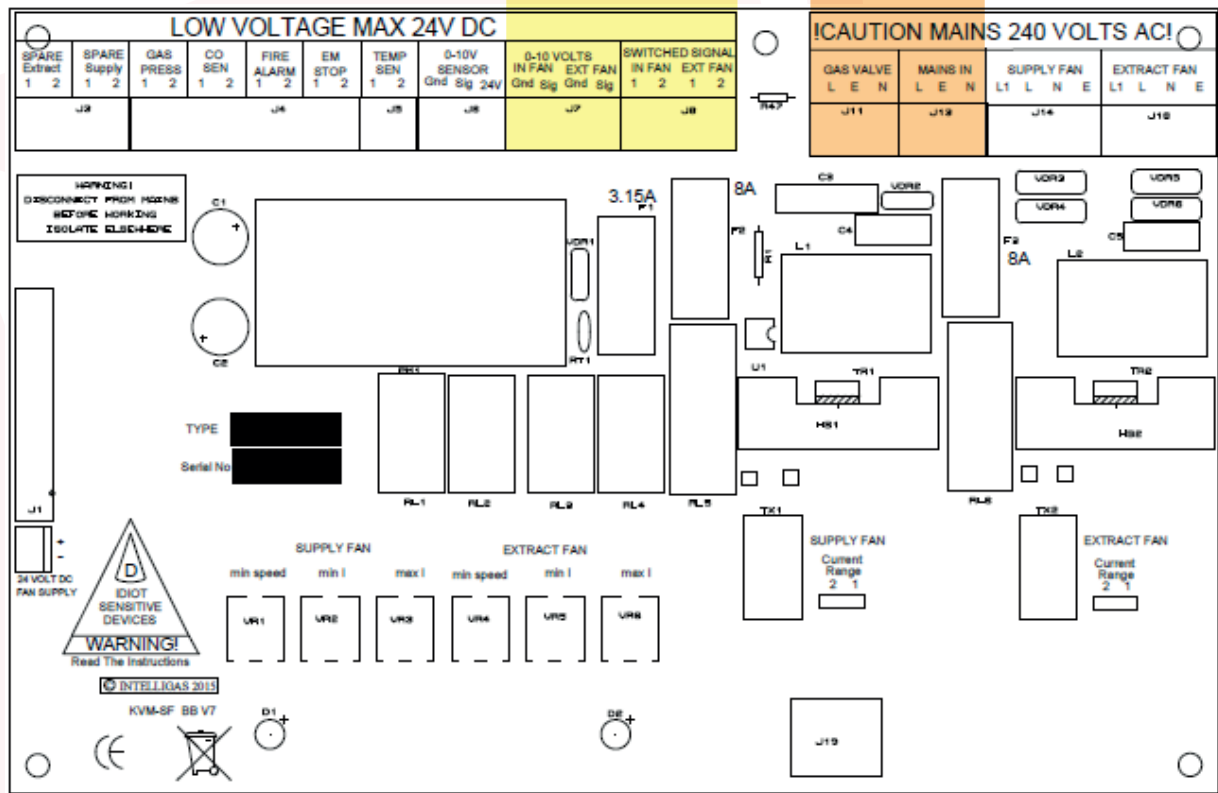
Single phase fan speed control for fans up to 8 amps.



# Electrical supply set up when using remote 3 phase invertors.

Relay outputs for supply and extract fan invertors enable signal. 0-10v speed reference for inverter speed control.

Gas valve output & Mains supply to the panel. 1 x 3 amp single phase 230v.



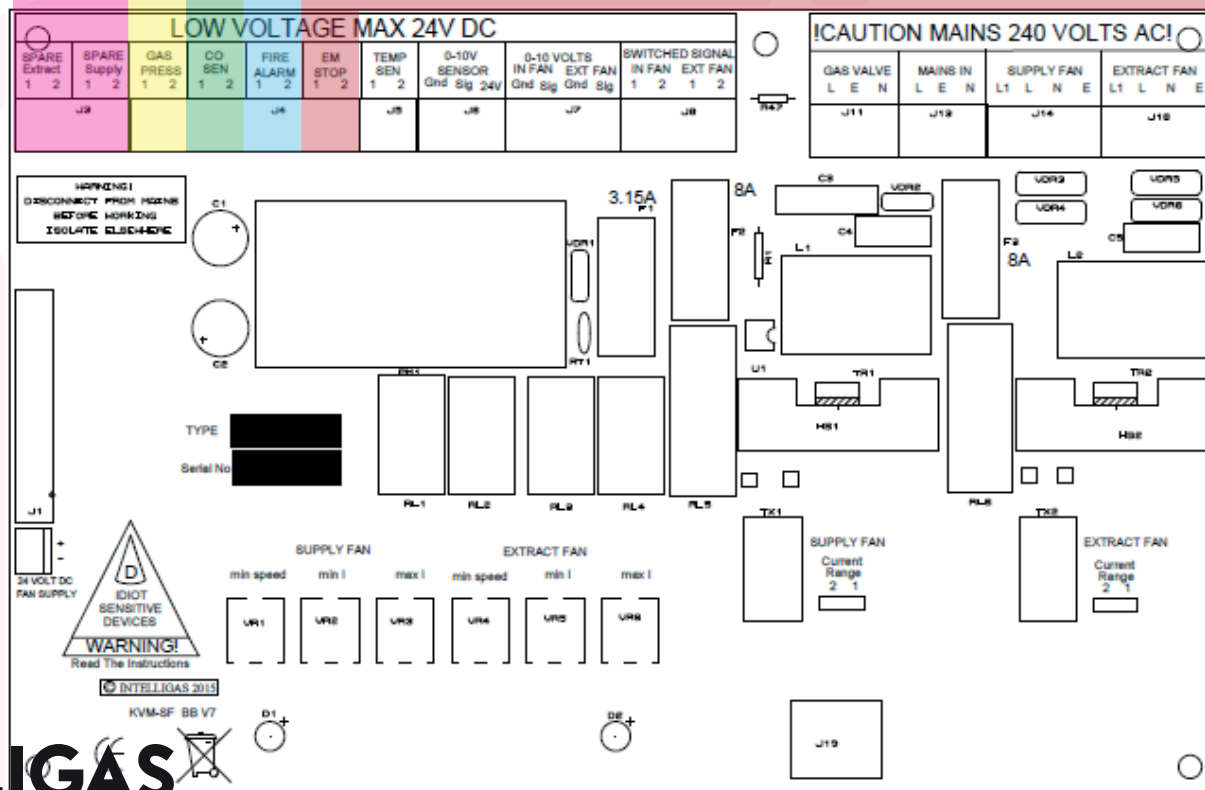
Connect Air differential pressure switches here (supply and extract fans) when their use has been selected on the dip switches on the fascia control board. (see dipswitch settings).

If gas proving is to be used then connect the Dungs gas pressure switch here. At the switch, use terminal numbers 2 & 3. Link these terminal if gas proving is not to be used.

A switched CO detector can be connected here. When the detectors relay breaks these terminals the system will send all fans to full speed regardless of whether its in on or in standby mode.

Fire alarm interlock is normally closed. This circuit should be broken to put the system into fire mode. This shuts off the gas and supply fans. Extract fan action is programmable depending on authority requirements. Link these terminals if not being used.

Connect an extra estop button or buttons here, create a closed loop if more than one button is installed, link if not required.



**INTELLIGAS**

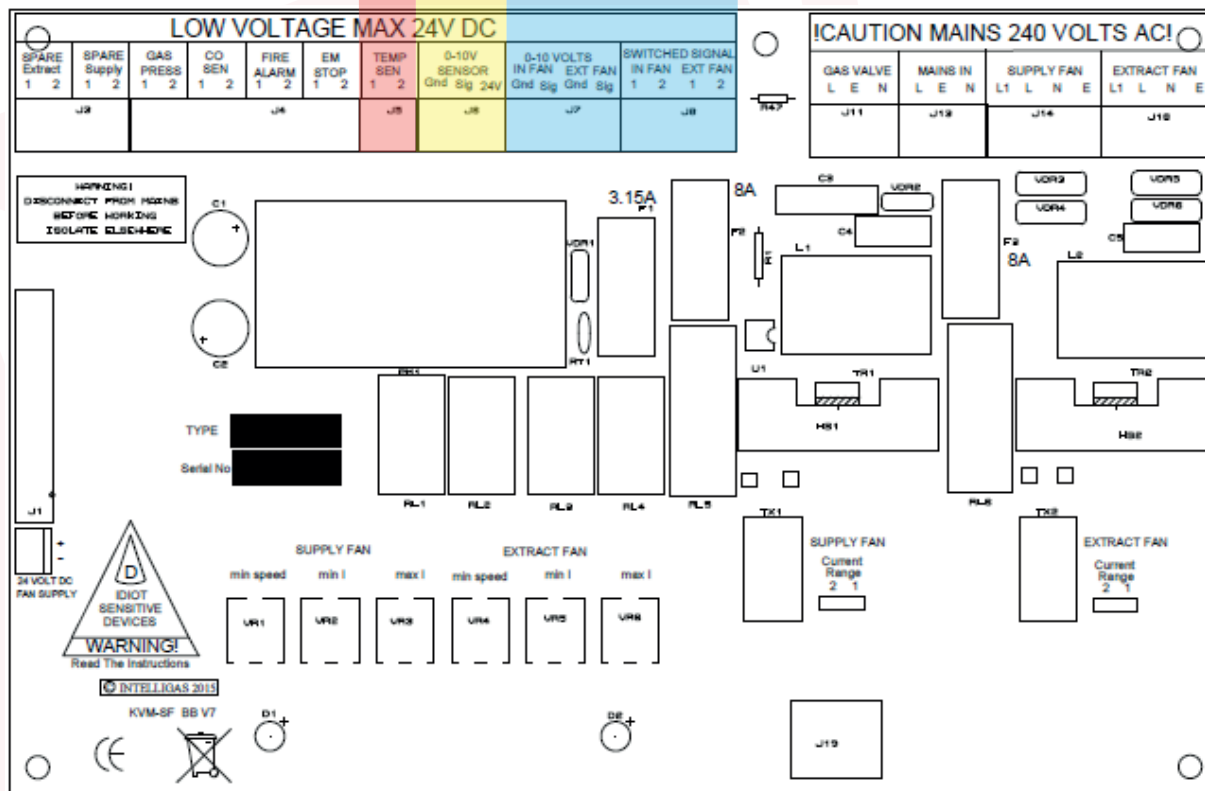
Gas safety & control systems

[intelligas.co.uk](http://intelligas.co.uk)

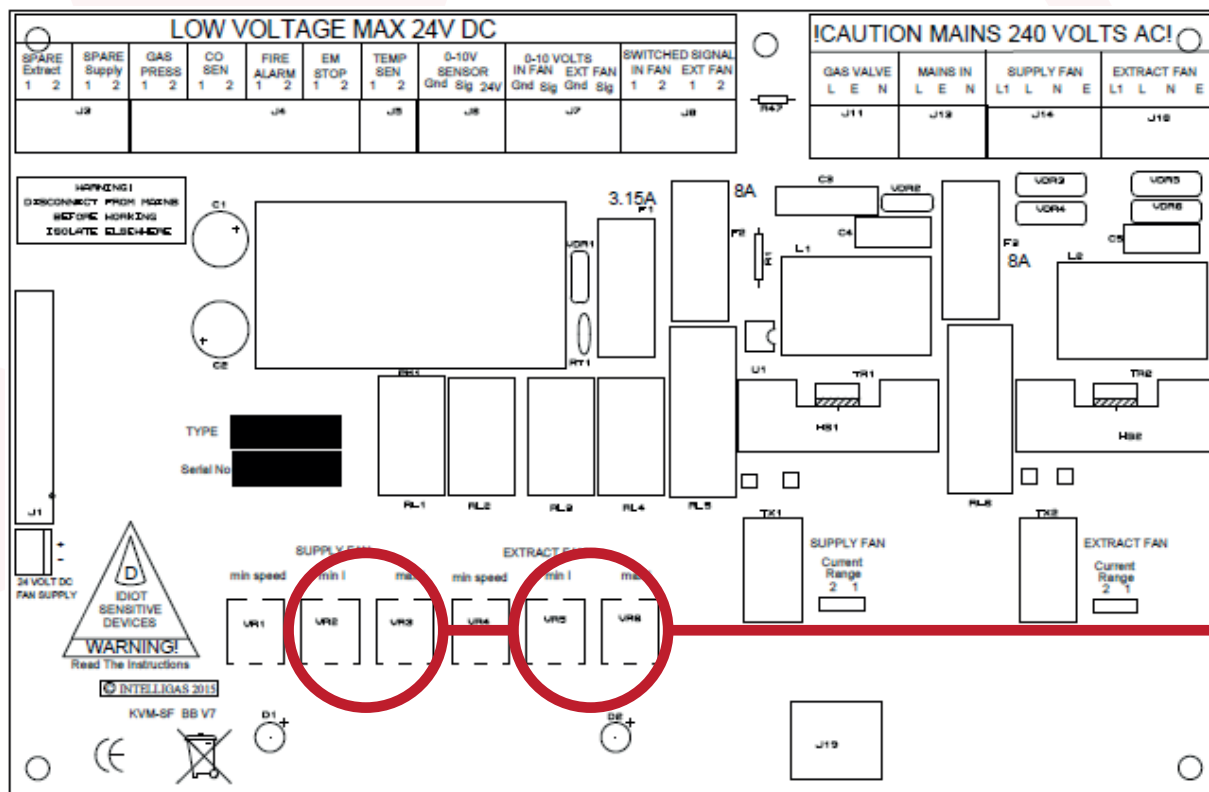
Connect a CO2 sensor here. Turn on switch 3 on the fascia control panel, this will enable automatic co2 fan speed control and gas shut off on high CO2 (4-4.5kppm) use 24v and gnd to power the sensor, connect the output of the sensor (V CO2) to the “sig” terminal.

If required, a room temperature sensor can be connected to these terminals, the system will run the fans at full speed when the set point (adjustment on the fascia control panel) has been reached.

Use these terminals to control 3 phase inverter drives. The relays will operate when the fans are selected as on the fascia. The 0 -10v signal will rise and fall with the selected speed on the front of the panel.



# Set the current sensors and minimum speed levels.



Set the fan current levels using the min and max pots on the PCB for each fan. Once the setting is in range then the green LED will illuminate.

Set the minimum speed of the fans using the pots near the min and max selectors. This allows you to determine the minimum ventilation level

Run the fans up and down stopping at each increment of speed to ensure that the current sensor light remains green. This will prevent nuisance tripping.

**24 hour Technical Support 02381 290444**

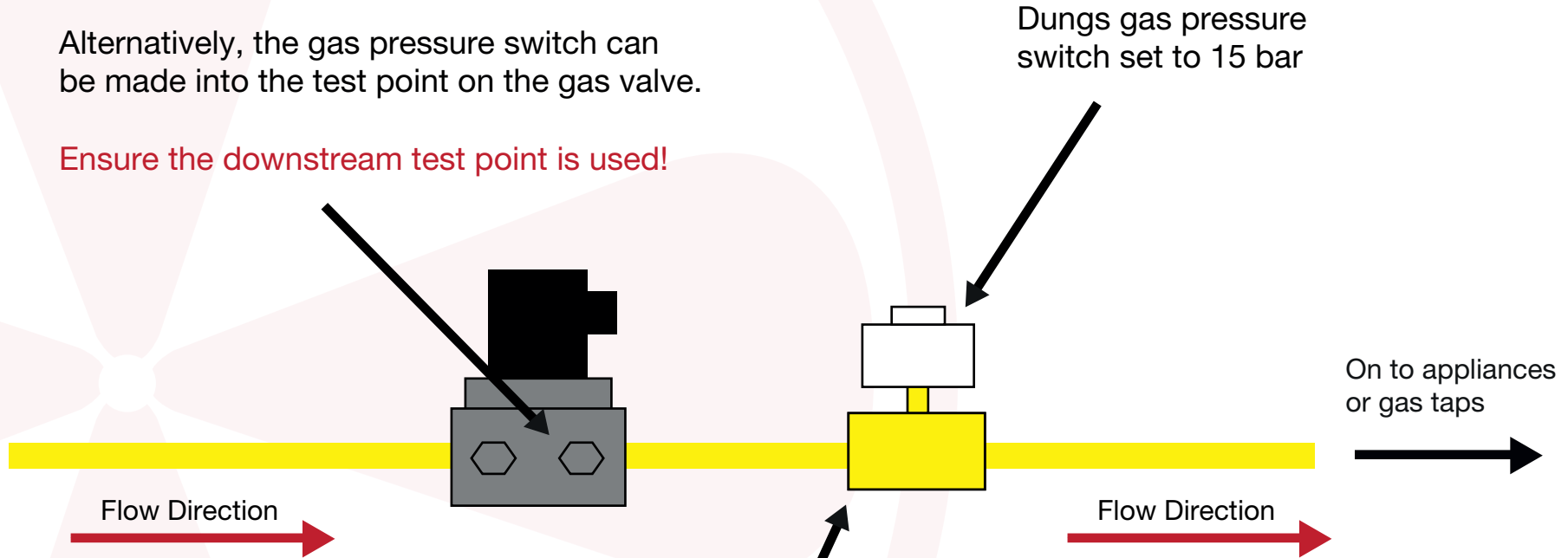


# Intelligas gas proving system mechanical layout

## Installation option 1

Alternatively, the gas pressure switch can be made into the test point on the gas valve.

Ensure the downstream test point is used!



## Installation option 2

Unequal tee joint or centre reduced down to 1/4" male nipple to make directly into Dungs gas pressure switch

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.