

TB103

Applies to models:

NVx, NVS & VPC



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Set up instruction for GM44 Modulation board



The GM44 is a modulating interface board (MIB) and is designed for use with either a single or a pair of Honeywell modulation coils V7335A (Modureg).

It provides a linear conversion of low DC voltage or current (supplied via a remote external source)

to a requested control current or voltage for the modulation coil (0-22 V-DC or 30-165 mA-DC).

This bulletin describes the procedure required to set up the GM44 board

fig.1 Modulation Board GM44

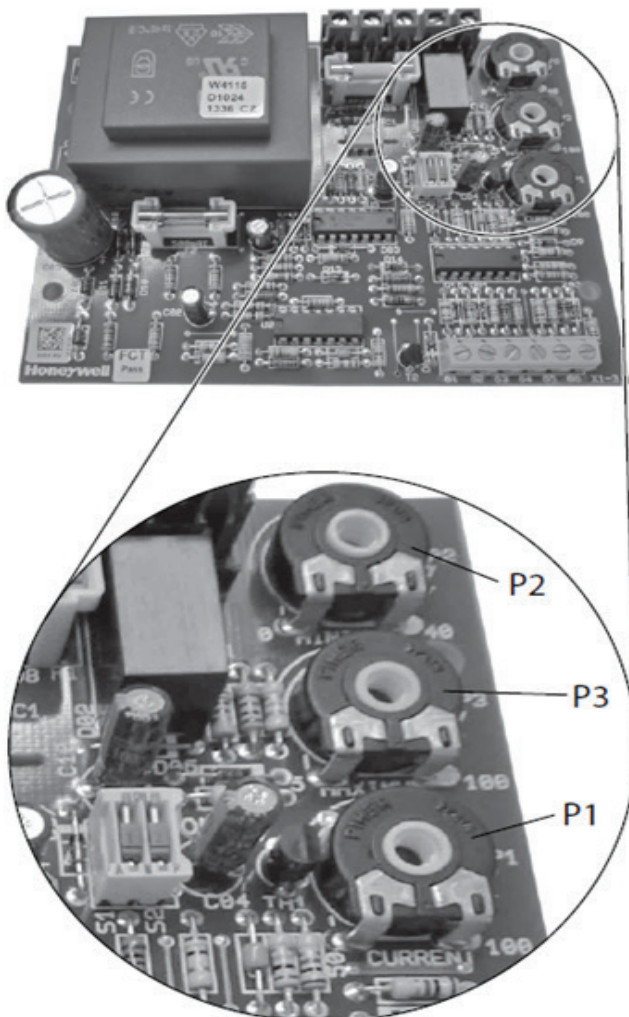


Procedure



WARNING:

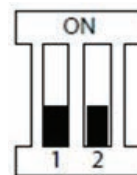
Isolate the mains supply and perform a safe isolation procedure on the supply terminals AND 'Heat On', 'Fan on', 'Lockout', 'Reset' & 0-10Vdc terminals of the control panel, in accordance with HSE Guidance Note GS38.



Modulating Interface Board

The MIB interfaces between a 0-10VDC control signal and the modulating regulator. The following are applicable to this application.

For singular heater applications the setting of the slide switches 1 & 2 should both be to OFF.



Potentiometer P1 (Default setting 100%)

The control current of the V7335A is controlled by P1, varying between 50% and 100% of the input signal.

E.g.

- When P1 is set at 100% (fully clockwise) maximum power (165mA @ 22VDC) is provided to the modulation coil with a 10VDC input control signal.
- When P1 is set at 50% (fully anticlockwise) maximum power (165mA @ 22VDC) is provided to the modulation coil with a 5VDC input control signal.

Potentiometer P2

Controls the minimum drop-out voltage between 0% and 40%

E.g.

- When P2 is set at 0% the drop-out voltage with an input control signal of 0-10V-DC is 0.3V-DC.
- When P2 is set at 40% the drop-out voltage with an input control signal of 0-10V-DC is 4.0V-DC.

Potentiometer P3 (Default setting 100%)

Controls the maximum hold-in voltage. Its proportional value is added to the P2 setting

E.g.

- When P2 is set at 0% and P3 is set at 5%, the hold-in voltage of the burner relay is adjustable between 5% and 100% of the input control signal. If the input control signal is set at 0-10V-DC the hold-in voltage of the relay is 0.5V-DC.
- When P2 is set at 40% and P3 is set at 5%, the hold-in voltage of the burner relay is adjustable between 45% and 100% of the input control signal. If the input control signal is set at 0-10V-DC the hold-in voltage of the relay is 4.5V-DC.

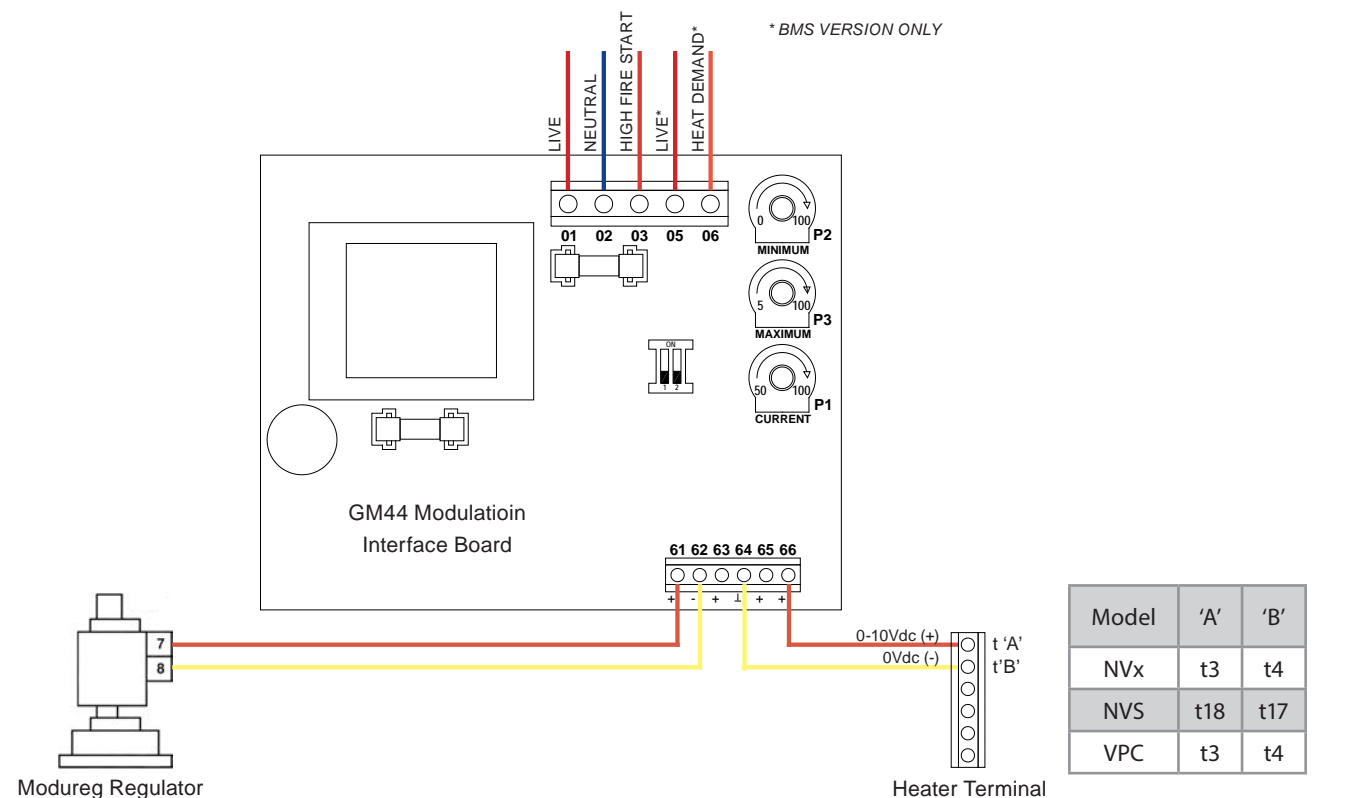
The table below shows the relationship between P2 and P3 settings.

High Fire Start

The GM44 automatically forces the modulation valve to high fire during the burner ignition period.

P2%	Drop Out Volts	P3%											
		5	10	20	30	40	50	60	70	80	90	100	
0	0.3	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	
10	1.0	1.5	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0		
20	2.0	2.5	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0			
30	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0				
40	4.0	4.5	5.0	6.0	7.0	8.0	9.0	10.0					

Wiring Diagram



Modulating Regulator

1. Set external controls to ensure that the main burner is off.

Open the side access panel.

Connect a pressure gauge to the burner pressure test point on the multifunctional control.

2. Set external controls so as to turn on the main burner and maintain high fire.

Compare the measured burner gas pressure to that stated on the data plate.

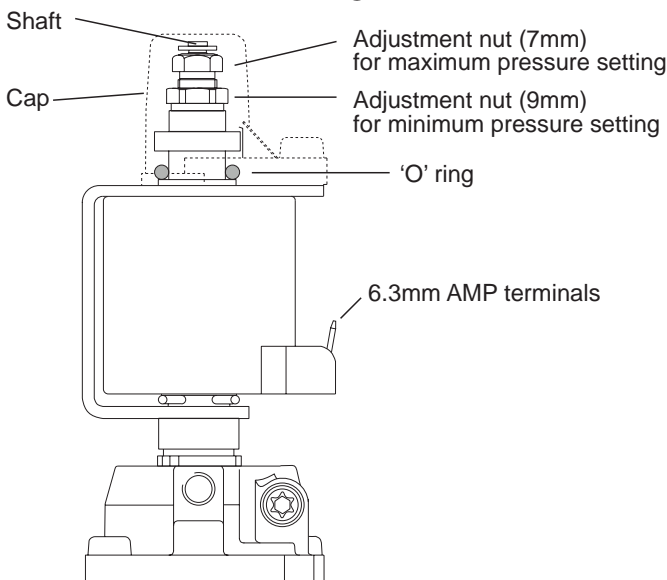
In addition it is advisable to check the gas rate using the gas meter dial pointer ensuring that no other appliances supplied through the meter are in operation.

3. Repeat 2 above with external controls set to maintain low fire.

4. If it is necessary to adjust either the high fire or low fire pressures proceed as follows after removing the plastic cover from the modulating regulator.



Note: Minimum fire setting must be adjusted first after which the high fire setting can be set. Any adjustment of the minimum fire setting alters the maximum setting.



Modulating Regulator

Minimum Setting

Disconnect electrical connection of modulating regulator and turn burners back on and wait until the burner pressure has stabilized.

Turn 9mm adjustment nut for low fire pressure clockwise to increase and counter-clockwise to decrease until the required pressure is obtained.

Reconnect modulating regulator and check high fire pressure, readjust if necessary.

Maximum Setting

Disconnect electrical connection of modulating regulator and turn burners back on and wait until the burner pressure has stabilised.

Push shaft gently downwards to the maximum adjustment screw and hold there.

Turn 7mm adjustment nut for high fire pressure, clockwise to increase and counter-clockwise to decrease, until the required pressure is obtained.

Release shaft.

Repeat both settings if necessary and then replace cover cap.

5. Turn off the main burner, disconnect the pressure gauge and replace the sealing screw.

Turn on the main burner and test for gas soundness around pressure test joint using a leak detection fluid.

Replace access panel.



HEATING DIVISION
Hort Bridge
Ilminster, Somerset TA19 9PS
Tel: 01460 53535
Fax: 01460 52341



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