1. W9 Programmable Module

1.1 The **single slot module W9** has a range of **1.0 - 30V DC** with a current capability of **2 Amps**.
1.2 The **W9** Module is only available with the control option listed in section. 2.1.
1.3 The designator for the baseboard is: -

a. **W9FS**: - W9 module + fixed O/V + screw terminals

2. Programmable Module Option.

2.1 Option: -

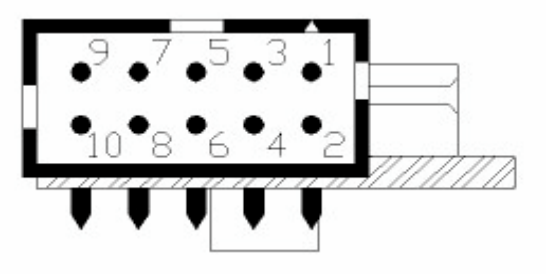
a. **V9**: - 0-5v Voltage Programming + 0-5V Current Programming + Inhibit

2.2 Option brief description: -

a. Voltage programming : a **0-5 volt** input from an external DC source, connected between **pin 4** (+V) and **pins 1 - 3** (0V) results in a linear **1.0 - 30V** volt output.
b. Current programming : a **0-5 volt** input from an external DC source, connected between **pin 5** (+V) and **pins 1 - 3** (0V) results in a linear **0.5 - 2A** current limit.
c. Inhibit control : see figure 4 for further details.

2.3 Programmable module configuration code "**W9FSV9**".

2.4 Molex connector fitted to option board, connection details



Pin 1, 2, & 3	Return circuit for pins 4,5
Pin 4	0-5V external voltage programming pin
Pin 5	0-5V external current programming pin
Pin 6	No connection
Pin 7,8	Module Inhibit -Ve
Pin 9,10	Module Inhibit +Ve

Figure 1. Pin Layout & Description.

Abbreviations

W9: - **W**ide range
F: - **F**ixed O/V
S: - **S**crew terminals
V: - **V**oltage programming
9: - Current programming + Inhibit function

Mating connector information:
Note: housing and pins supplied with each power supply.
Housing: Molex 51110-1060
Crimp pin: Molex 50394-8051
Hand Crimp Tool: 69008-0959 (Europe or Japan) Or 11-01-0204(USA)

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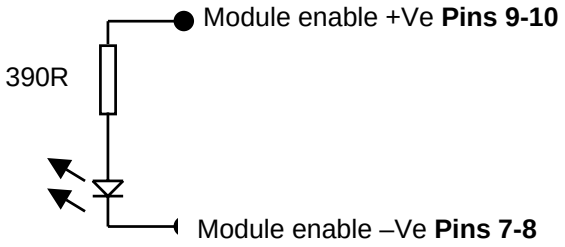
Inhibit function circuit connections



Internal to the module inhibit is a 390ohm 1/8W resistor and the diode of an opto-coupler.

To Inhibit the module apply 2-5V between +ve and -ve. Do not apply > 6V as damage may result. Higher voltages may be used to drive the circuit, although an additional series resistor should be used to limit the current. A current of 1-10mA will inhibit the module. Ensure 13mA is not exceeded.

When a module is inhibited, there may be up to 0.05V remaining at the outputs of the module.

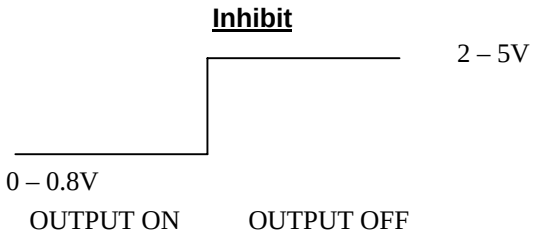


Figure 4.

General Installation

All switch mode power supplies can be sensitive to stray inductance in the power leads, specifically in remote sense leads if poorly installed. Poor transient response or high noise pickup and intermittent tripping of Over-voltage protection are potential possible problems concerned with poor installation. Observing a few simple rules will ensure a trouble free function: -

When connecting Vega by means of a cable harness, run the remote sense as a twisted pair and power output cables as a twisted pair where possible. Keep cable runs as short as possible.

When connecting Vega to the load by means of a PCB back plane, run the power tracks "back to back" on the PCB to minimise the projected area of the loop connecting the positive and negative outputs. Run the remote sense and power connections as separate pairs, avoiding close parallel runs and only coming together at the load.

During emissions testing it was found beneficial to encircle all programming inputs with a ferrite bead. In some cases this may increase margins in accordance with EN55022 Conducted Emissions Class B.

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The load should be de-coupled with 10uF of capacitance per Amp of load current. The greater the amount of de-coupling, the better the transient response of the system will be. (NB Max recommended de-coupling is 1000uF/Amp).

Mating connector information:
Note: housing and pins supplied with each power supply.
Housing: Molex 50-37-5023
Crimp pin: Molex 08-70-1039
Hand Crimp Tool: 69008-0959 (Europe or Japan) Or 11-01-0204(USA)

Remote Sense

Remote sense connection as viewed from the ba

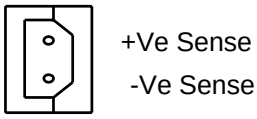
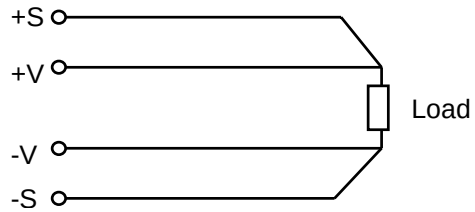
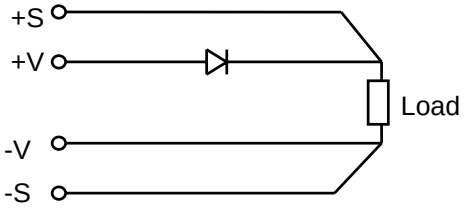


Figure 5.

Remote sense can be used to compensate for the drop in voltage along the load cables or for the drop in voltage across blocking diodes. The voltage at the output terminals will be higher than that at the load by an amount equal to the voltage drop due to load lead resistance and/or blocking diodes if used. The maximum voltage drop between the load and sense connections should not exceed 0.75V

Always observe the following general rules for remote sense operation: -





a. Ensure that the remote sense cables are twisted pairs.
b. PCB tracks for remote sense should be run back to back.
c. Ensure that the remote sense cables / tracks are as short as possible.
d. Ensure that the sense cables are not twisted together with the power cables.
e. PCB power tracks and remote sense tracks should be kept away from each other as far as is possible.
f. Do not fit components (resistor, inductor or diode) into remote sense lines. This could make the system unstable.
g. Do not exceed the maximum voltage drop that the remote sense can compensate for.

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