

Getting Started

Initial power connection and test.

Connect the module to a suitable supply (12-32v with the Vin terminal to positive and Gnd to negative).

A keypad can be attached and will allow you to check the functionality and familiarise yourself with the operation (refer to the manual on my website).

There's no need to connect a stepper driver/motor at this point.

Apply power and the unit will power up; the screen should illuminate and momentarily display the welcome screen and then query for the profile.

The profile defaults to '1', simply press [G] to accept this and go to the main menu.

(If you only intend to have one profile you can remove this step in Setup)

Keypad.

An 8 pin header is provided which will plug directly to the keypad.

If you are using the keypad I provide the orientation is correct with the wire coming out of the top of the keypad.

If you're using an alternative keypad then please consult the manual for details on configuring it.

Using the controller, a Quick Guide

[G] behaves like an enter key, pressing it will enter the currently displayed value.

[C] behaves like a cancel or back button. Pressing it will reset a value you were changing or take you back to the previous screen.

If you're lost just keep pressing [C] until you get back to the main menu.

[<] and [>] rotate the table CCW and CW in the various division modes.

When editing numbers they behave like cursor keys allowing you to move back and forth along it to change an individual digit.

[STOP] is an 'emergency' stop.

[Speed] cycles through the 5 speeds (1=low, 5 = high) – but only when the table is stopped.

Whilst on the main menu press the required number key to enter the required mode.

Separating the display from the controller.

The LCD is connected to the PCB using a header and socket allowing them to be separated for ease of fitting into a case.

Once separated the LCD can be attached to the front panel using the provided screws and the controller PCB bolted back on.

When reconnecting make sure the LCD and controller PCB are firmly seated together with the connector pushed fully home.

Choosing a stepper driver / motor.

The following is just rough advice covering the sorts of dividing heads / rotary tables found in a typical small shop (4" - 12"). More detailed advice can be found online.

The usual size of stepper motor for the above is Nema 23.

The motors have a number of parameters but as a rule the lower torque versions (1-2Nm) work well with the smaller 4-6" tables and the larger (2+ Nm) will work with 6" and upwards. The low torque versions are also shorter which suits the smaller tables.

For stepper drivers I would recommend either the DM542 or TB6600.

The TB6600 is smaller but runs hotter and for continuous use with a larger motor may require a small fan to keep it cool although for intermittent use (i.e. dividing) is usually fine.

The DM542 is larger and more expensive but runs much cooler and smoother.

If you use a metal case you can remove the heatsink and mount it directly to the case using it as the heatsink negating the use of a fan if mounted internally.

With a 24v supply my experience is that even continuous use will only see it run slightly warm.

Finally stepper motors have a lot of torque particularly at low speeds. You can run them at less than their rated current which will help keep them (and their driver) cool as well as running quieter.

Suitable Cases.

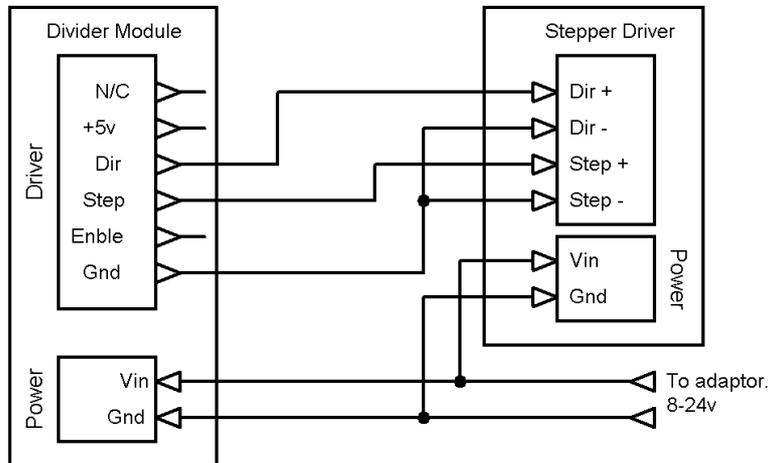
If using an overlay then you can purchase cases (usually plastic) with recesses for the overlay (Google "electronics enclosure overlay recess").

The overlay I supply is A5 sized so any recess shouldn't exceed this.

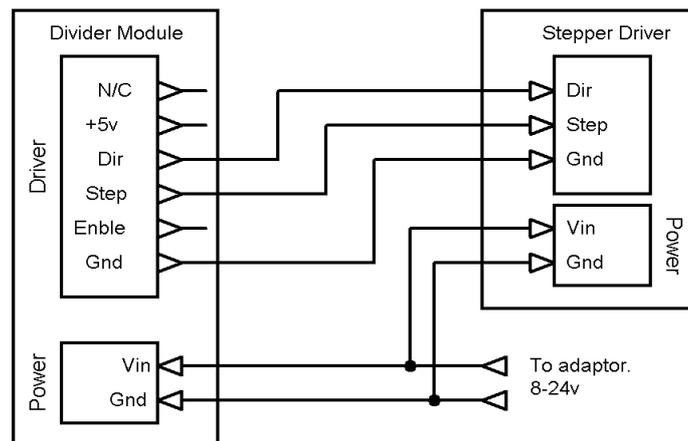
Typically cases in the range 180mm-220mm high by 120-160 wide by 55-100 deep are suitable. Actual size will depend on whether you wish to mount the stepper driver in the case etc

Connecting the stepper driver to the controller.

The most common driver connections have separate negative lines for both step and dir. In this case connect the two negative lines as shown below and connect them to the Gnd connection on the module. Step+ and Dir+ can then be connected directly.



Some drivers only have a single Gnd line as shown below, these are simply connected one to one.



Note some drivers have different nomenclature for the connections.

e.g.

Dir may be CW, DR etc.

Step may be Pul, PU, CLK etc

If you have any questions please contact me via email.

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Component Layout & Circuit Diagram

