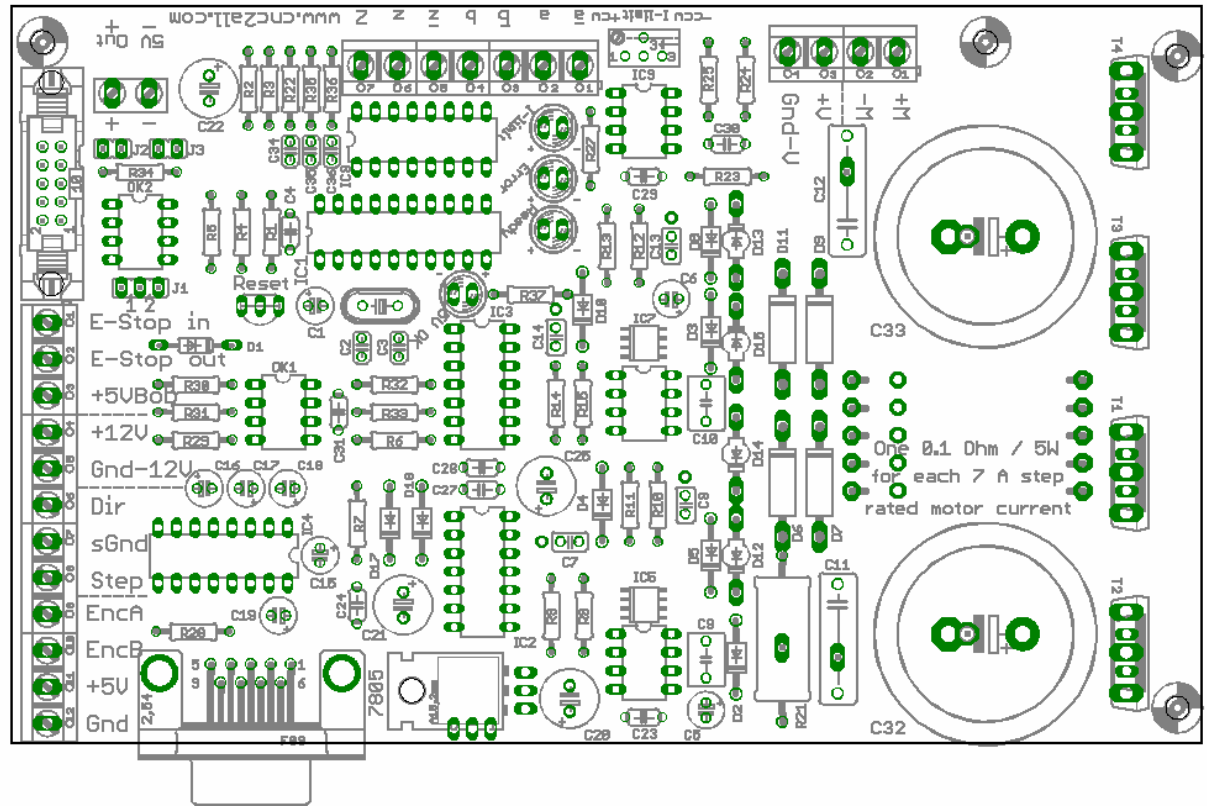
SD-1 Technical details



Connectors

In the upper left hand corner you will find the IDC connector for use with the cnc2all.com Interface/control board.
Under it there is screw terminals for users with other interface boards.
On the top from the right you will find a screw terminal for motor and motor supply.
On the top from the left you will find a screw terminal for line driver encoder (if used).
Small letters on this are inputs and "Z"(capital letter) is a output for the Z channel also known as home-position.

The jumper settings J1-J3 is for changing the logic level of the enabling also known as E-stop input.
For a control board which have a E-stop level of normally high(1) (when **not** in E-stop) the setting should be:
J1 in position 2(jumpered) and J2 jumpered. J3 not in use.
For a control board which have a E-stop level of normally low(0) (when **not** in E-stop) the setting should be:
J1 in position 1(jumpered) and J3 jumpered. J2 not in use.
These setting are for both the IDC connector and screw terminal marked "E-Stop in".
The LED "Ready" tells you when the driver board is in normal condition. This must light green to be in action.

The "E-stop out" terminal is a output for external devices for example a LED placed outside the cabinet which tells you that you are in E-stop condition/SD-1 error. A good thing to know is that you can for example wire three boards "E-stop out" terminals together and connect it to the – side of a LED and the + side of the LED to a resistor, and the other side of the resistor to +12V.

The board have it´s own 5V regulator so the only supply for the board is 12V.

The terminals marked EncA, EncB is for one wire encoders (push-pull) technology, if used. Below them you will find the supply for encoders (both types).

The terminal marked ā – Z is for the line driver type encoders (if used). Small letters are inputs and "Z" is output.

If you are using one wire encoders the IC8 **must** be removed.

The current limiting is for the protection of the motor. Trimming is done by rotate the I-limit screw ccw (counter clock wise) to decrease the current to the motor (The LED I-limit will shine). To increase the current, rotate the screw cw(clock wise). Always start with the I-limit to minimum (max ccw).

Starting it up

Always work with one axis at the time.

Now the test run can take place connect the encoder first. Then PC is attached via serial cable and UHU.exe program is started. Now 12V DC voltage can be attached to the voltage supply terminals **with correct polarity**. The two green LEDs should shine immediately on power up and in the terminal program controller should appear itself. (This will not happened if the contol board is in E-stop mode). If the controller appears on the PC then the encoder can be turned. Doing so will make an error (red LED) shine because the motor power is not connected, this will proof that you have communication with the encoder. Now step and direction signal can be connected, between the terminals of Dir and Step there is a terminal sGnd, this is signal ground connected to control boards signal ground to maintain 100% opto-isolation. If everything runs successfully you can continue. Now you can connect the motor (+M and –M) and the motor supply (+V and –V).

Ready ?

Turn the I-limit slowly cw and the I-limit LED will go dark. The I-limit should always be trimmed with the motor attached to the machine under it´s rated maximum load.

Q! The motor does not turn in the preferred direction !
A! Either swap the +M and the –M **or** the encoder lines.

Q! How to reset the controller after an error have occurred?
A! Just make an E-stop, this will make an hard reset on the controller.

Q! The driver board seems to be "dead"!
A! Check up if the control board is in E-stop condition if not check the power supply.

Q! The control screen do not appear on the PC.
A! Disconnect the 12V power to the driver board and connect it again.

Q! I have changed the values in the controller but it is not changed when I power it up again?
A! Values are not changed and stored until you store it by saving (S0 or S1 or S2 command).