Manual

6 Axis CNC Interface Breakout Board

Model#-DB25M-3R6A

Lastest update : Feb 2016

Read this manual carefully before making connections to the board.
Store this manual away for further reference.

Safety Notes:

The electronics of the control board is designed to accept DC power ONLY. Ensure that the positive and negative connections are made correctly before the powering on the unit. Incorrect wiring will cause damage to the board.

The control board is an open circuit design. Do not allow conductive objects like small pieces of wire or stray pieces of metal to touch any of part of the circuit. Mount inside an inclosure using insulated (plastic) stand offs or insulating pads. Do not mount directly to any conductive metal or aluminum plates. Handle with care, do not drop or touch the electronic parts on the board.

Keep the board from damp environment.
Keep the board in adequate ventilation.
Keep the board from mechanical damage.

Note: the DB25M-3R6A has a male 25 pin line printer port input to be used with a female parallel printer cable. It can not be used with serial printer cables, usb to serial printer cord adapters, or any other cable that is not a parallel printer cable . If your computer does not come with a DB25 parallel printer port, one may be installed. To avoid frustration be sure you have the right cable.

Note: then DB25M-3R6A is equipped with a usb port. This port is for supplying power to the board. It is not used for any communication with the computer or with the board. It is strictly used as a power supply input.

Usage:

The DB25M-3R6A control board is designed for MACH3 CNC software and other CNC programs that utilizes the computers DB25 line printer port.

The control board is extensively used in the CNC industry. Such as CNC engraving machines, CNC lathes, CNC plasma cutting machines, CNC laser engraving machines, CNC milling machines, etc.

The use of the DB25M-3R6A is designed to put an isolation buffer between the computers sensitive electronics and the high current and voltages of the control (motor) drivers. The board also aids in making easy connections of the line printer port and to help boost signal strength.

Features:

1. Easy to install, low cost, high reliability.

2. Absolute voltage isolation. The CNC control board is powered by the computers USB port and is used as a digital power supply that is designed as common cathode and common annode, which is connected to the motor driver's common port.
Note: This must be energized to operate the control board.

3. Three relays are designed into the board that can be programmed to control external equipment such as a solenoid valve, cooling pump and so on. A secondary power supply (24VDC) is required to energize the three relays, all inputs and spindle-out on the board. This is used as the analog power supply and is isolated from the digital power supply through the use of an optocoupler. Each relay has a corresponding LED to use as a pilot lamp.

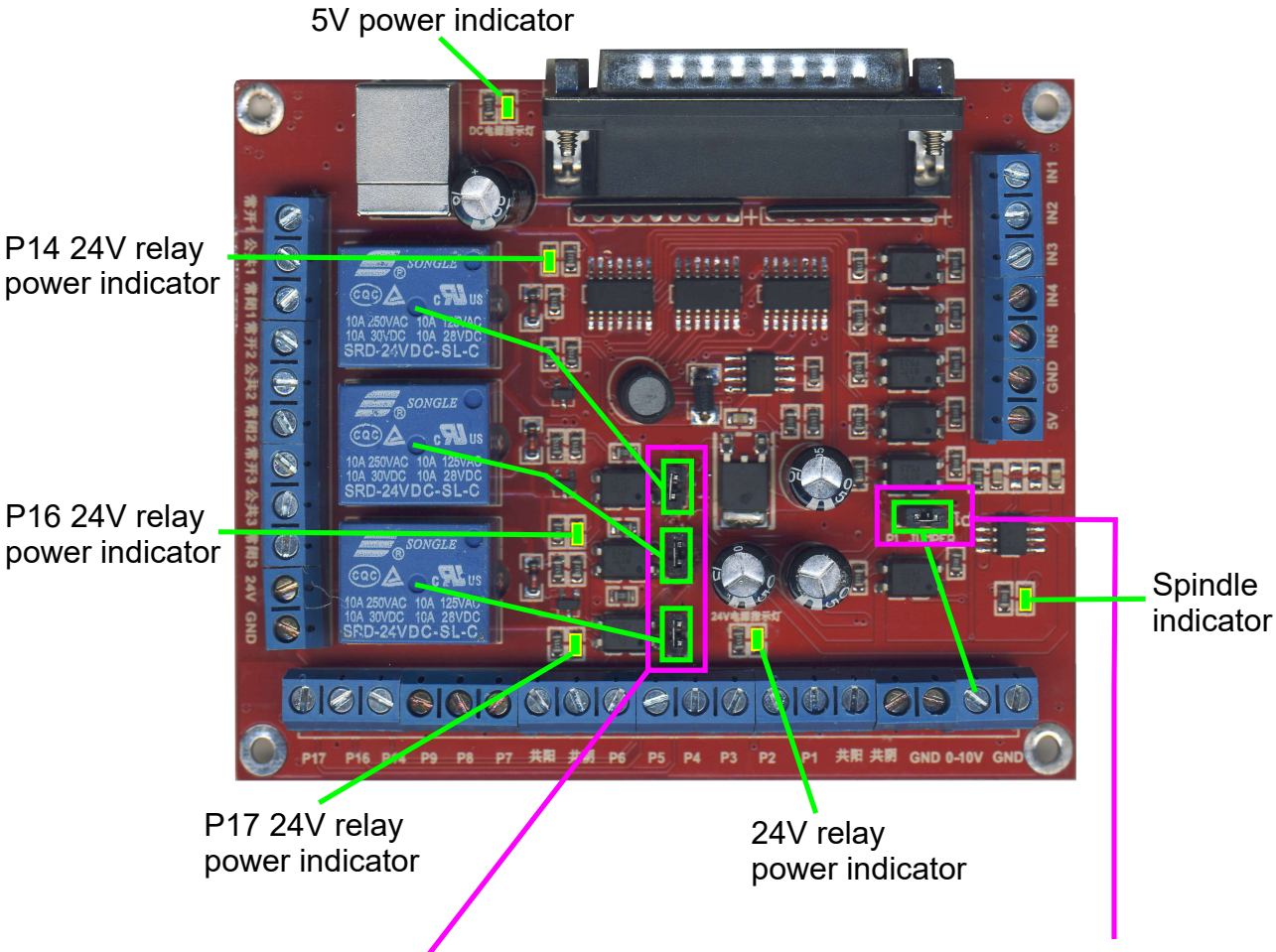
Note: this power source is not required if the relays, inputs and spindle are not intended for use.

4. Five signal ports are isolated by optocouplers which can be used for limit switches, position switches, finding origin points, starting and emergency stopping.

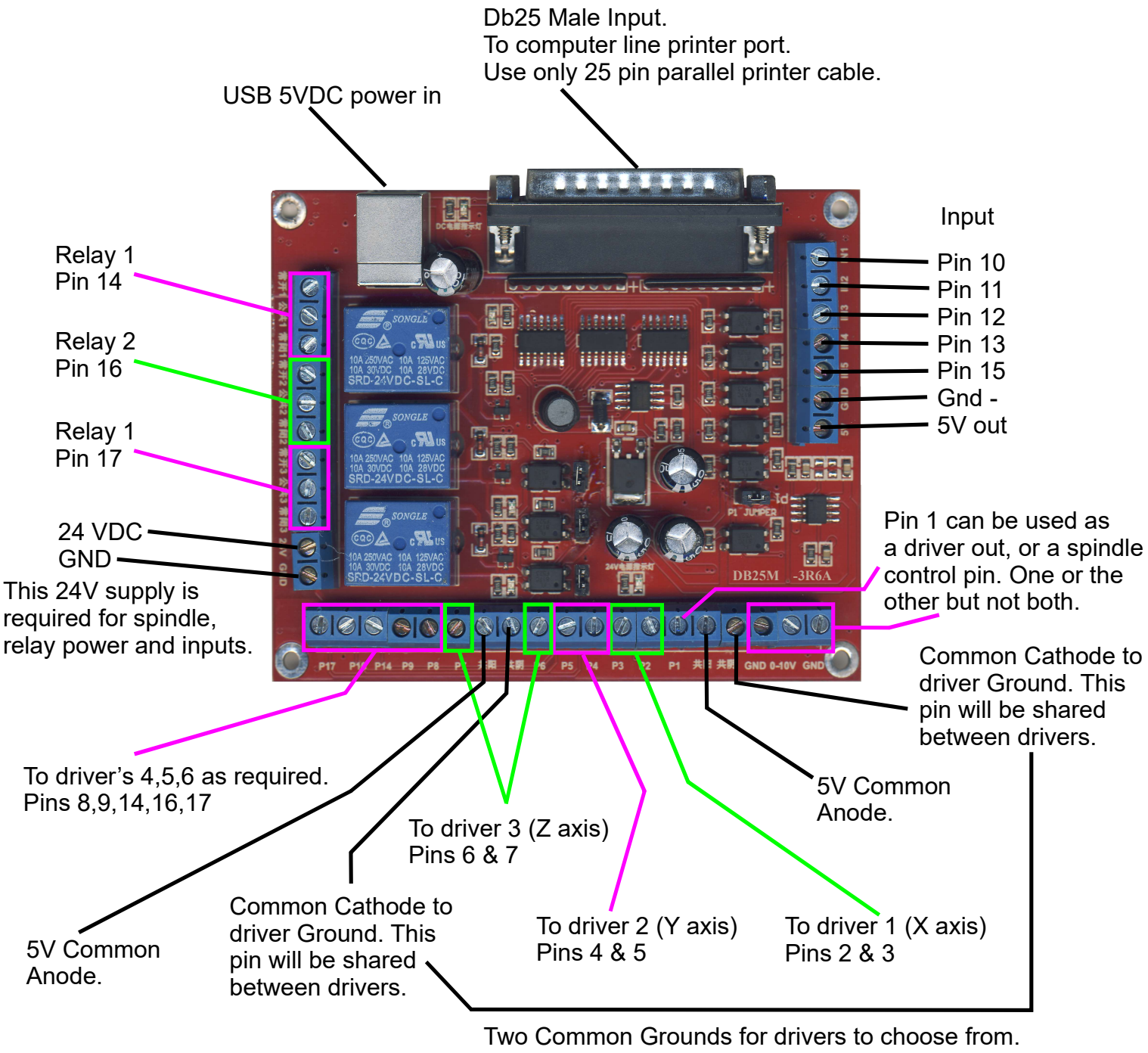
5. Twelve output ports can control six motors simultaneously (6 Axis control). They can also be programmed to be used as single outputs. Some ports are communally designed for two functions (input or output)

Due to the limitations of the Db25 LPT, there are only 12 outputs.

Pin 1, Pin 14, Pin 16, and Pin17 are shared outputs. Which means you select how to use them. You can have up to 6 driver outputs. However in doing so, you will have no relay outputs or spindle output. By using the onboard jumper you select which outputs you wish to use and how to use them. If you wish to use all three relays and spindle, you will only have 4 axis output.



Pin layout - inputs and outputs



Wiring diagram.