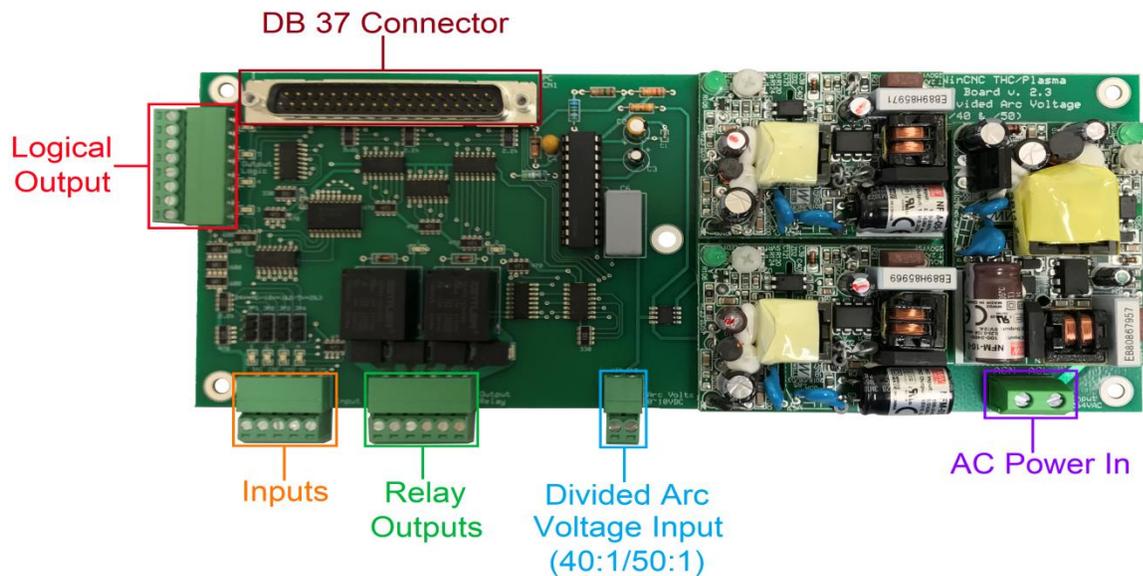


## Introduction

This document will outline installing a THC board on your CNC machine controlled by WinCNC.

### Surface Mount THC



Pictured above is the THC Board. The first step in connecting the board should be configuring the jumpers to accept the input voltage you are using. By default you will receive your board with all jumpers removed and enclosed in a separate bag. Jumper positions 1+2 should be used for 12v DC, positions 2+3 should be used for 5v DC, and no jumpers should be used for 24v DC. If using 5v DC for your inputs the 5v output on the board can be used a power supply. Any other voltage will require an external power supply not supplied.

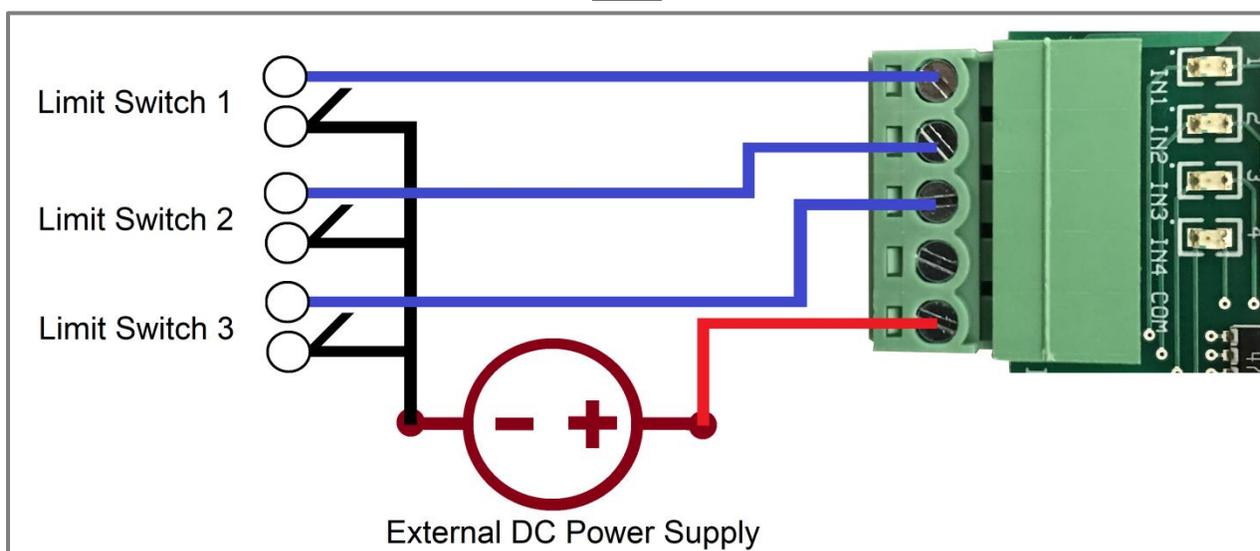
### Power and PC Connection

Either board can be powered using 90~240V AC. The CN2 board uses a DB37 cable to connect directly to the blue connector at the back of the PC.

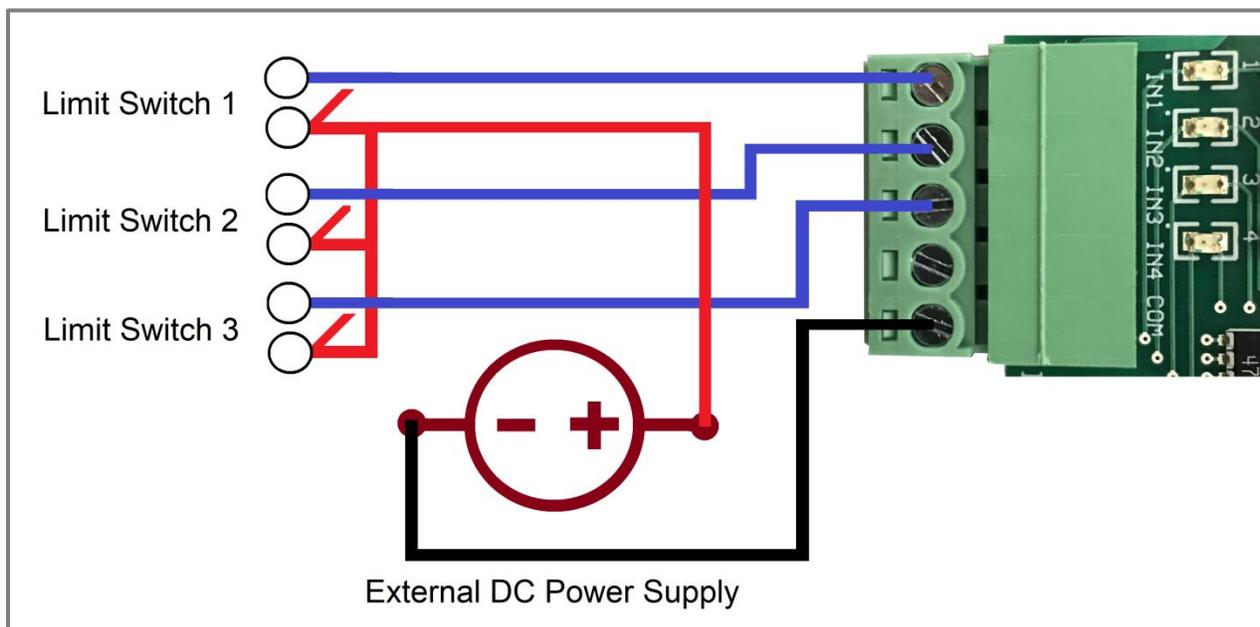
## Input Wiring

Below is an example of wiring for multiple limit switches. There are two different ways to connect inputs to the board and if you are using transistor style switches you will need to use the correct method for NPN or PNP depending on your switch type. If using normal contact switches either method can be used.

### NPN



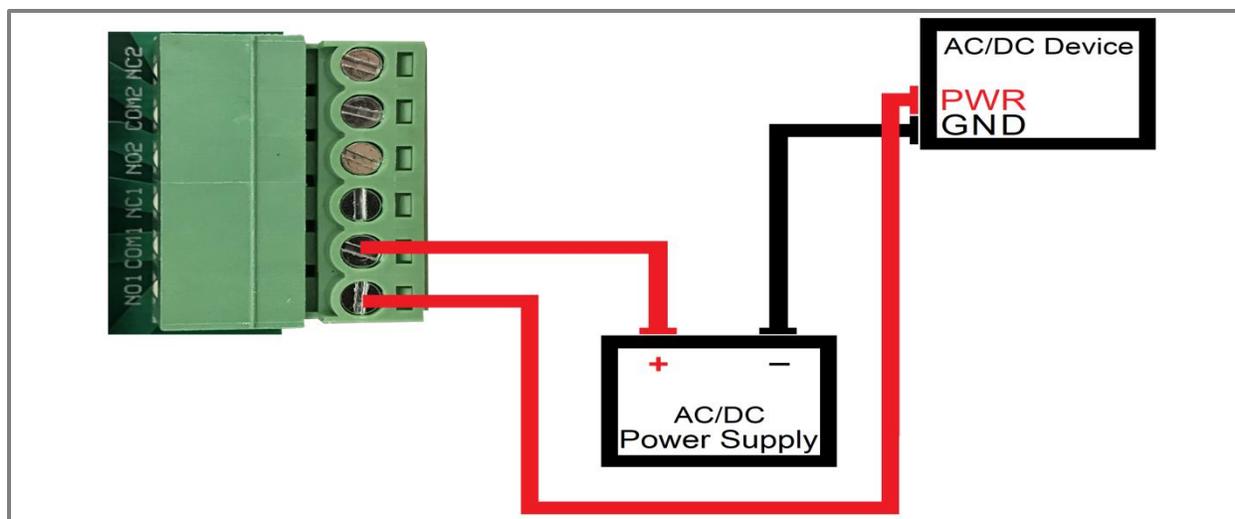
### PNP



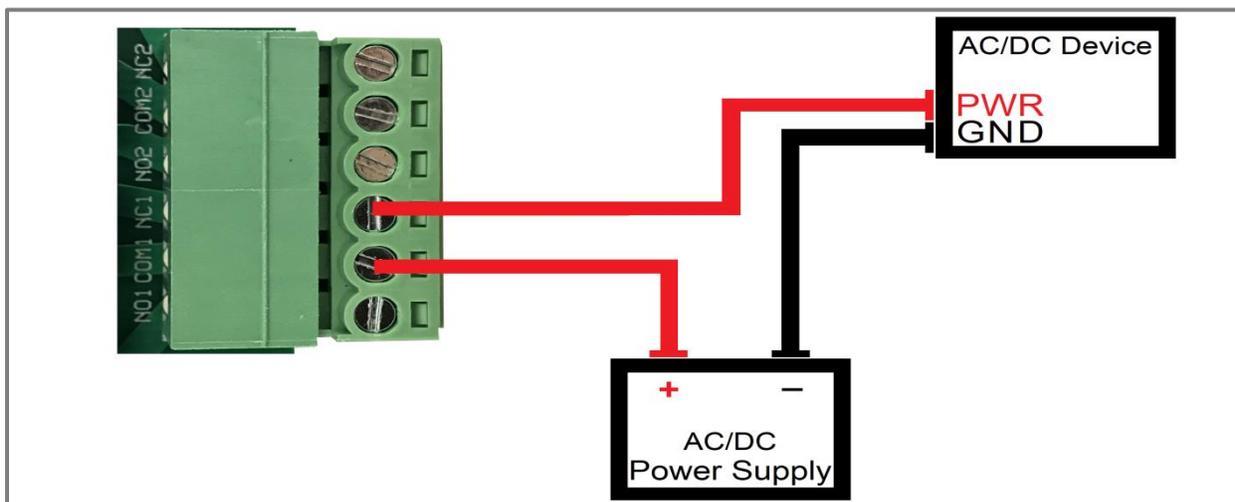
### Relay Outputs

The outputs on each board can be wired to turn on your spindle, dust collector, or any piece of equipment you would like to be able to control through the software. Your input power up to 240v AC goes into the COM terminal and depending on whether you want the equipment to be on while the control board is powered off (NC) or off while the control board is off (NO) you place another wire going from the corresponding terminal to the voltage input on your equipment.

#### NO



#### NC



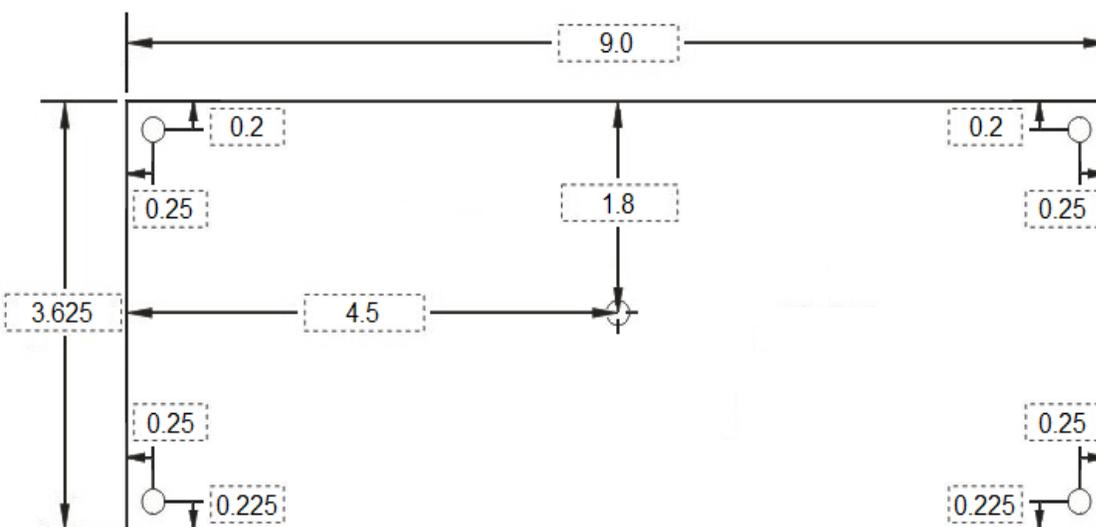
### Logical Outputs

The four logical outputs in the top left corner of the THC board each have a positive and negative terminal. A voltage input on the negative terminal will be output on the positive terminal when the corresponding output in WinCNC is turned on. Maximum rating for the circuit is 24VDC and 50mA.

### Divided Arc Voltage Input

The divided arc voltage input receives a divided arc voltage from the plasma power supply. This must be divided at a ratio of either 40:1 (preferred) or 50:1. This voltage is measured by the THC IO board and reported to WinCNC to be used for automatic torch height control. The terminals are labeled positive and negative and polarity must be wired accordingly.

### THC Size Specifications



Mounting Hole Diameter = 0.170"  
Board Size = 9.0w x 3.625h