

CWD556 + KK01 WIRING DIAGRAM



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**INFORMATION IS SPECIFIC TO OUR PRODUCTS AND CAN CAUSE
DAMAGE IF USED WITH NONE COMPATIBLE PRODUCTS SO PLEASE
CHECK WITH YOUR SUPPLIER FOR COMPATIBILITY**

These drawings are supplied as a guide no guarantees are implied or given. Caution when wiring and check with a qualified professional if unsure. It is your responsibility to check you have complied with your local legislation as to safety requirements for your country as machines can cause injury to users.

By using these diagrams you agree to the above safety warning.

Documentation will be updated amended at the discretion of CNC4YOU Ltd.

Please Read Carefully Before Wiring Your Machine

CONDITIONS OF USE

Certain laws and regulations apply to your use of CNC machines and automated equipment and it is essential you comply with your local and any international regulations for construction and use of automated equipment.

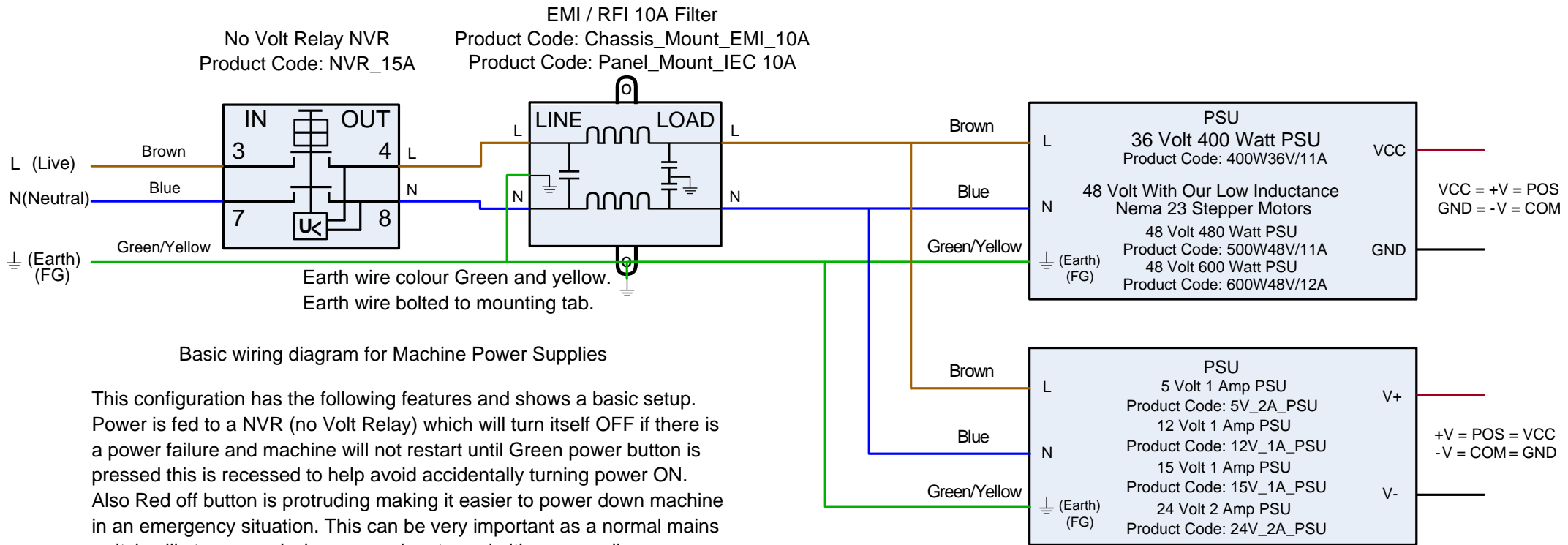
These diagrams are a guide to wiring your machine and do not constitute advice or direction to complying with your legal obligations and any health and safety requirements you must comply with. It is crucial you understand the dangers and safety implications when automating your machine or system and special care must be taken when automating your spindle or other cutting tools or equipment and we are showing a simple setup which will be amended without notice to show the complexity of automating cutting tools, but you are again responsible for meeting and understanding your specific end customer use and or meeting all necessary safety regulations and these can and do change regularly so consult your local regulations and make sure you observe all safety regulations .

You are required and agree to maintain compliance with all applicable laws and regulations. You understand and agree that you are solely liable for compliance with such laws and regulations, and under no circumstances shall CNC4YOU Ltd. be responsible or held liable for such compliance. You understand that breach of such laws and regulations may result in both criminal and civil sanctions against you. In accordance with these terms and conditions for CNC4YOU Ltd. you agree to indemnify CNC4YOU Ltd. for any violation of such laws and regulations. If in doubt seek professional advice if you are unsure of your legal obligations.

CNC4YOU Ltd assumes our equipment will be integrated into Industrial control equipment and as above integrated safely to avoid injury to yourselves or third parties. This equipment has not been designed for implicit use for life support applications or intrinsically safe designs where life threatening or critically safe use is required. Our products have not been specifically designed as fail-safe equipment. It is advisable to give adequate training and safety procedures to operators using automatic equipment.

Before using any drawings or wiring diagrams please check on our website for latest version, all wiring diagrams should have a version number if not please contact us so we can amend and issue version information.

Wiring Diagram for Power Supplies Switch Mode PSU's

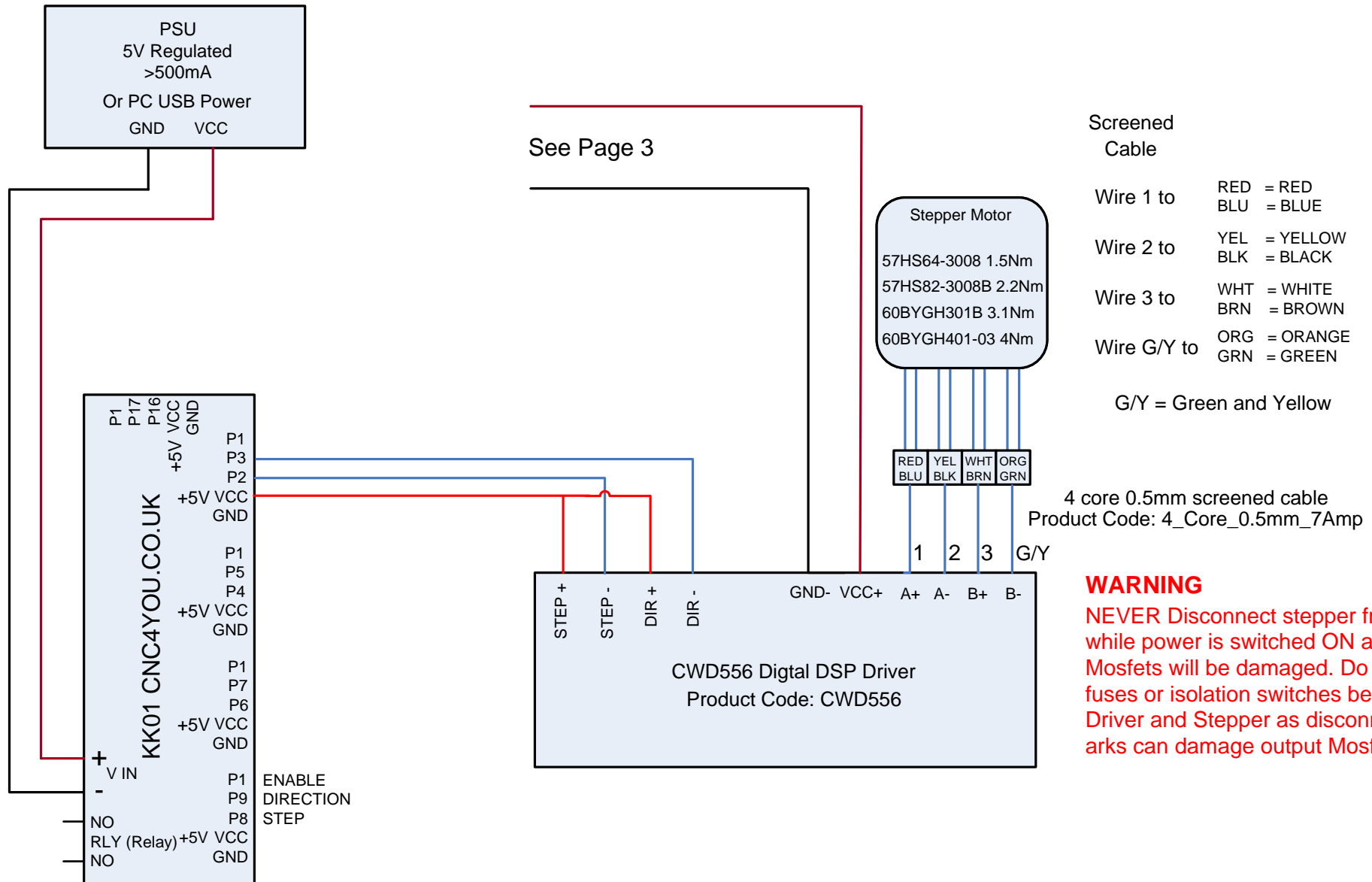


Basic wiring diagram for Machine Power Supplies

This configuration has the following features and shows a basic setup. Power is fed to a NVR (no Volt Relay) which will turn itself OFF if there is a power failure and machine will not restart until Green power button is pressed this is recessed to help avoid accidentally turning power ON. Also Red off button is protruding making it easier to power down machine in an emergency situation. This can be very important as a normal mains switch will stay on and when power is returned either manually or automatically due to power outage being resumed machine could easily start moving without notice and if a simple spindle setup where spindle is turned on with a locked power switch spindle will restart without warning. This can be a real problem when using a Laptop as internal battery can allow Mach 3 or other software to still be running if suitable precautions aren't observed to stop software when power has been lost, this also applies to computers running from an UPS (uninterruptable power unit).

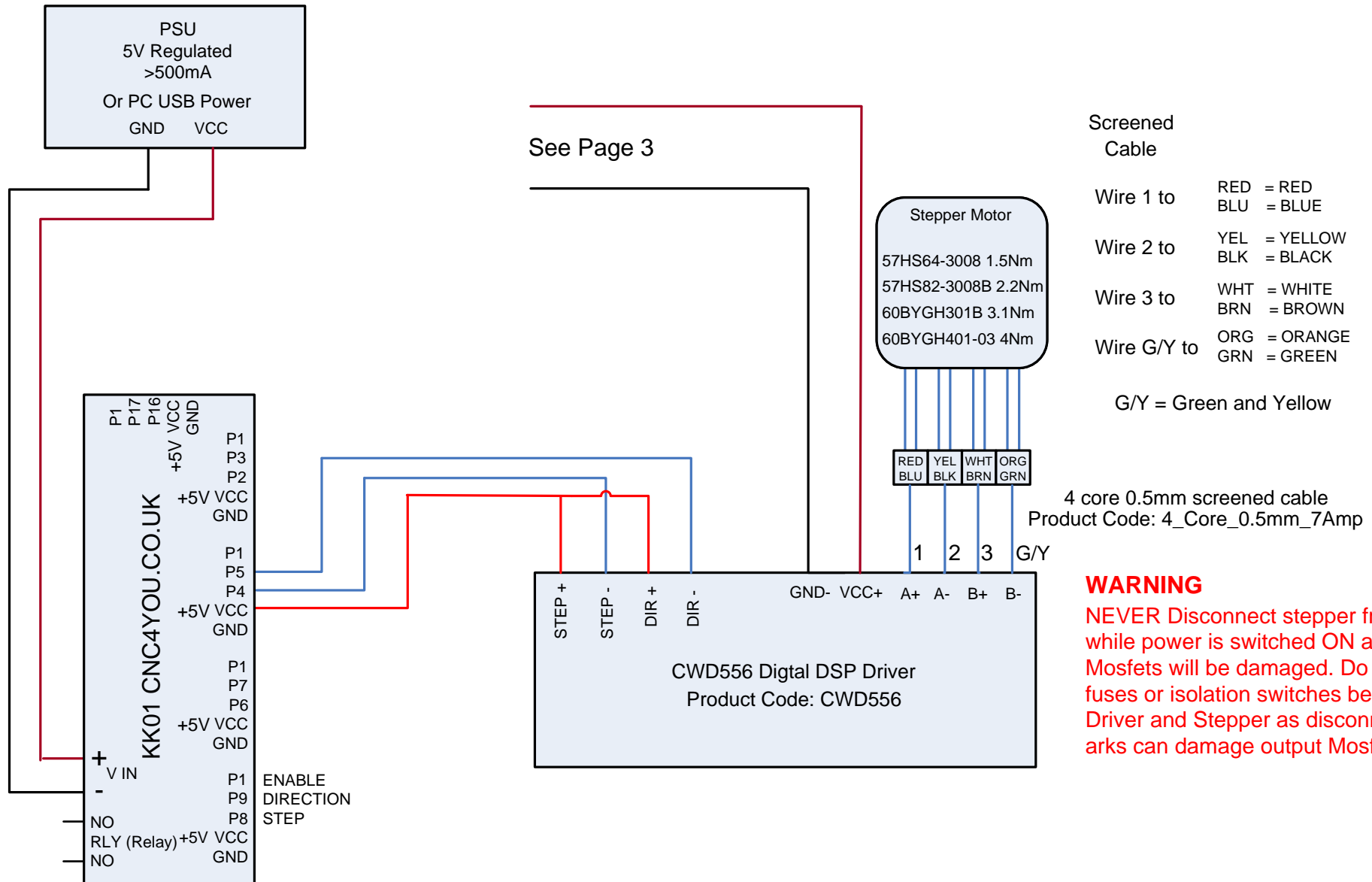
EMI / RFI filter will help prevent external mains noise causing noise in your system which can result in transients causing spurious steps or triggering limit switch or E-Stop signals, in very noisy environments or industrial premises it can help reduce transients capable of damaging your electronics. Noise generated by Plasma cutters etc. will require filtering to allow stable operation of your CNC or automated machinery.

X AXIS WIRING DIAGRAM



WARNING
 NEVER Disconnect stepper from Driver while power is switched ON as output Mosfets will be damaged. Do not use fuses or isolation switches between Driver and Stepper as disconnection arks can damage output Mosfets

Y AXIS WIRING DIAGRAM



Screened Cable

- Wire 1 to RED = RED
BLU = BLUE
- Wire 2 to YEL = YELLOW
BLK = BLACK
- Wire 3 to WHT = WHITE
BRN = BROWN
- Wire G/Y to ORG = ORANGE
GRN = GREEN

G/Y = Green and Yellow

4 core 0.5mm screened cable
Product Code: 4_Core_0.5mm_7Amp

WARNING

NEVER Disconnect stepper from Driver while power is switched ON as output Mosfets will be damaged. Do not use fuses or isolation switches between Driver and Stepper as disconnection arks can damage output Mosfets

See Page 3

PSU
5V Regulated
>500mA
Or PC USB Power
GND VCC

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P1 P17 P16 +5V VCC GND
P1 P3 P2 +5V VCC GND
P1 P5 P4 +5V VCC GND
P1 P7 P6 +5V VCC GND
P1 P9 P8 ENABLE DIRECTION STEP
+ V IN
- NO RLY (Relay) +5V VCC GND
- NO

CWD556 Digital DSP Driver
Product Code: CWD556

STEP+ STEP- DIR+ DIR- GND- VCC+ A+ A- B+ B-

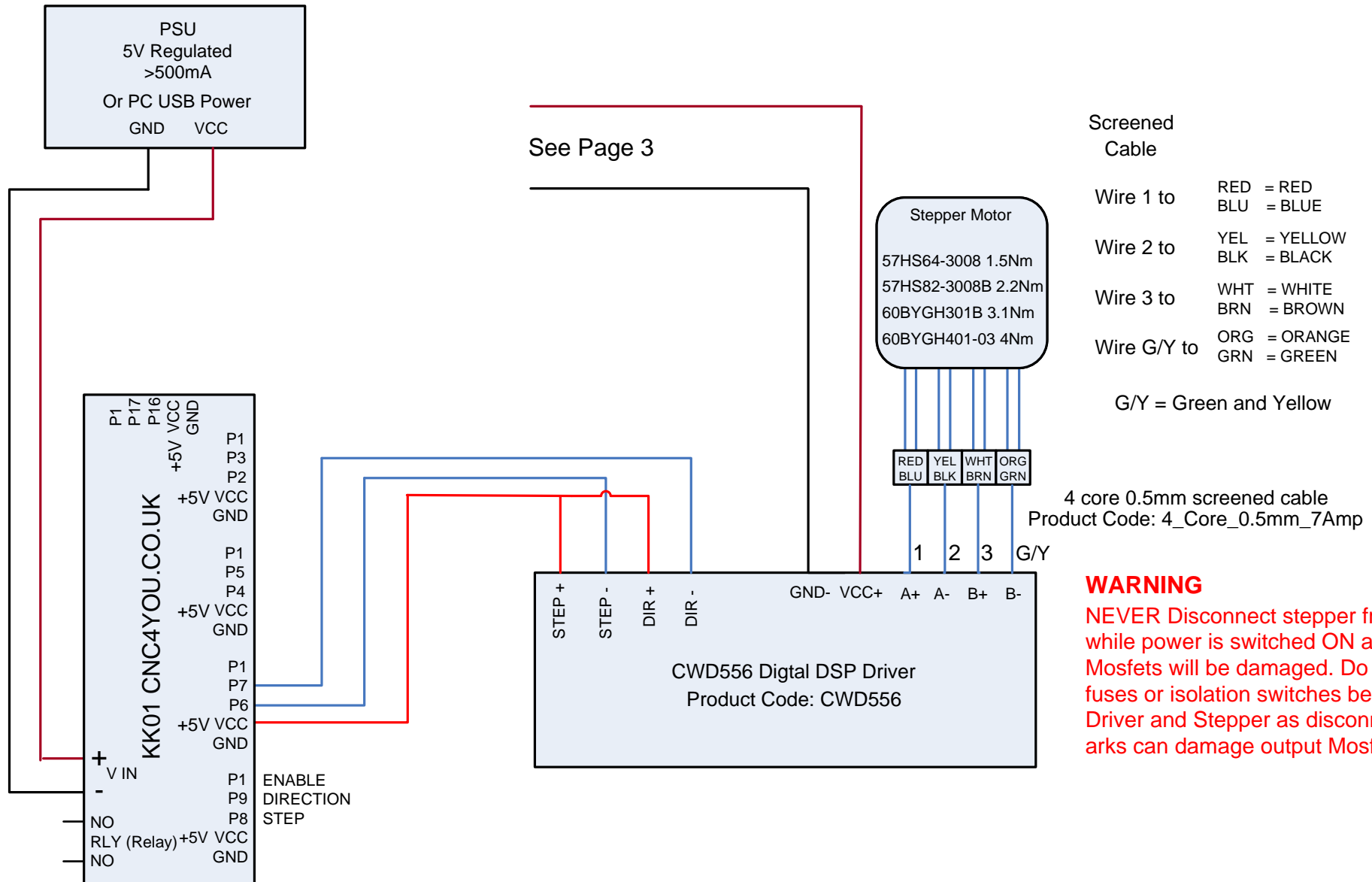
1 2 3 G/Y

Stepper Motor

57HS64-3008 1.5Nm
57HS82-3008B 2.2Nm
60BYGH301B 3.1Nm
60BYGH401-03 4Nm

RED YEL WHT ORG
BLU BLK BRN GRN

Z AXIS WIRING DIAGRAM



See Page 3

Stepper Motor
57HS64-3008 1.5Nm
57HS82-3008B 2.2Nm
60BYGH301B 3.1Nm
60BYGH401-03 4Nm

RED YEL WHT ORG
BLU BLK BRN GRN

1 2 3 G/Y

STEP+ STEP- DIR+ DIR- GND- VCC+ A+ A- B+ B-
CWD556 Digital DSP Driver
Product Code: CWD556

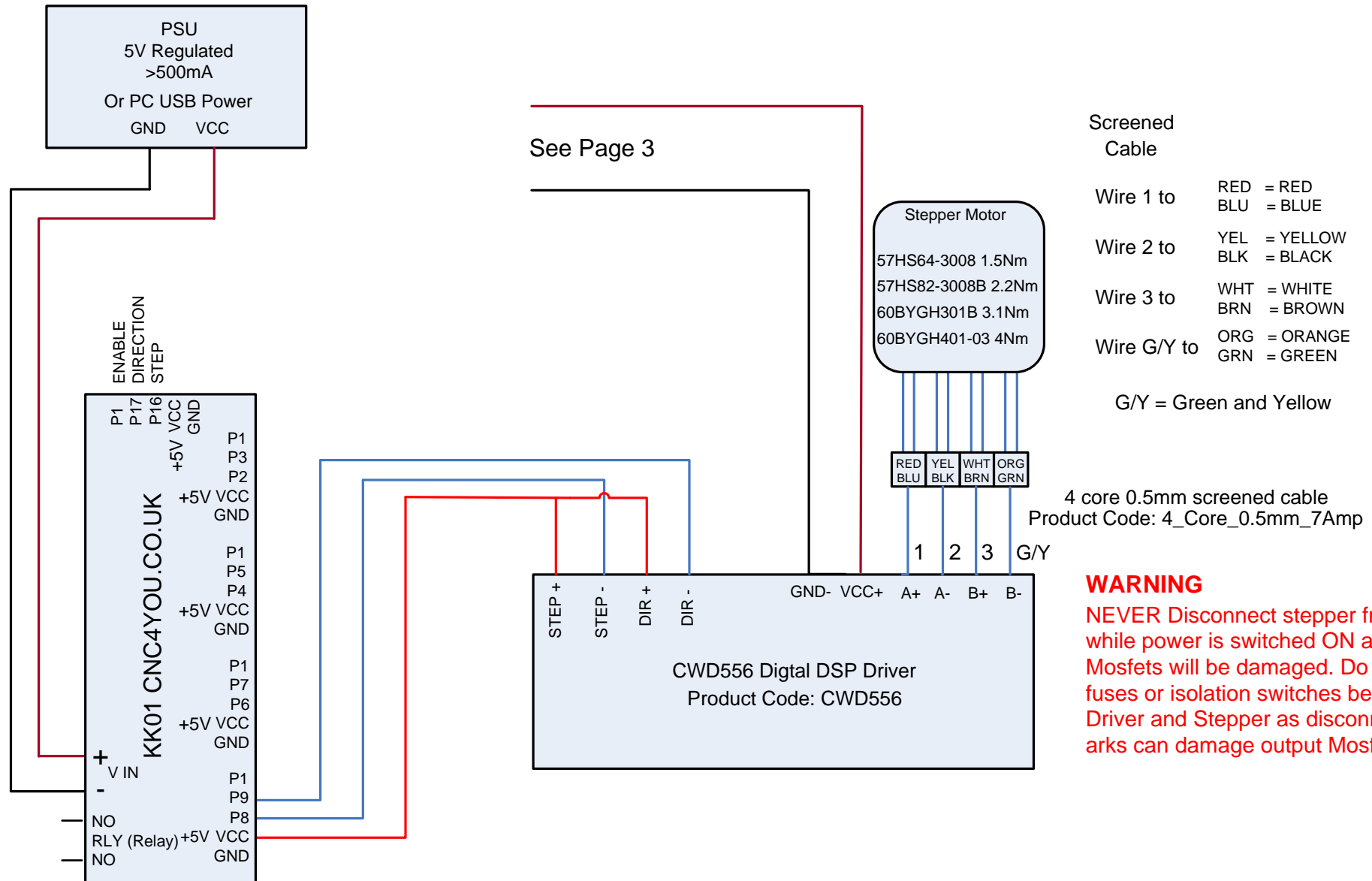
PSU
5V Regulated
>500mA
Or PC USB Power
GND VCC

P17 P16 P16+5V VCC GND
P1 P3 P2 P5 P4 P4+5V VCC GND
P1 P7 P6 P6+5V VCC GND
P1 P9 P8 P8+5V VCC GND
V IN
NO RLY (Relay) +5V VCC GND
NO

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ENABLE DIRECTION STEP

A AXIS WIRING DIAGRAM



See Page 3

Screened Cable

- Wire 1 to RED = RED
BLU = BLUE
- Wire 2 to YEL = YELLOW
BLK = BLACK
- Wire 3 to WHT = WHITE
BRN = BROWN
- Wire G/Y to ORG = ORANGE
GRN = GREEN

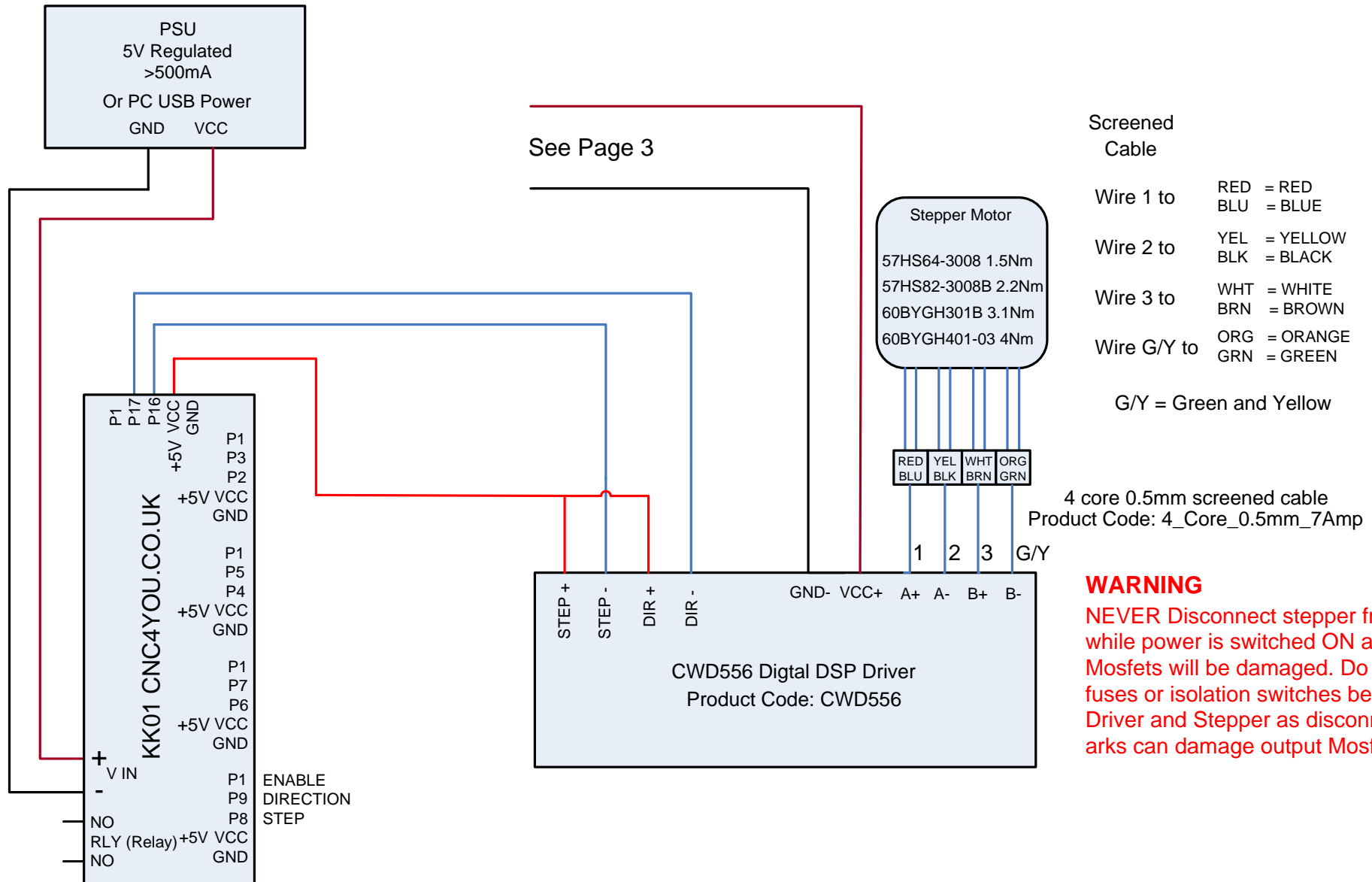
G/Y = Green and Yellow

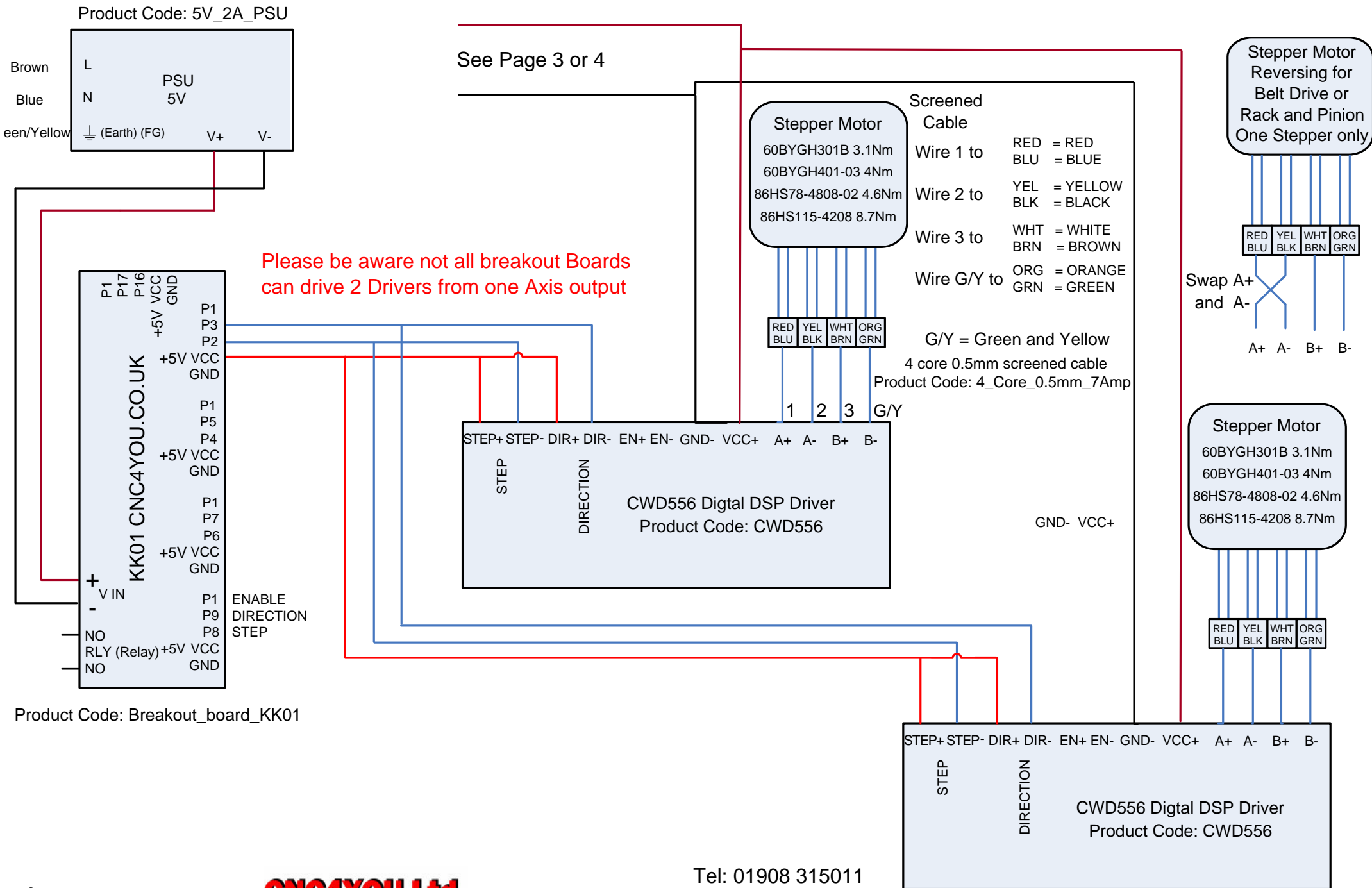
4 core 0.5mm screened cable
Product Code: 4_Core_0.5mm_7Amp

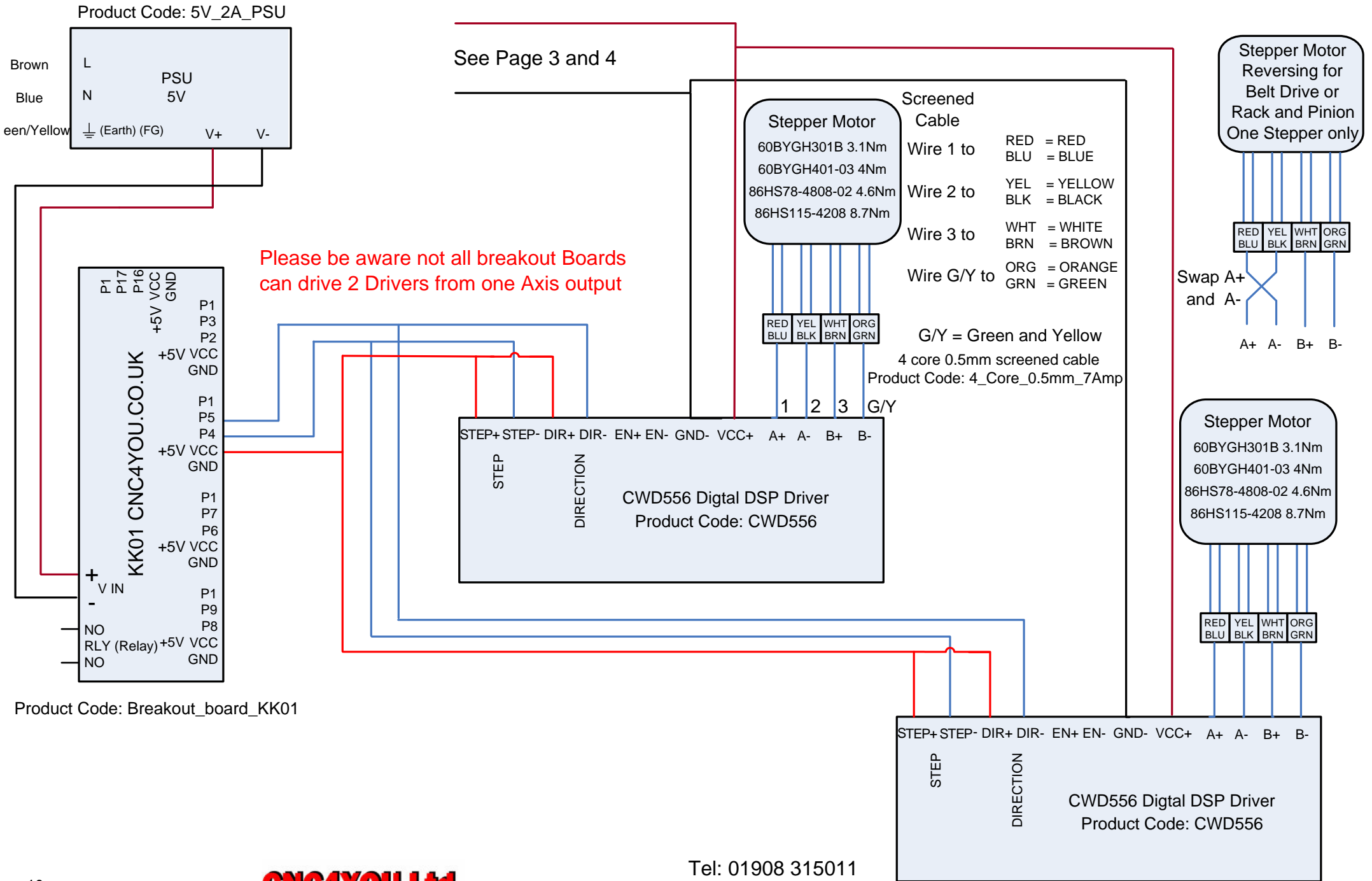
WARNING

NEVER Disconnect stepper from Driver while power is switched ON as output Mosfets will be damaged. Do not use fuses or isolation switches between Driver and Stepper as disconnection arks can damage output Mosfets

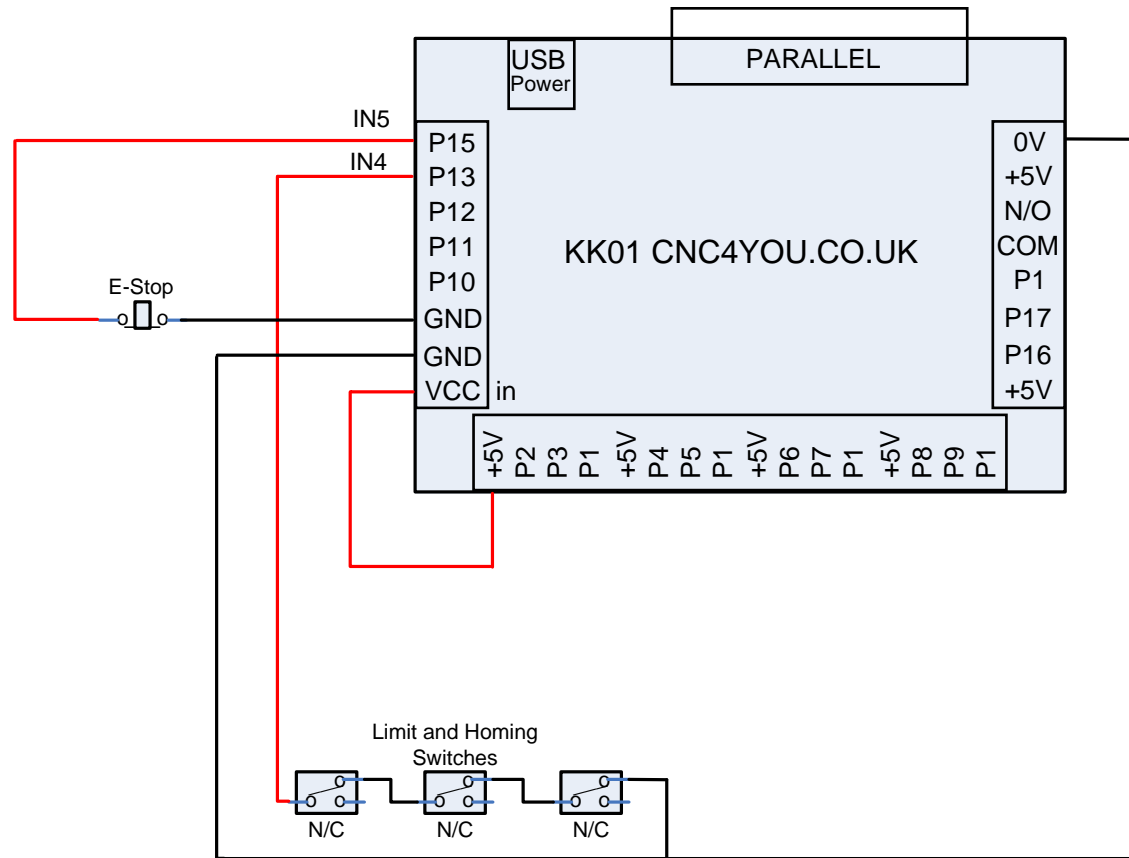
B AXIS WIRING DIAGRAM





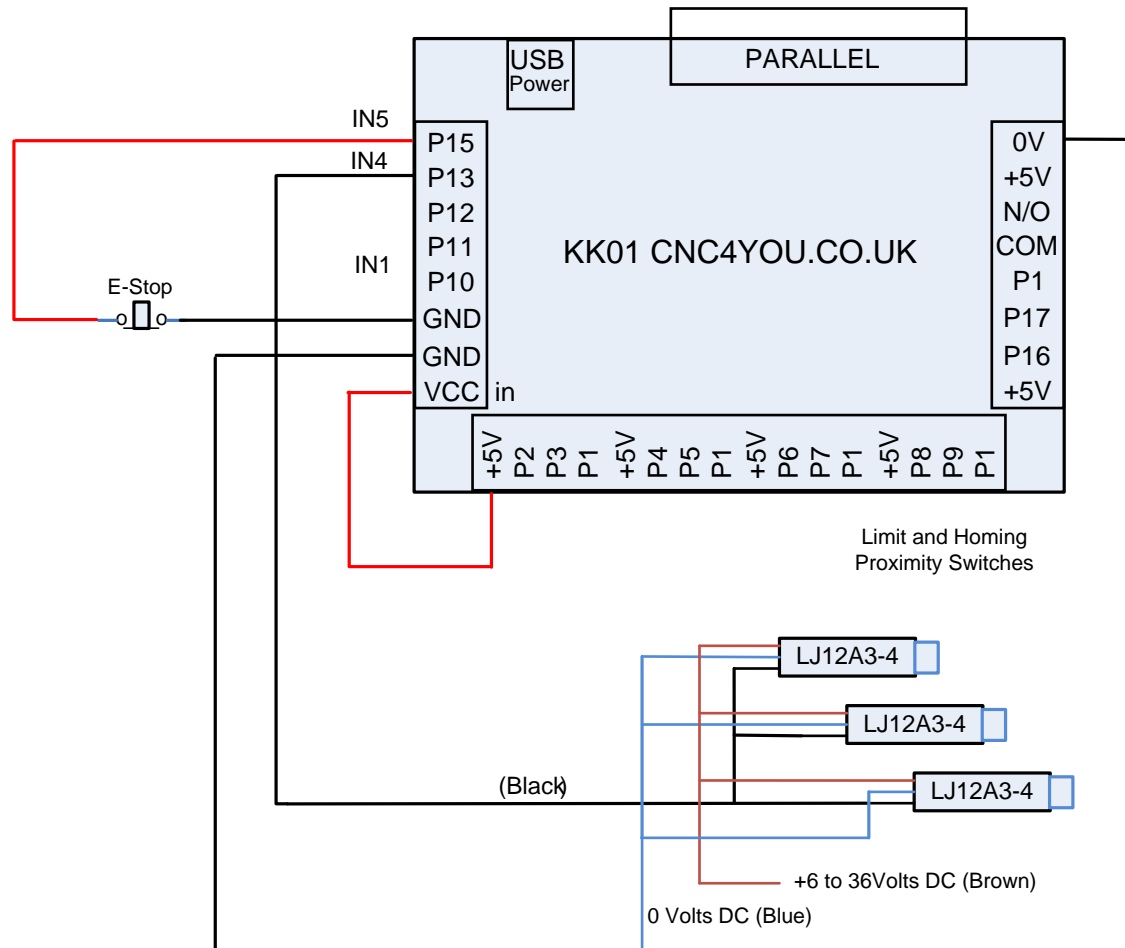


INPUTS WIRING DIAGRAM E-STOP & LIMITS / HOMING

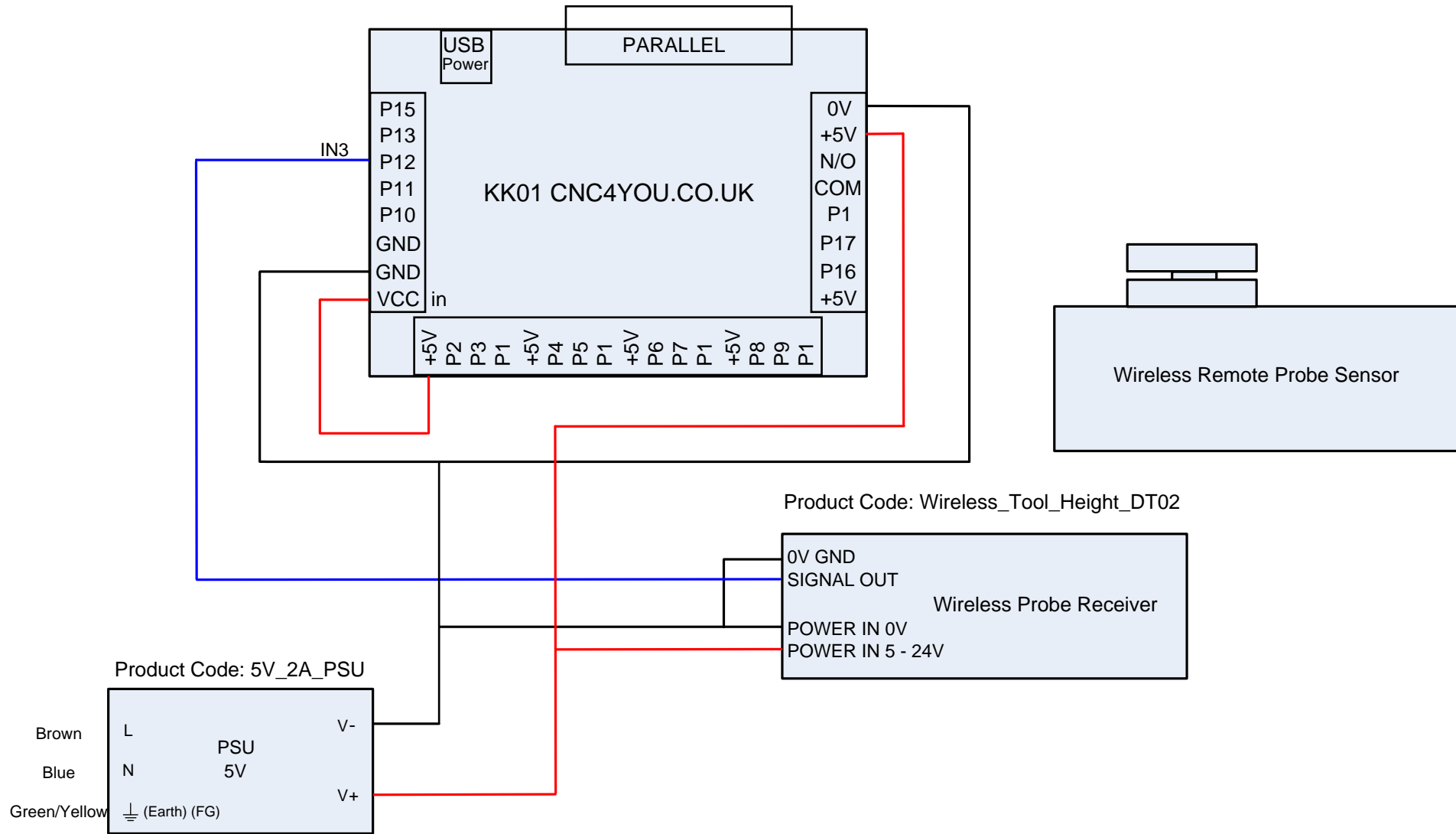


N/C Normal Closed Contact

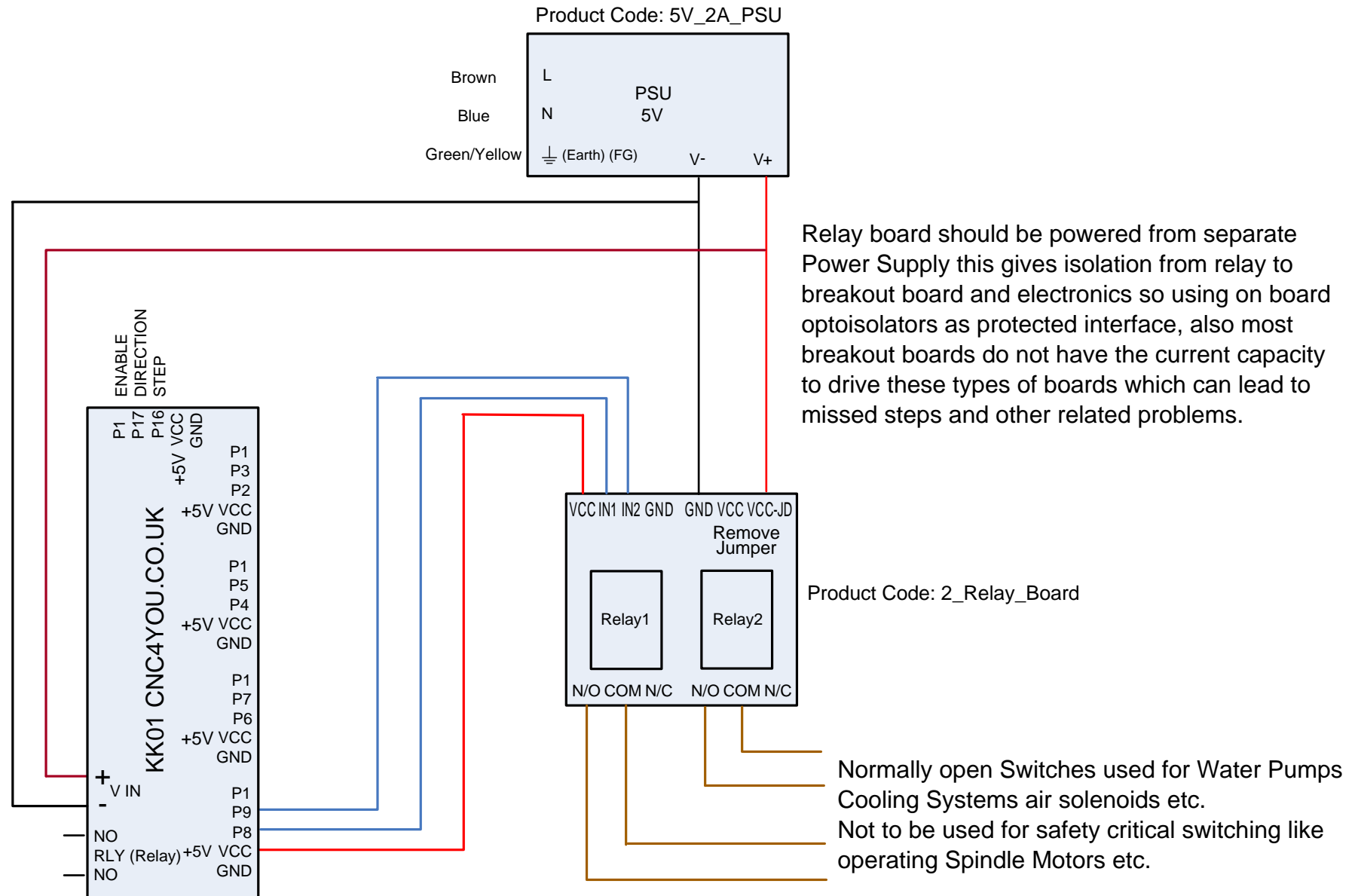
INPUTS WIRING DIAGRAM E-STOP & LIMITS / HOMING PROXIMITY SWITCH LJ12A3-4



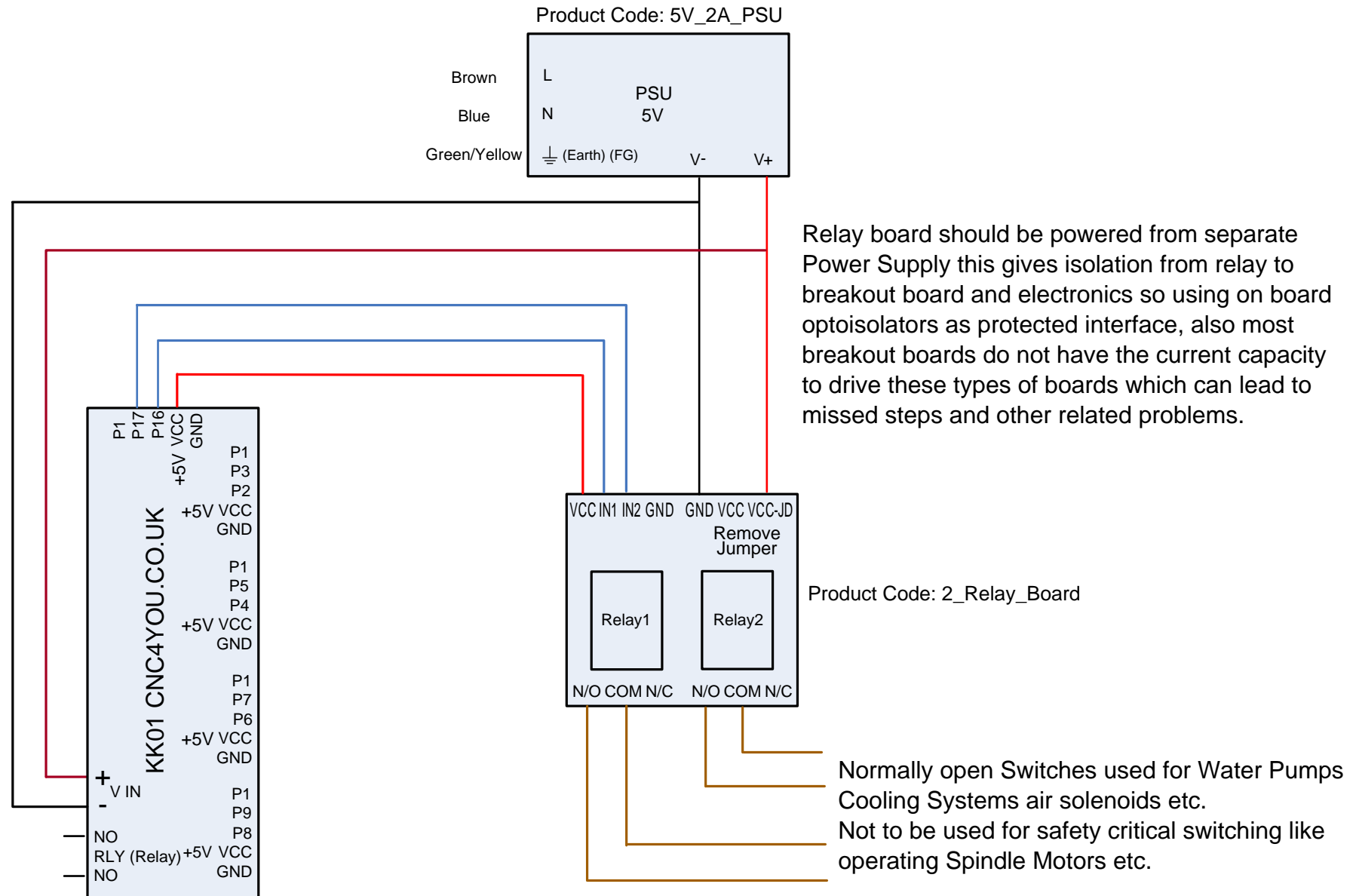
INPUTS WIRING DIAGRAM TOUCH PROBE



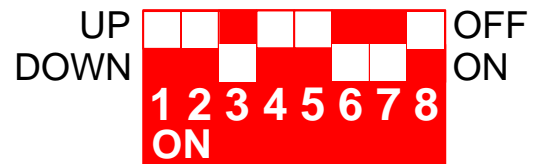
RELAY BOARD WIRING



RELAY BOARD WIRING



DIP SWITCH CURRENT SETTING



3.8 Amps
Half Current
1/10th Microstep

Use this setting for 4Nm Stepper



4.3 Amps
Half Current
1/10th Microstep

Use this setting for 3.1Nm Stepper

Please check
CWD556
Datasheet for
other options

Digital Stepper Driver CWD556 CNC4YOU.co.uk

Current Table

SW1	SW2	SW3	Current(A)
off	off	off	1.5
on	off	off	2.1
off	on	off	2.7
on	on	off	3.2
off	off	on	3.8
on	off	on	4.3
off	on	on	4.9
on	on	on	5.6

SW4: off=Half Current; on=Full Current

Microstep Table

SW5	SW6	SW7	SW8	Microstep
on	on	on	on	2
off	on	on	on	4
on	off	on	on	8
off	off	on	on	16
on	on	off	on	32
off	on	off	on	64
on	off	off	on	128
off	off	off	on	256
on	on	on	off	5
off	on	on	off	10
on	off	on	off	20
off	off	on	off	25
on	on	off	off	40
off	on	off	off	50
on	off	off	off	100
off	off	off	off	200

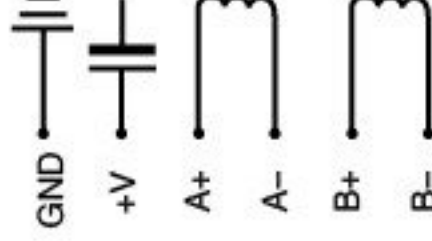
Vdc:+24V~+50V



PWR/ALARM



SW8
SW7
SW6
SW5
SW4
SW3
SW2
SW1



MACH 3 SOFTWARE SETUP

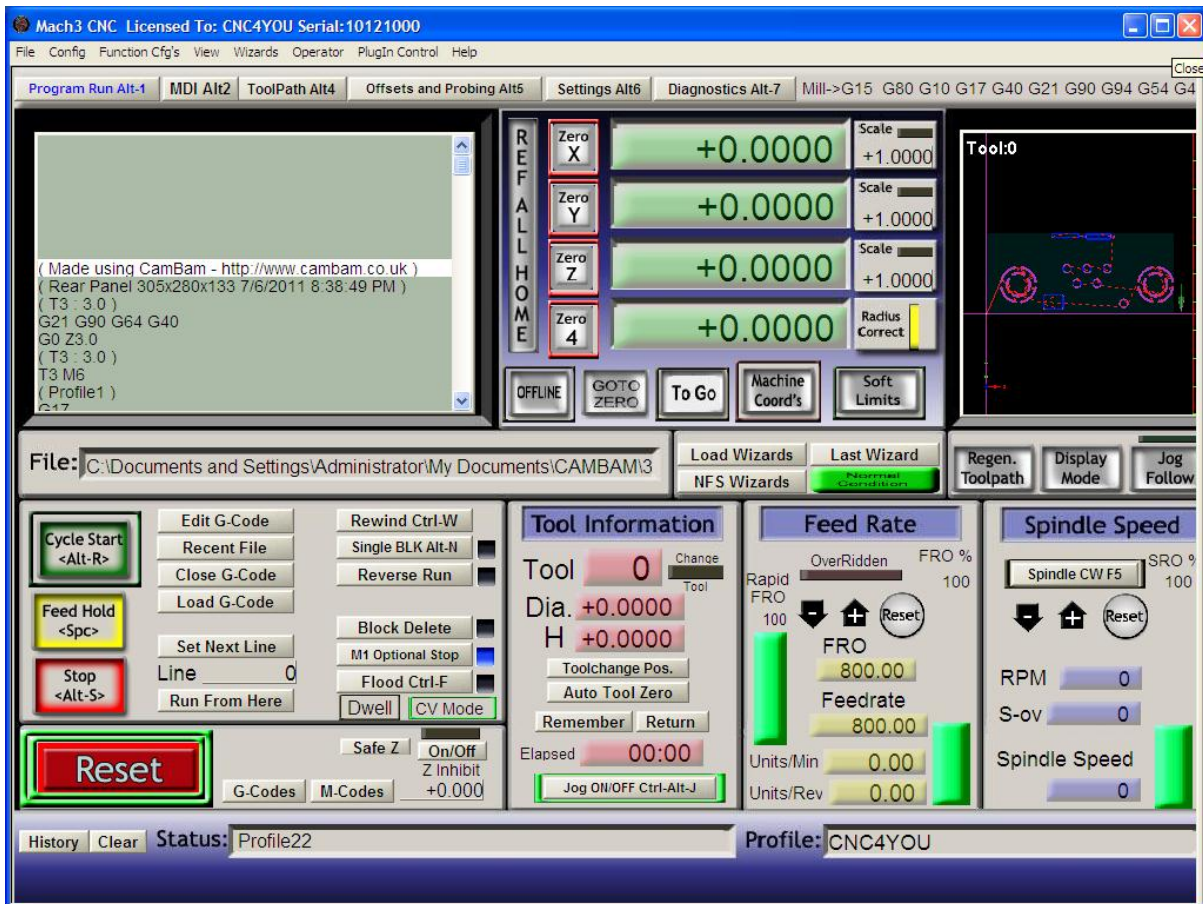
If you haven't already installed Mach3 software Download and install Mach3 software from the following link unless you are an experienced user please only download Lockdown Version.

<http://www.machsupport.com/downloads.php>

After download is complete please run or install software and follow all onscreen prompts once installation is complete please restart your PC to allow drivers to be registered.

Place your licence file in the following folder if default installation has been used or select folder location you have selected on installation. C:\Mach3 is default location

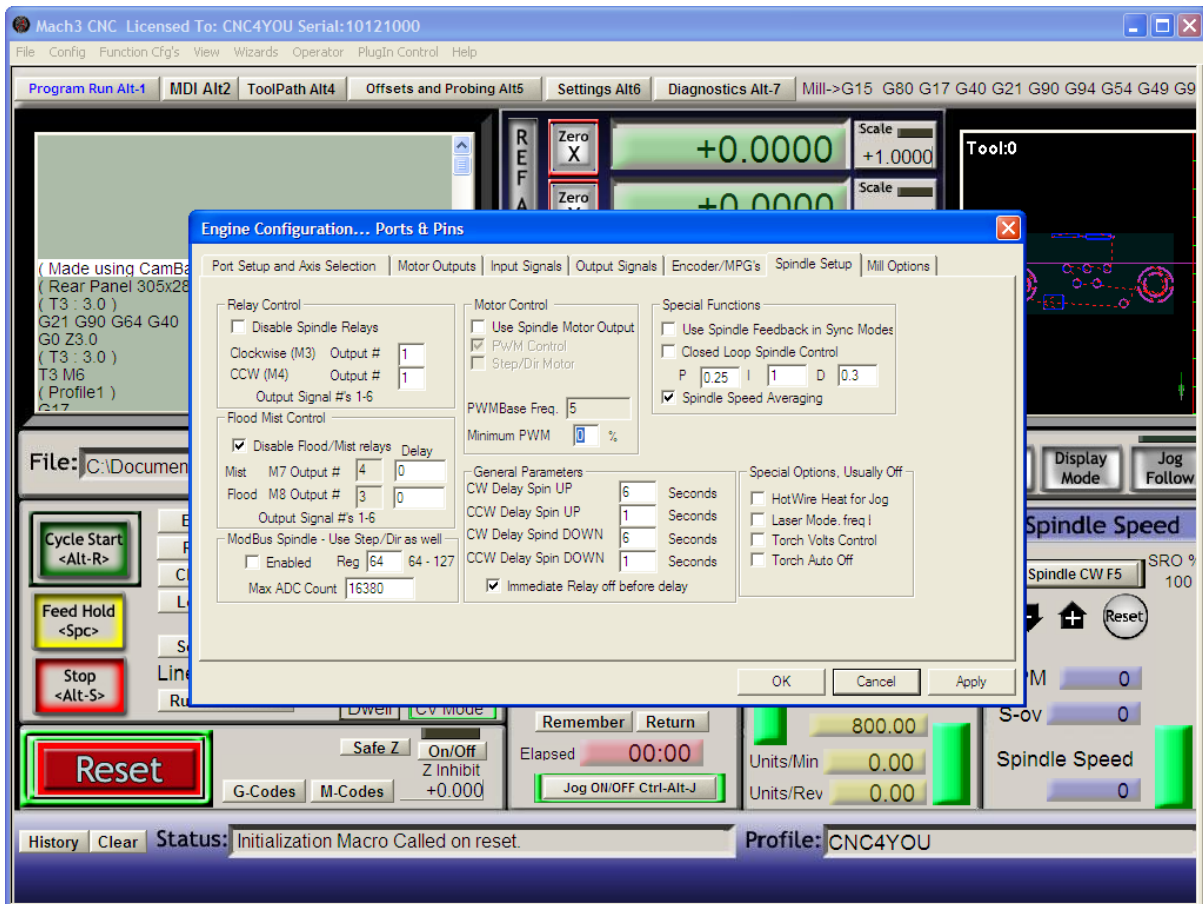
Open Mach 3 software and you should see a screen similar to the one below but with your licence name or Demo either way you can setup and run Mach3 but in Demo mode you are restricted to 500 lines for milling.



Notes _____

Place mouse over Spindle Setup tab and click mouse button to select the screen below will appear allowing you to set your Spindle settings. If the previous settings have been entered for outputs then we can set our spindle to switch on automatically and also turn off under Mach3 control.

Make sure Disable Spindle Relays is unchecked and at least M3 Clockwise is set to output# 1 as shown below. CW Delay Spin UP is set to 6 seconds in this example which will Mach3 wait 6 seconds before starting to cut to allow spindle to be upto speed, this value will vary with your own setup so please set correspondingly. CW Delay Spind DOWN is set to value to allow spinle to come to a stop. Immediate Relay off before delay check box is ticked to switch relay off before delay starts rather than after. Once you have entered these values please press **Apply** to set these values.



Notes _____

