CNC4PC

Integration Solutions for CNC Projects

USER'S MANUAL VER.1

C25XP- MULTIFUNCTION CNC BOARD Rev. 3

NOVEMBER 2020

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1.0 FEATURES

- **Ships with the Ethernet Smoot Stepper Motion Controller installed.**
- **Built-in PWM-Based Speed Control and Two Built-in Electromechanical Relays with NO and NC positions for spindle control.**
- **The system monitors:**
  - **E-Stop**
  - **Safety Charge Pump.**
- **Electromechanical Relay with NO and NC positions for general purpose (Port_2 16 or 17, jumper-selectable).**
- **Microcontroller based SCHP.**
- **Optoisolated inputs working at 5-24VDC.**
- **Uses a single +10 to +30VDC to power the system. It generates the isolated voltage for the spindle control circuit and +5vdc for circuits using TTL logic.**
- **Status LEDs on all input and Output connections.**
- **DIN Rail mountable.**
- **Open Collector Outputs pins 1, 14, 16, 17.**
- **Screw-On connections for all terminals.**
- **Status LEDs for enable.**
- **Available installers and configuration files that configure all the functions of the board.**

2.0 I/O SPECIFICATIONS

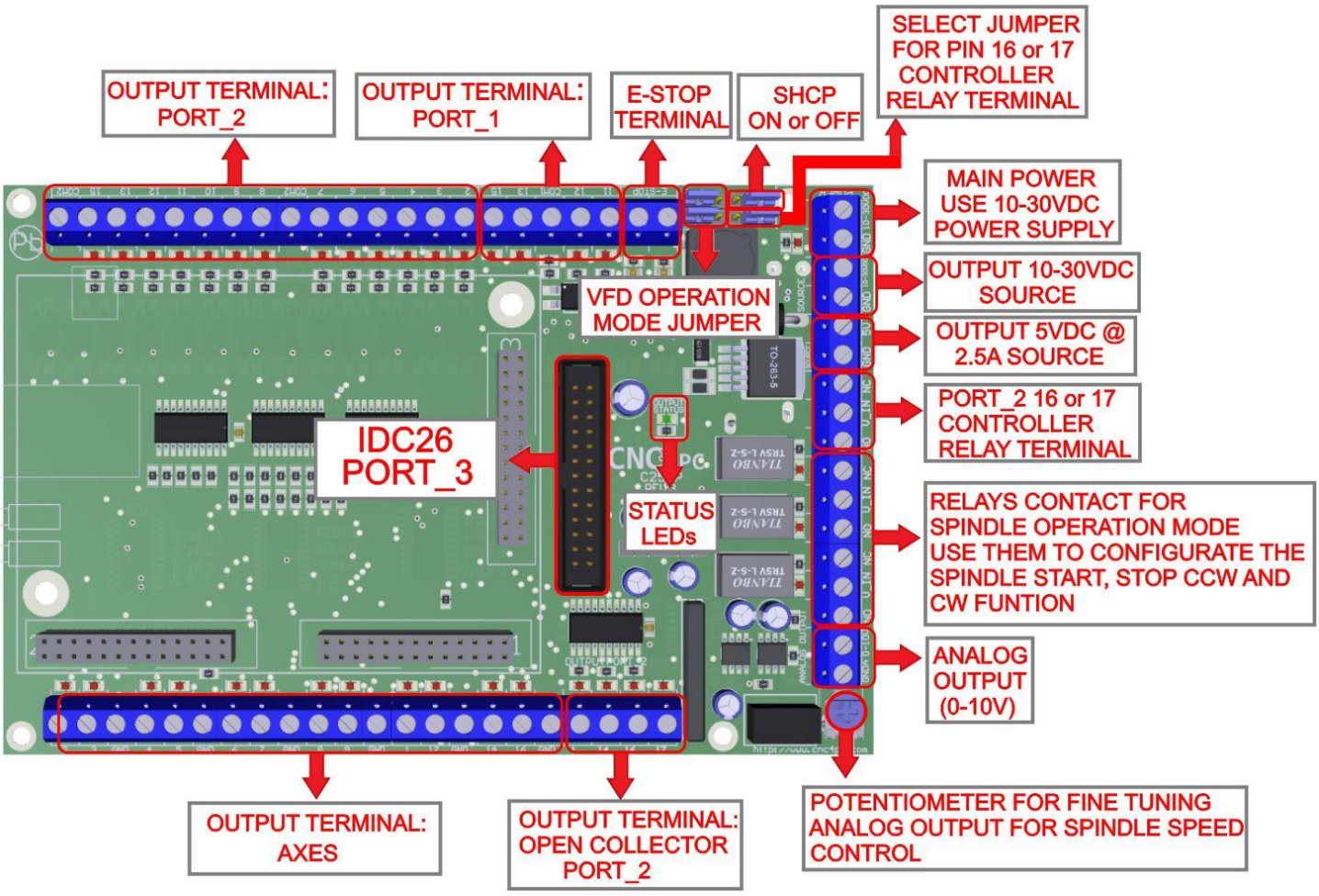
PINS	PORT1	PORT2	PORT3	TOTAL
INPUT	5	13	13	31
OUTPUT	12	4	4	20
TOTAL	17	17	17	51

OPTOISOLATED DIGITAL INPUT TTL SPECIFICATIONS	
On-state voltage range	5 to 24VDC
Maximum off-state voltage	0.8V
Typical signal delay	2.8uS

DIGITAL OUTPUT TTL SPECIFICATIONS	
Maximum output voltage	5VDC
Maximum output current	50mA
Maximum off-state voltage	0.44 V
Maximum supported frequency	400KHz
Typical signal delay	10nS
Time of transition to high impedance state	12 s*

OPEN COLLECTOR OUTPUT SPECIFICATIONS	
Maximum output voltage	60VDC
Maximum output current	2A
Typical signal delay	0.5 µS

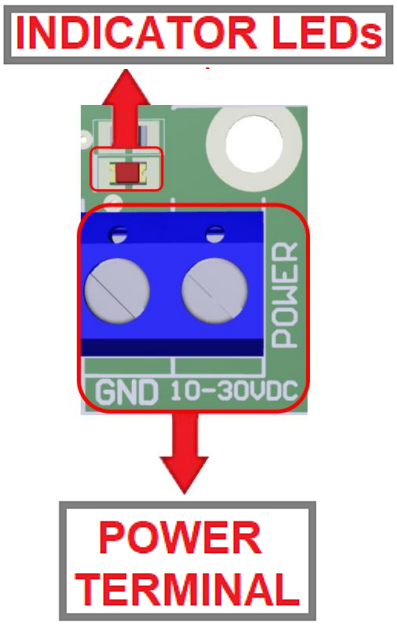
3.0 BOARD DESCRIPTION



4.0 POWER TERMINALS AND CONFIGURATION

4.1 Power terminal

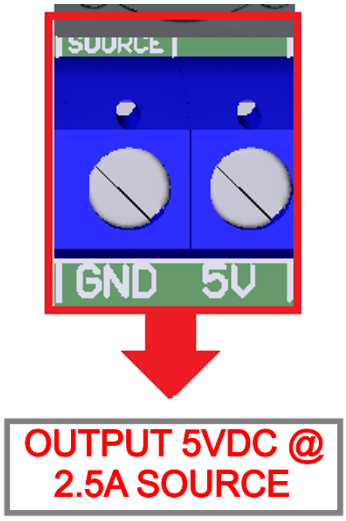
Regulated +10VDC or +30VDC is required to power this board.



WARNING

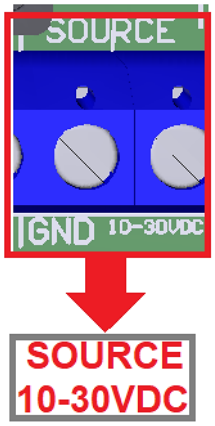
Check the polarity and voltage of the external power source and connect the 10VDC to 30VDC and GND. Overvoltage or reverse-polarity power applied to these terminals can cause damage to the board, and/or the power source

4.2 Source Output 5VDC



4.3 Source Output 10-30VDC

10-30VDC can be sourced to sensors or other cards requiring it.

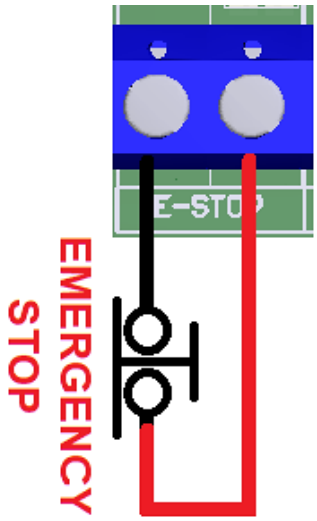


5.0 PORT_3 ESS

PORT_3 ESS	
Pin	**Function**
P_1	OUTPUT
P_2	IN/OUT
P_3	IN/OUT
P_4	IN/OUT
P_5	IN/OUT
P_6	IN/OUT
P_7	IN/OUT
P_8	IN/OUT
P_9	IN/OUT
P_10	INPUT
P_11	INPUT
P_12	INPUT
P_13	INPUT
P_14	OUTPUT
P_15	INPUT
P_16	OUTPUT
P_17	OUTPUT
P_18/25	GND
P_26	5V

6.0 E-STOP TERMINAL (24V)

Connect an E-STOP push button as is shown in the below images.



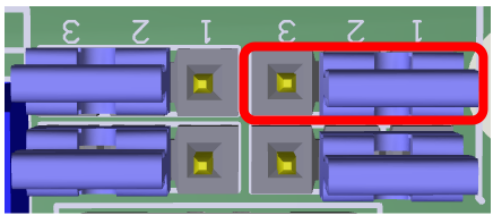
Pin 10 port 1 is used for E-Stop. Since this board controls the enable line, and the enable line is the one responsible for notifying the controller of the e-stop condition, the user does not have a direct access to the pin itself, just to the e-stop terminal on the board. The E-Stop terminal is tied to the enable line and will trigger the e-stop. A fault or E-Stop triggers a low for 5 seconds to notify the controller of the fault condition, then resets to high again

7.0 CONFIGURATION JUMPERS

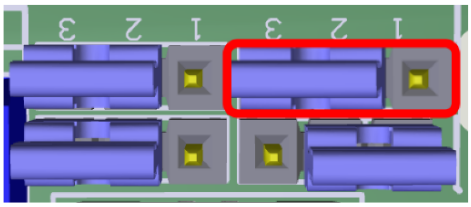
7.1 Selecting the SCHP operation mode

The Safety Charge Pump can be activated or deactivated depending on the jumper position

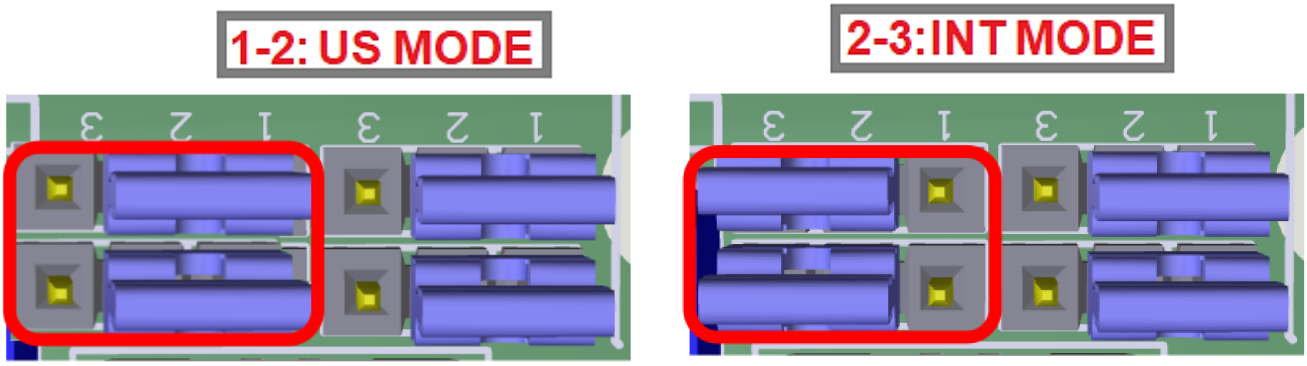
1-2: DISABLE



2-3:ENABLE



7.2 Configuration jumper mode US or INT

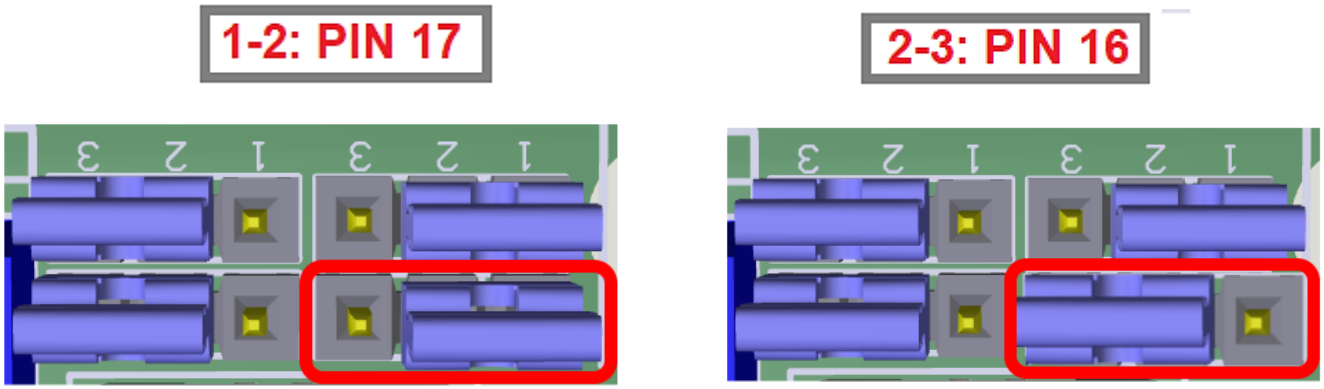


For the Variable speed control go to
http://cnc4pc.com/Tech_Docs/VARIABLE_SPEED_CONTROL.pdf

For Configure the control software go to
http://cnc4pc.com/Tech_Docs/CONFIGURATION_OF_CONTROL_SOFWARE.pdf

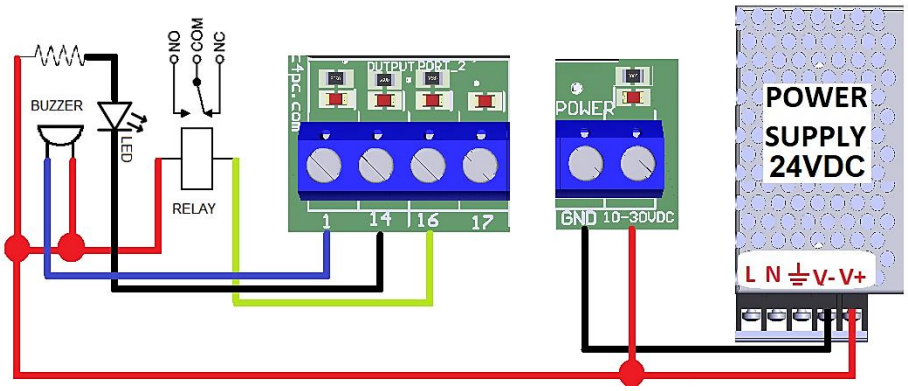
For Replacing Potentiometer go to
http://cnc4pc.com/Tech_Docs/Replacing%20a%20Potentiometer.pdf

7.3 Configuration jumper pin 16 or 17

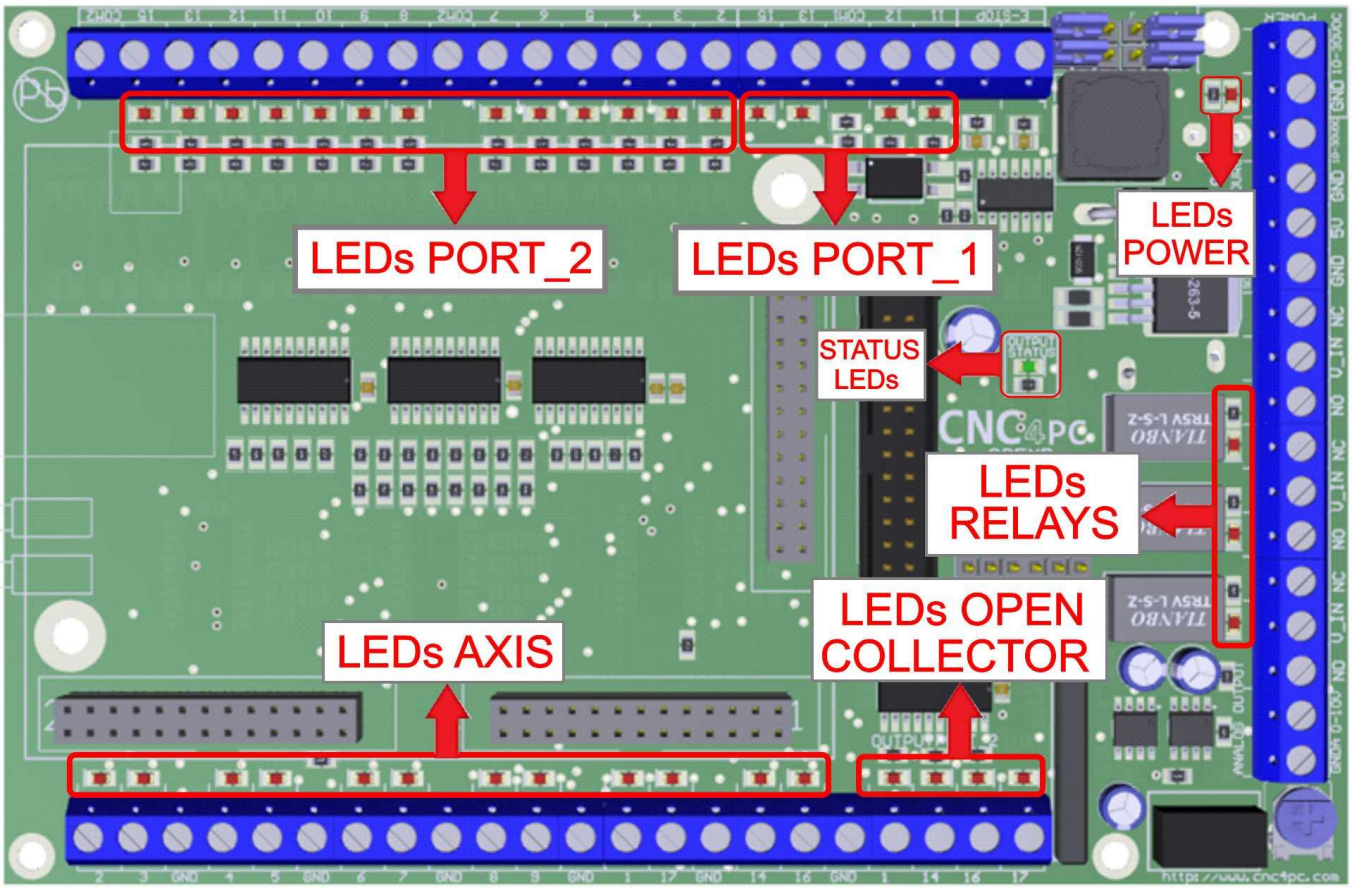


1.0 GENERAL PURPOSE OUTPUT TERMINALS

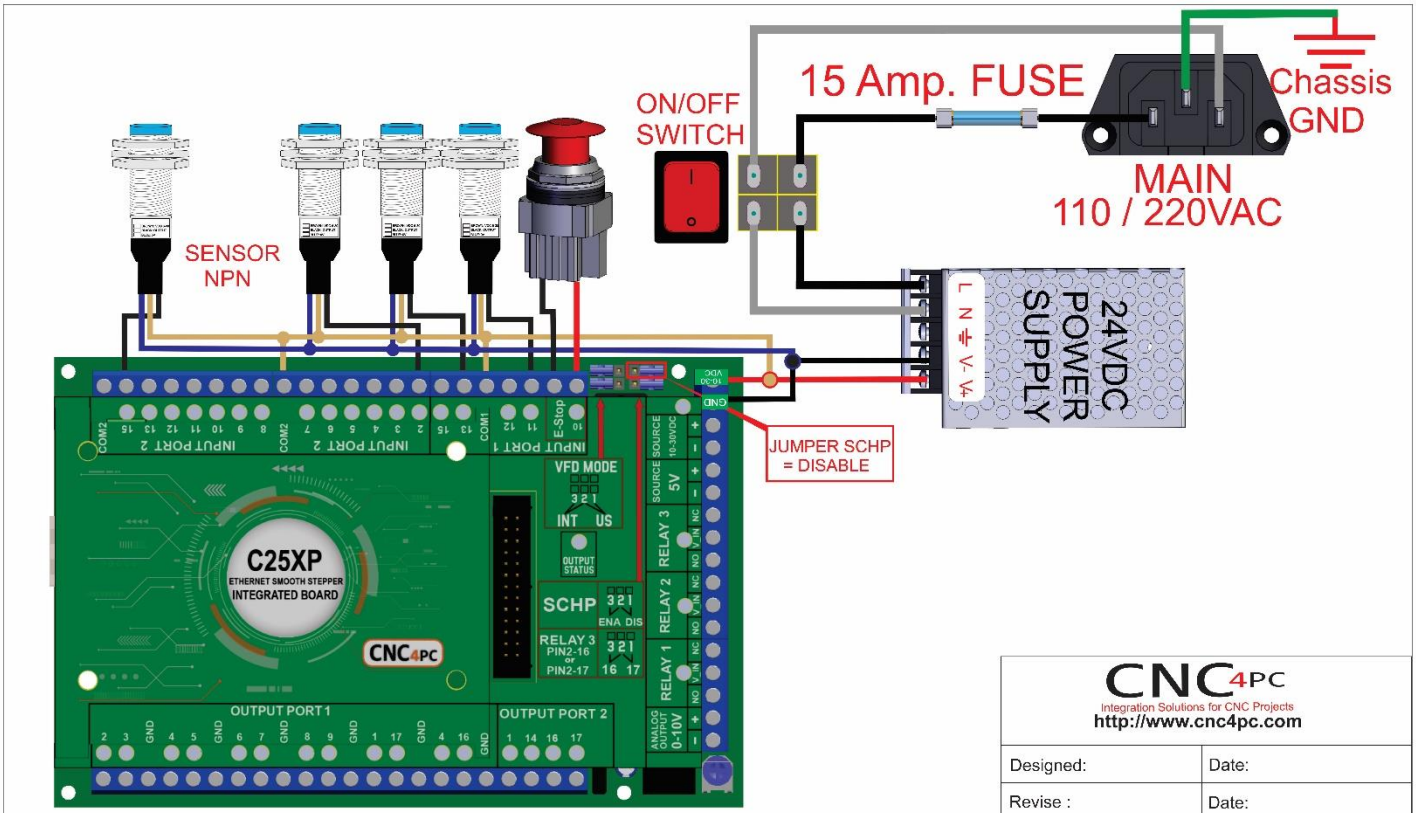
Open Collector Outputs Sample Wiring



2.0 LEDs



3.0 WIRING SAMPLE INPUT PORT_1 AND PORT_2



Note :
This wiring is just to illustrate a sample product application.
Specific wiring may vary from system to system.
It is the users responsibility to implement it correctly.

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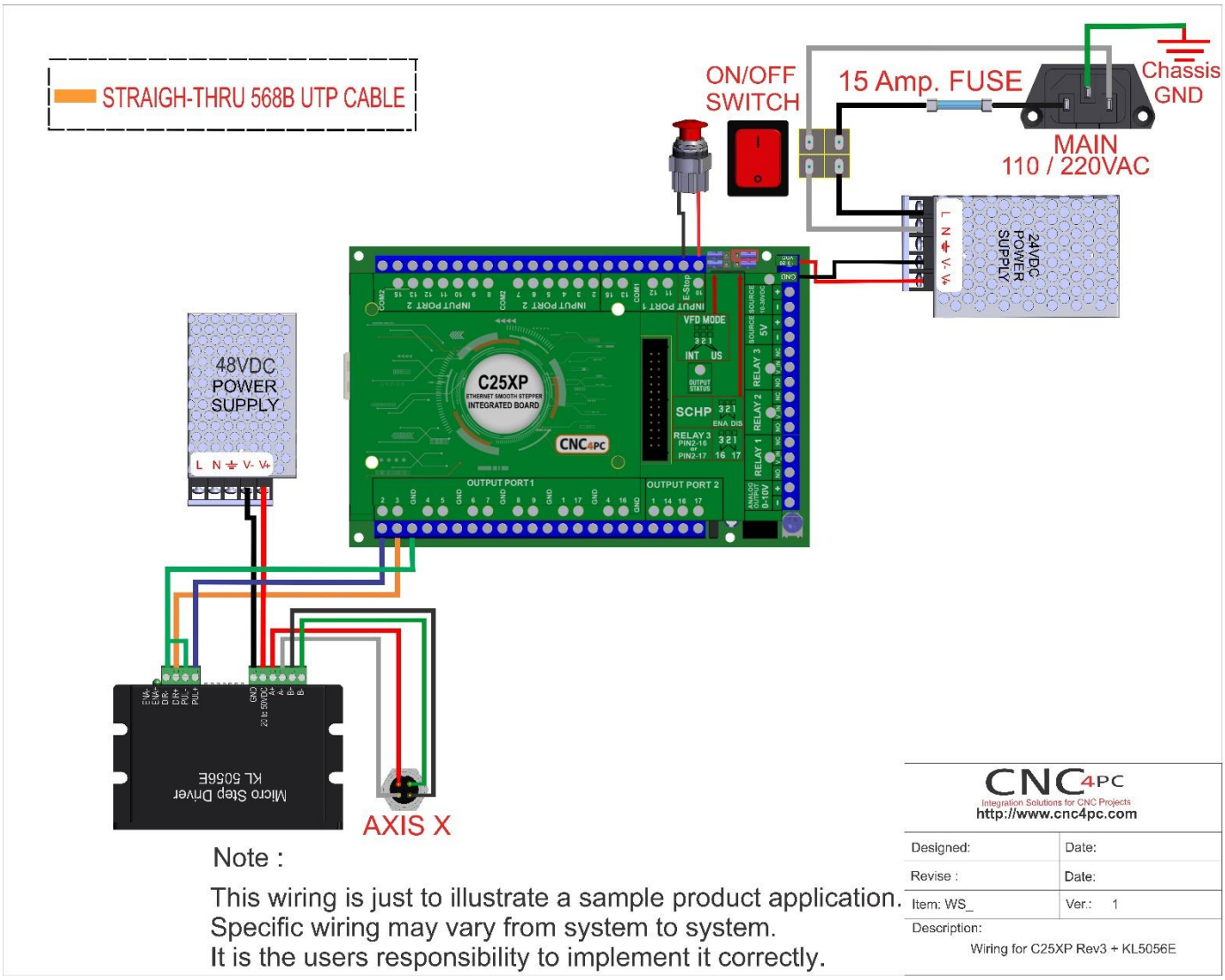
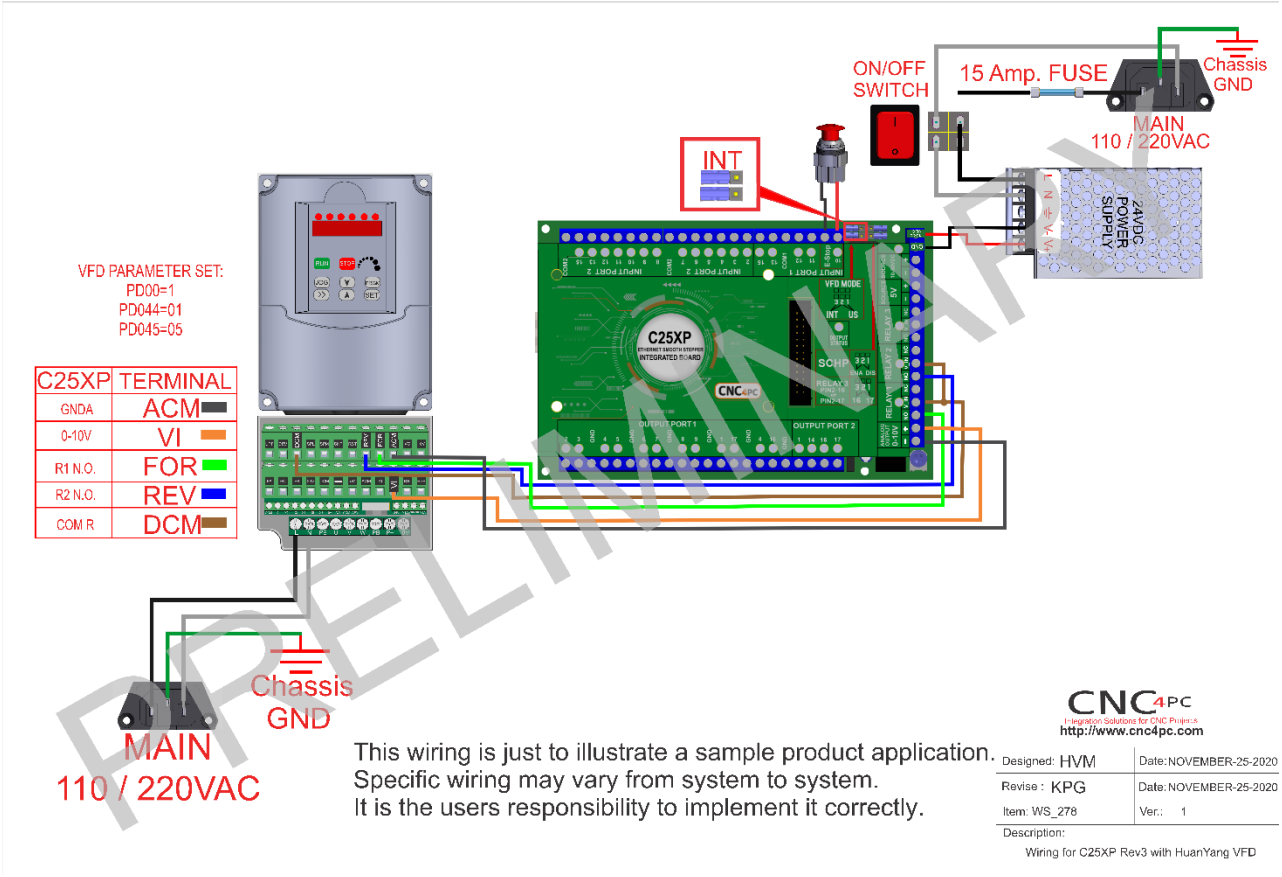
Designed:	Date:
Revise :	Date:
Item: WS_	Ver.: 1
Description: Wiring for C25XP + LIMIT NPN	

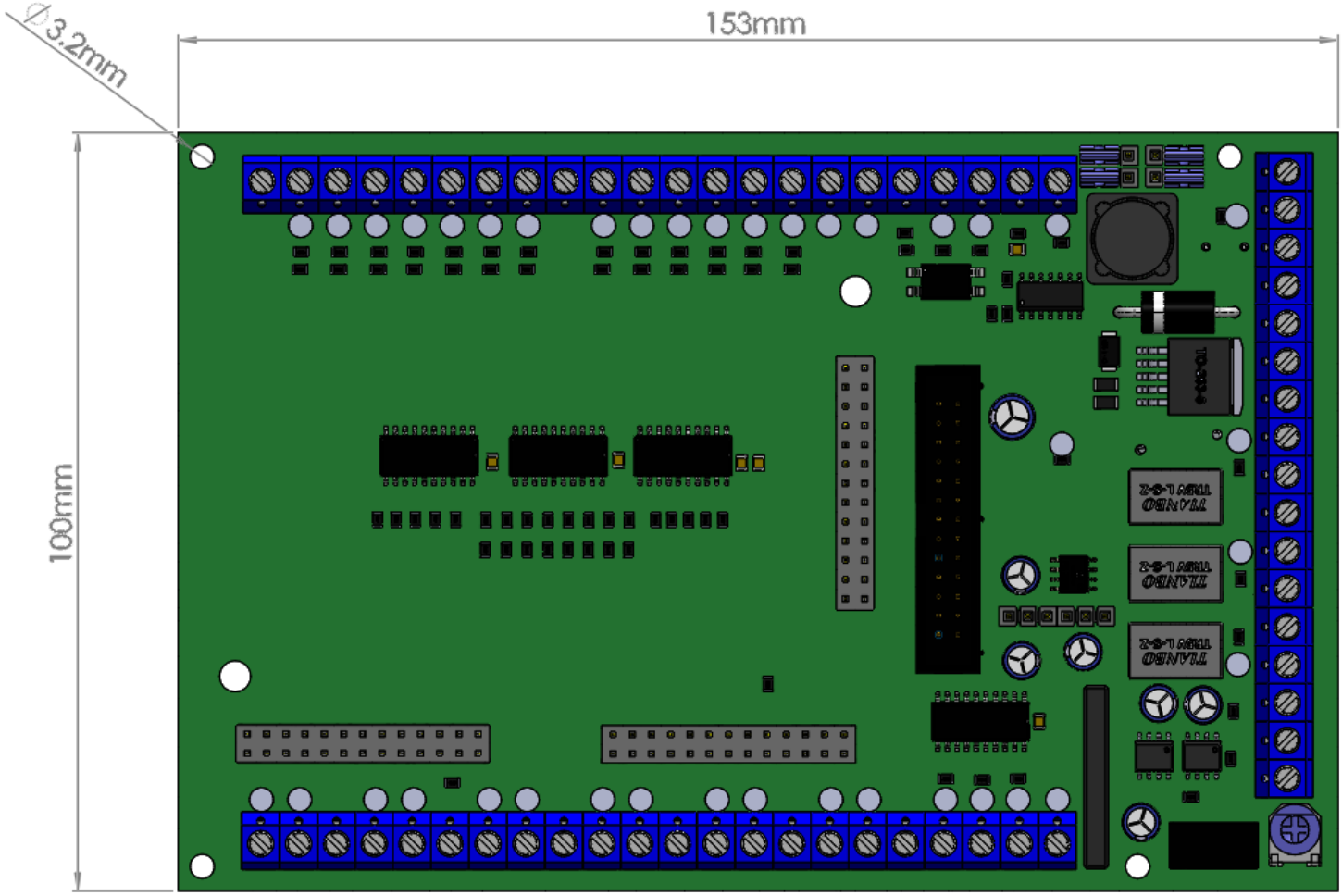
4.0 WIRING SAMPLE AXI



5.0 WIRING SAMPLE VFD



6.0 DIMENSIONS



All dimensions are in Millimeters.

Disclaimer:

Use caution. CNC machines can be dangerous machines. Neither DUNCAN USA, LLC nor Arturo Duncan are liable for any accidents resulting from the improper use of these devices. This product is not a fail-safe device and it should not be used in life support systems or in other devices where its failure or possible erratic operation could cause property damage, bodily injury or loss of life.