Mains & Power Schematic

File: PowerSchematic.kicad_sch

IO

File: IO.kicad_sch

E-Stop, Drive Error, External Error

File: EStop.kicad_sch

UI_Panel

File: UI_Panel.kicad_sch

ESP32_DevKitC10

File: ESP32_DevKitC10.kicad_sch

CNC76010

File: CNC76010.kicad_sch

to do:

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Sheet: /
File: ElectricalSchematic.kicad_sch

Title: CNC refit Imes GFY98

Size: A3	Date: 2025-05-10	Rev: 1.0
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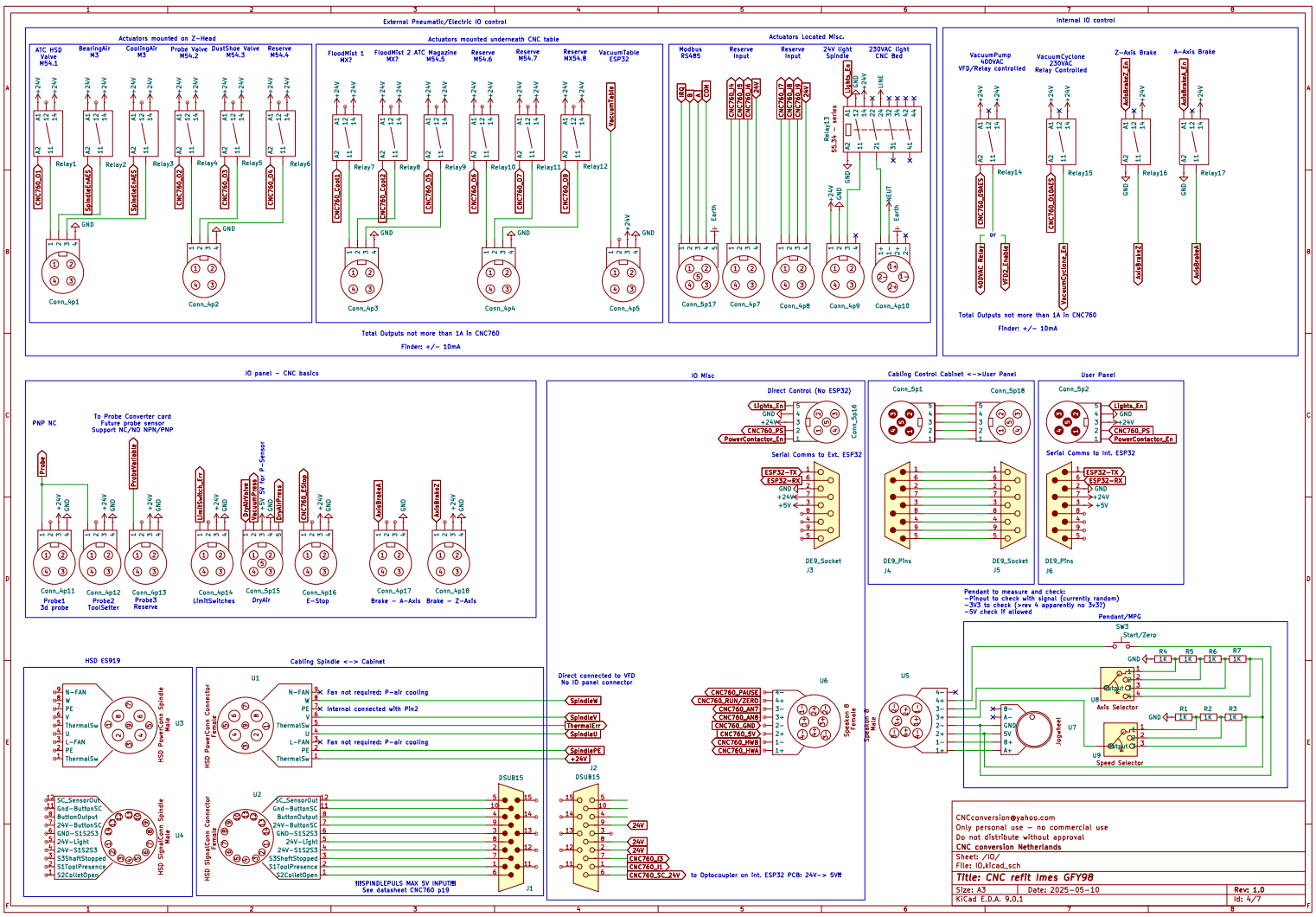
External Pneumatic/Electric IO control
Actuators mounted on Z-Head
ATC HSD Valve M54.1
BearingAir M3
CoolingAir M3
Probe Valve M54.2
DustShoe Valve M54.3
Reserve M54.4
Relay1
Relay2
Relay3
Relay4
Relay5
Relay6
CNC760_O1
SpindleEnABS
SpindleEnABS
CNC760_O2
CNC760_O3
CNC760_O4
Conn_4p1
Conn_4p2
Actuators mounted underneath CNC table
FloodMist 1 MX?
FloodMist 2 ATC Magazine M54.5
Reserve M54.6
Reserve M54.7
Reserve MX54.8
VacuumTable ESP32
Relay7
Relay8
Relay9
Relay10
Relay11
Relay12
CNC760_Out1
CNC760_Out2
CNC760_O5
CNC760_O6
CNC760_O7
CNC760_O8
VacuumTable
Conn_4p3
Conn_4p4
Conn_4p5
Actuators Located Misc.
Modbus RS485
Reserve Input
Reserve Input
24V Light Spindle
230VAC light CNC Bed
Relay13
55.34 - series
Lights_En
Earth
Conn_5p17
Conn_4p7
Conn_4p8
Conn_4p9
Conn_4p10
Total Outputs not more than 1A in CNC760
Finder: +/- 10mA
Internal IO control
VacuumPump 400VAC VFD/Relay controlled
VacuumCyclone 230VAC Relay Controlled
Z-Axis Brake
A-Axis Brake
Relay14
Relay15
Relay16
Relay17
CNC760_O9ABS
CNC760_O10ABS
AxisBrakeZ_En
AxisBrakeA_En
400VAC_Relay
VFD_Enable
VacuumCyclone_En
AxisBrakeZ
AxisBrakeA
Total Outputs not more than 1A in CNC760
Finder: +/- 10mA
IO panel - CNC basics
PNP NC
To Probe Converter card
Future probe sensor
Support NC/NO NPN/PNP
Probe
ProbeVariable
LimitSwArch_Err
DryAirVane
VacuumPress
DryAirPress
CNC760_ESstop
AxisBrakeA
AxisBrakeZ
Conn_4p11
Probe1 3d probe
Conn_4p12
Probe2 ToolSetter
Conn_4p13
Probe3 Reserve
Conn_4p14
LimitSwitches
Conn_5p15
DryAir
Conn_4p16
E-Stop
Conn_4p17
Brake - A-Axis
Conn_4p18
Brake - Z-Axis
IO Misc
Direct Control (No ESP32)
Lights_En
GND
+24VAC
CNC760_PS
PowerContactor_En
Conn_5p16
Serial Comms to Ext. ESP32
ESP32-TX
ESP32-RX
GND
+24VAC
+5V
DE9_Socket
J3
Cabling Control Cabinet <->User Panel
Conn_5p1
Conn_5p18
DE9_Plns
J4
DE9_Socket
J5
User Panel
Conn_5p2
Lights_En
GND
+24V
CNC760_PS
PowerContactor_En
Serial Comms to Int. ESP32
ESP32-TX
ESP32-RX
GND
+24V
+5V
DE9_Plns
J6
Pendant to measure and check:
-Pinout to check with signal (currently random)
-3V3 to check (>rev 4 apparently no 3v3?)
-5V check if allowed
Pendant/MPG
SW3
Start/Zero
R4
R5
R6
R7
1K
Encoder
Axis Selector
U8
R1
R2
R3
Speed Selector
U9
Joywheel
U7
U5
HSD ES919
U3
HSD PowerConn Spindle Male
N-FAN
W
PE
V
ThermalSw
U
L-FAN
PE
ThermalSw
U4
HSD SignalConn Spindle Male
SC_SensorOut
Gnd-ButtonSC
ButtonOutput
24V-ButtonSC
GND-S1S2S3
24V-Light
24V-S1S2S3
S3ShaftStopped
S1ToolPresence
S2ColletOpen
Cabling Spindle <-> Cabinet
U1
HSD PowerConn Connector Female
Fan not required: P-air cooling
Internal connected with Pin2
Fan not required: P-air cooling
U2
HSD SignalConn Connector Female
DSUB15
J1
!!!SPINDLEPULS MAX 5V INPUT!!!
See datasheet CNC760 p19
Direct connected to VFD
No IO panel connector
SpindleW
SpindleV
ThermalErr
SpindleU
SpindlePE
+24V
J2
24V
24V
CNC760_I3
CNC760_I1
CNC760_SC_24V
to Optocoupler on Int. ESP32 PCB: 24V-> 5V!!
U6
CNC760_PAUSE
CNC760_RUN/ZERO
CNC760_ANT
CNC760_ANB
CNC760_GND
CNC760_5V
CNC760_HWB
CNC760_HWA
Spindle B Female
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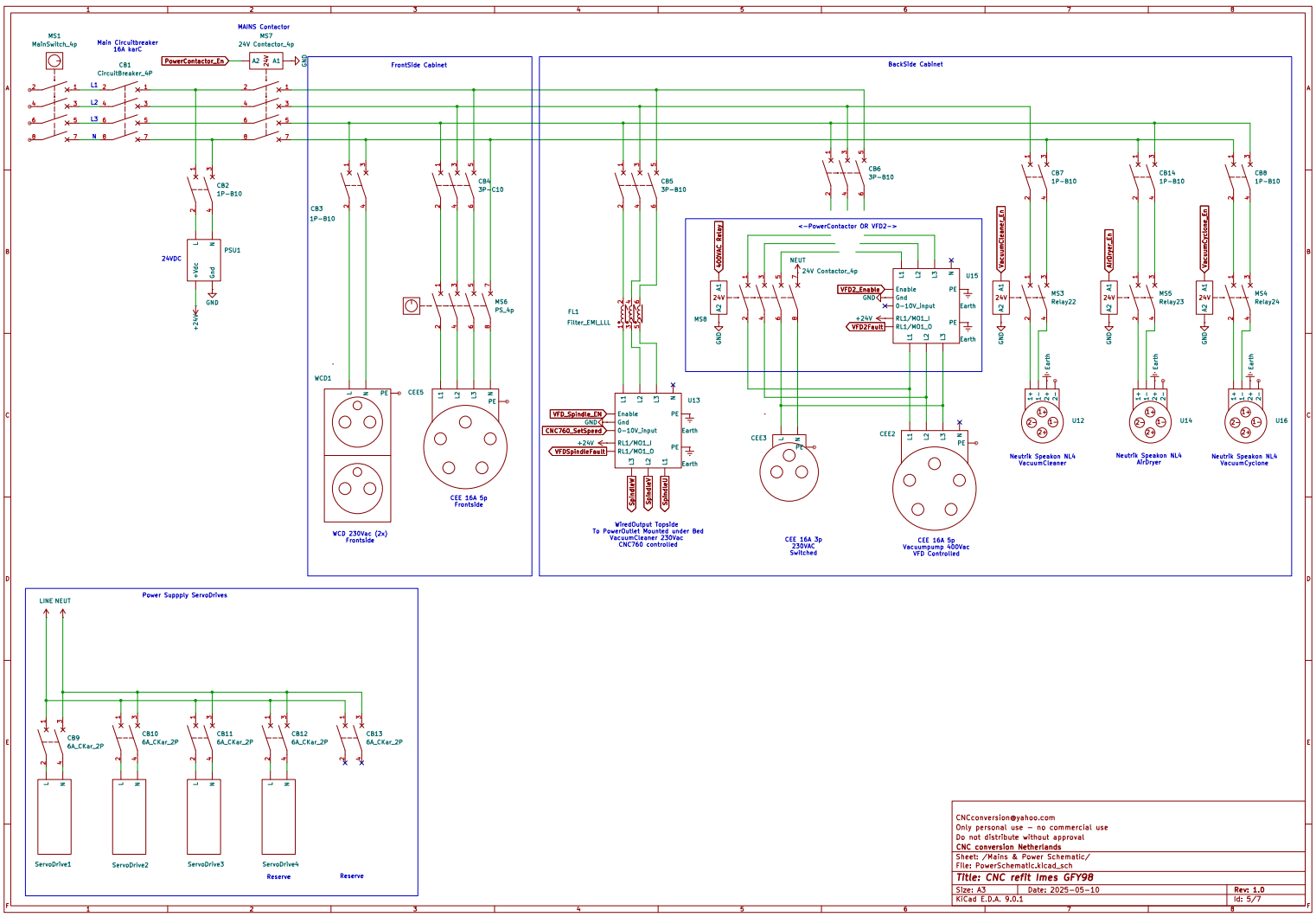

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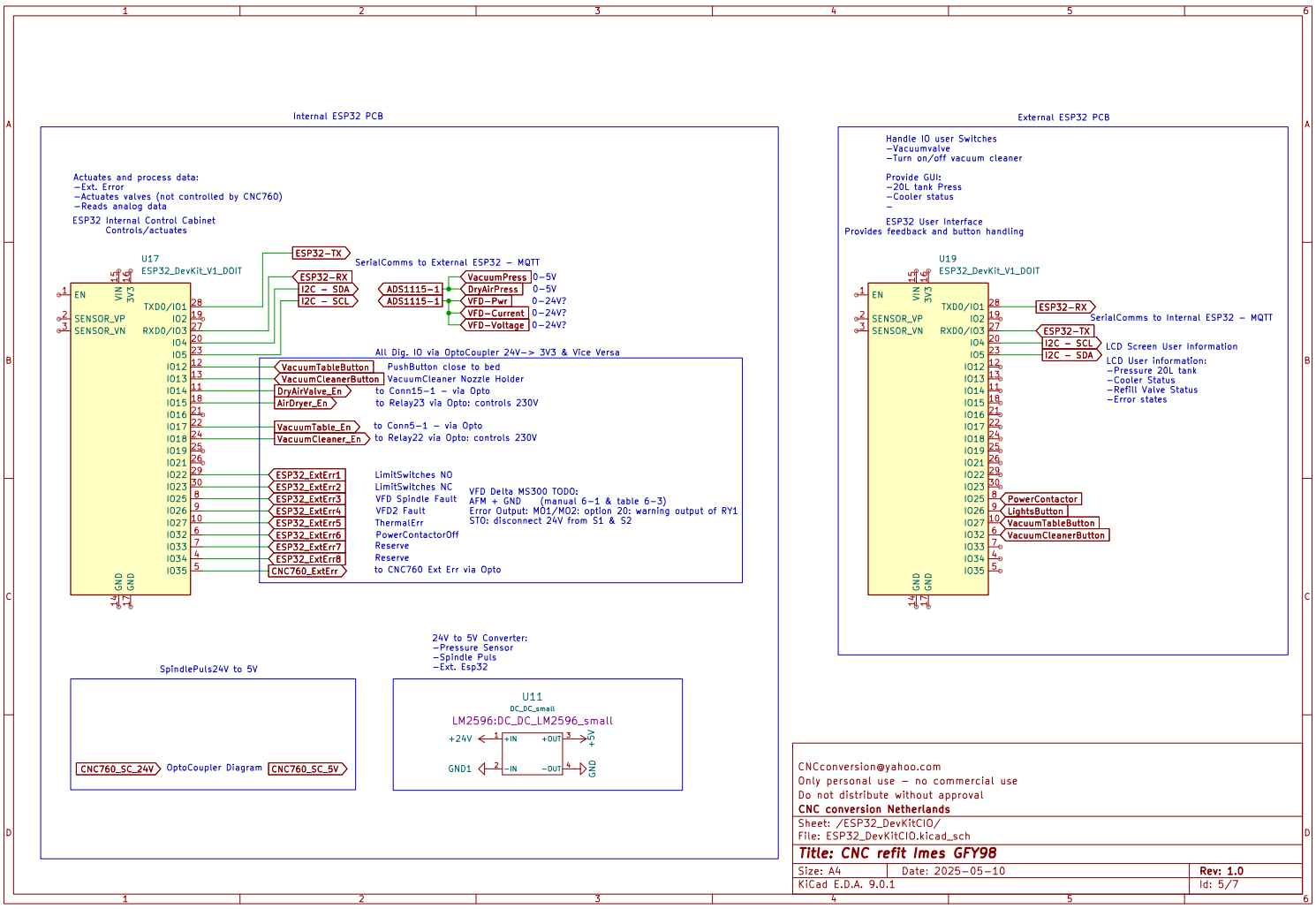

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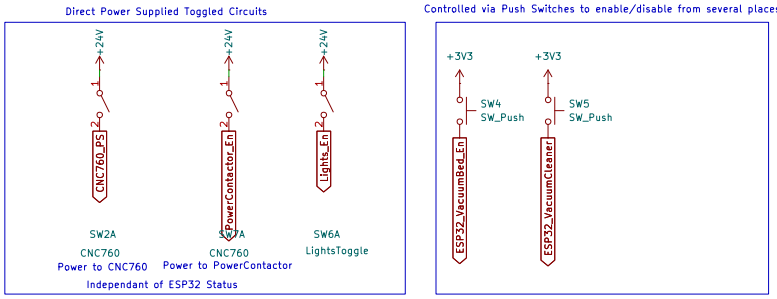

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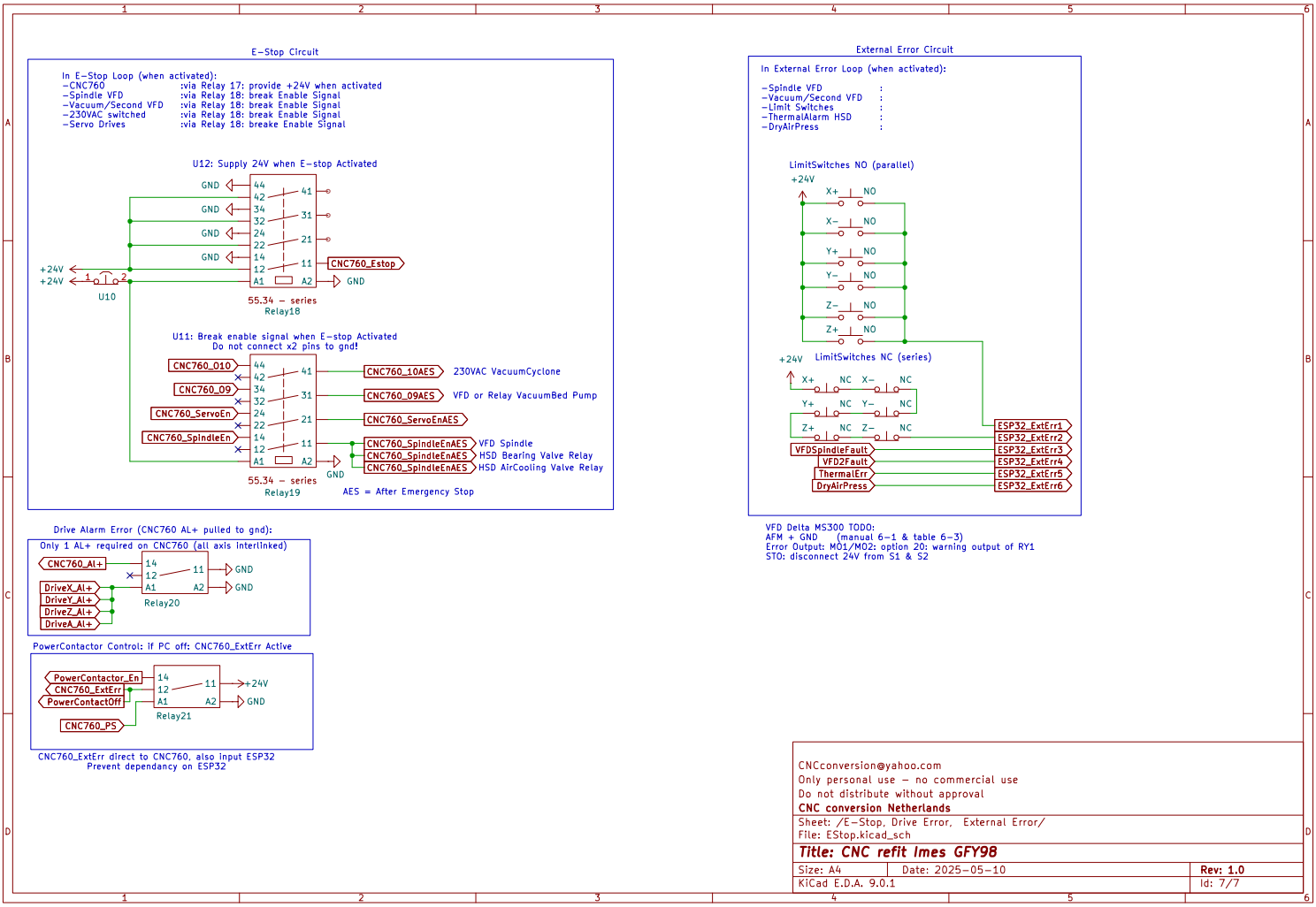

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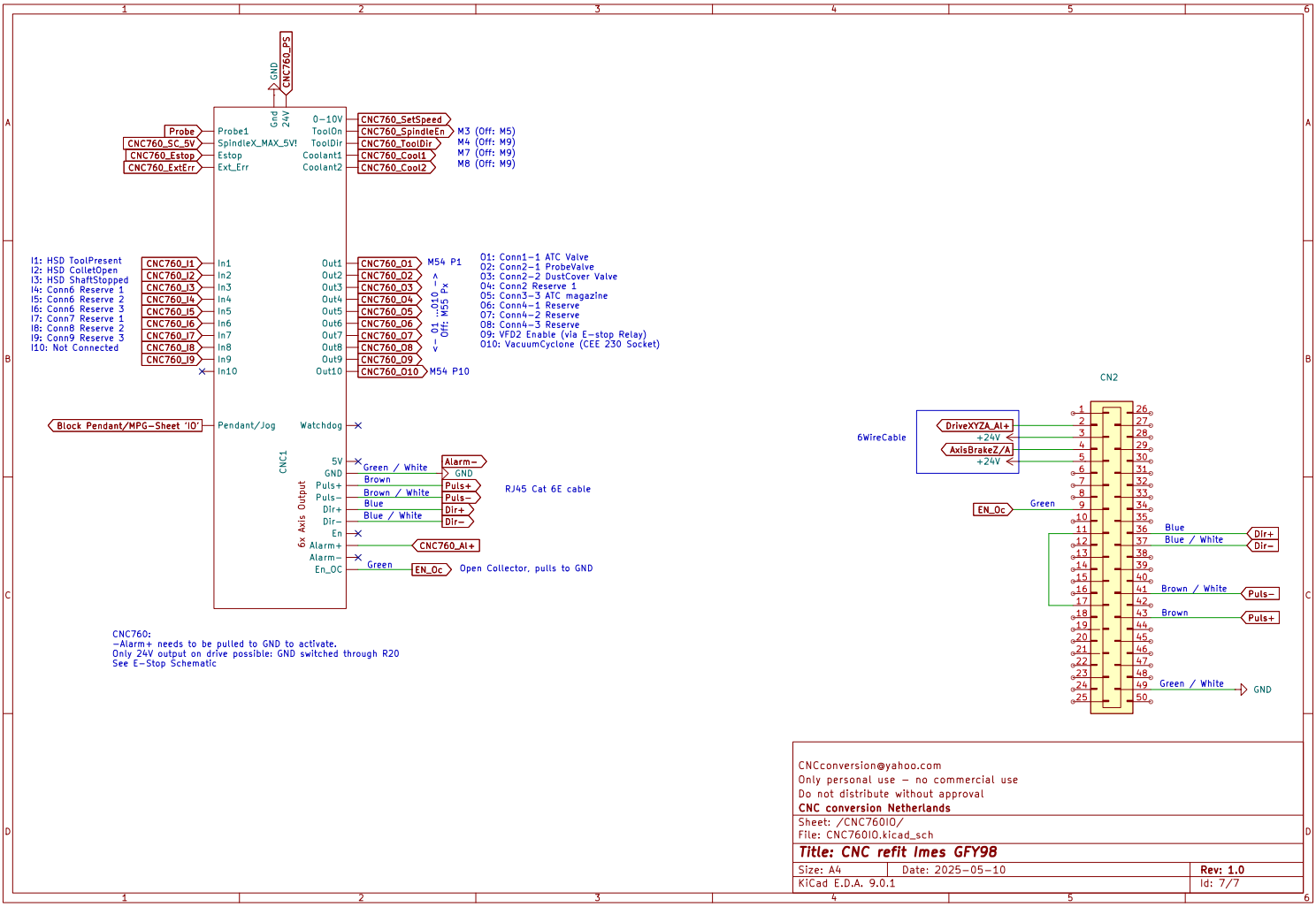

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