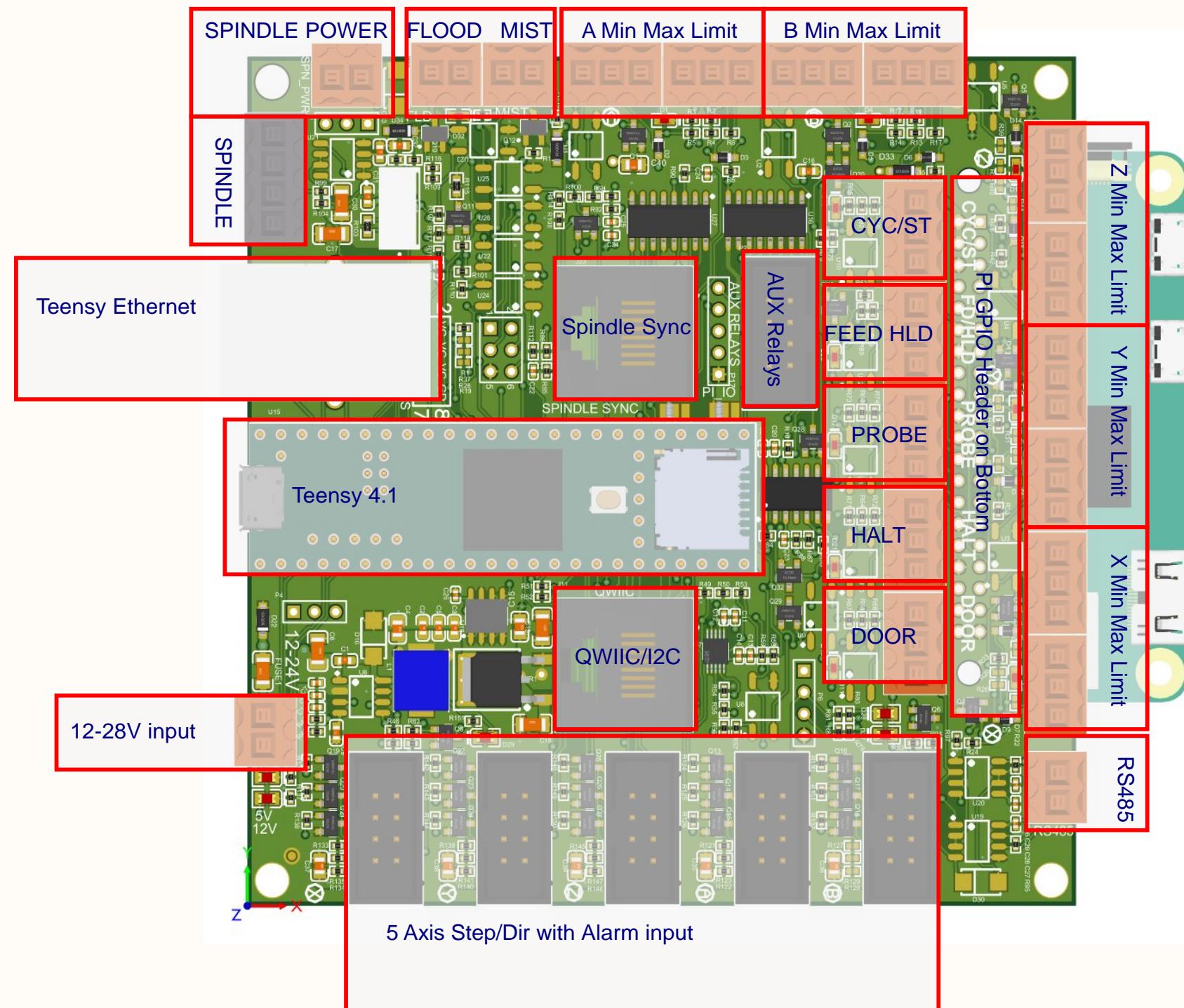


GRBLHAL2000 Breakout



Mechanical

PCB LOGO
Expatria Technologies

FID1 FID2 FID3

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ENGR	DOCUMENT	
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SIZE	MODIFIED	SHEET
B	2021-06-17 5:35:42 PM	1 / 14

Top Level Design

A

U_PrintNC_BREAKOUT
PrintNC_CNC_Breakout.SchDoc



A

B

B

C

C

D

D

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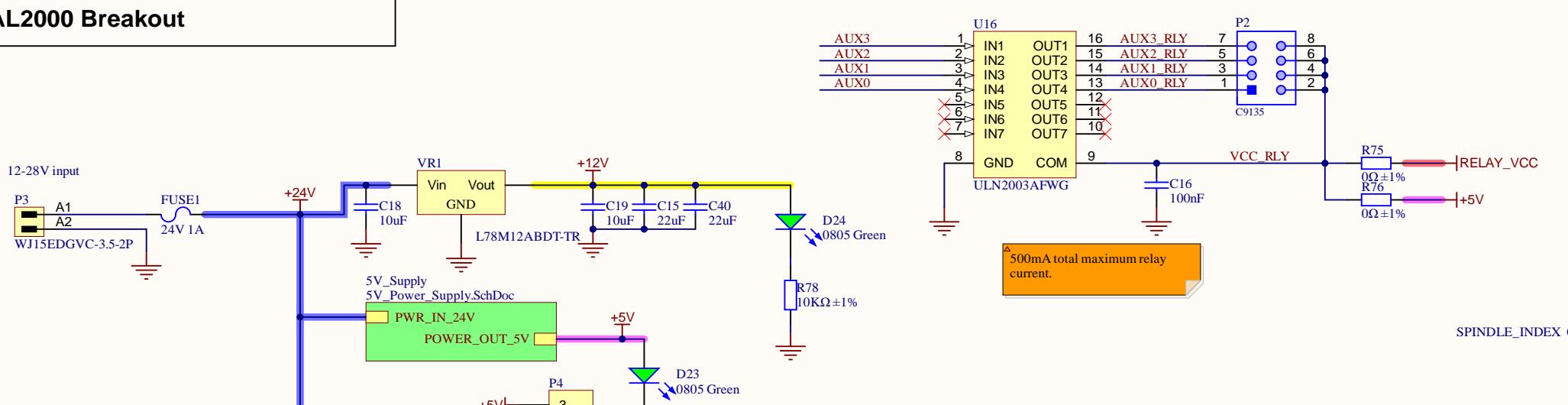


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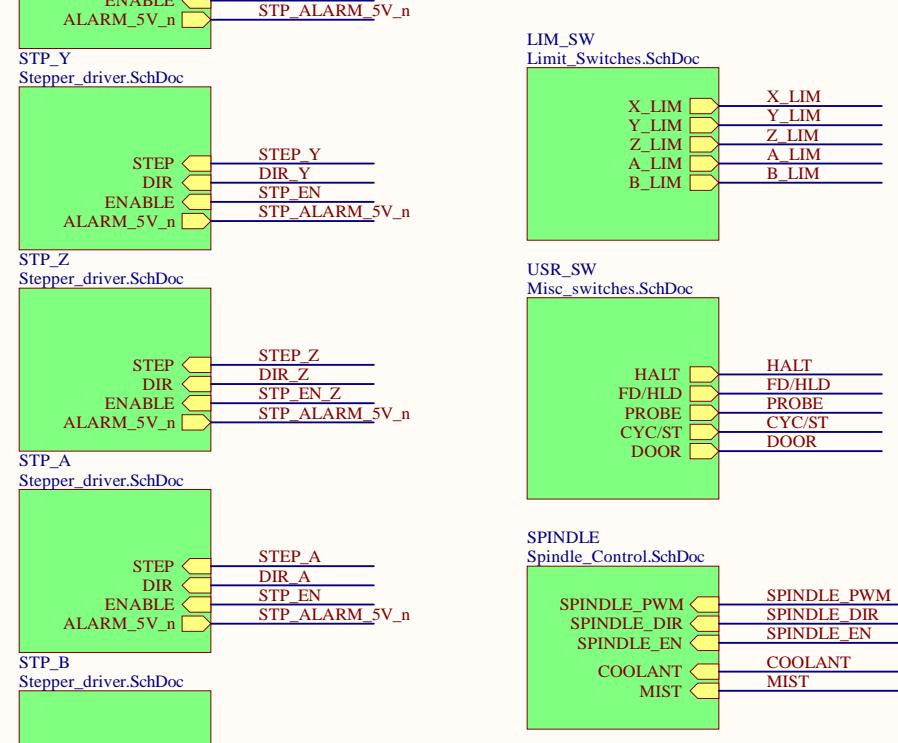
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HAL2000 Breakout

A



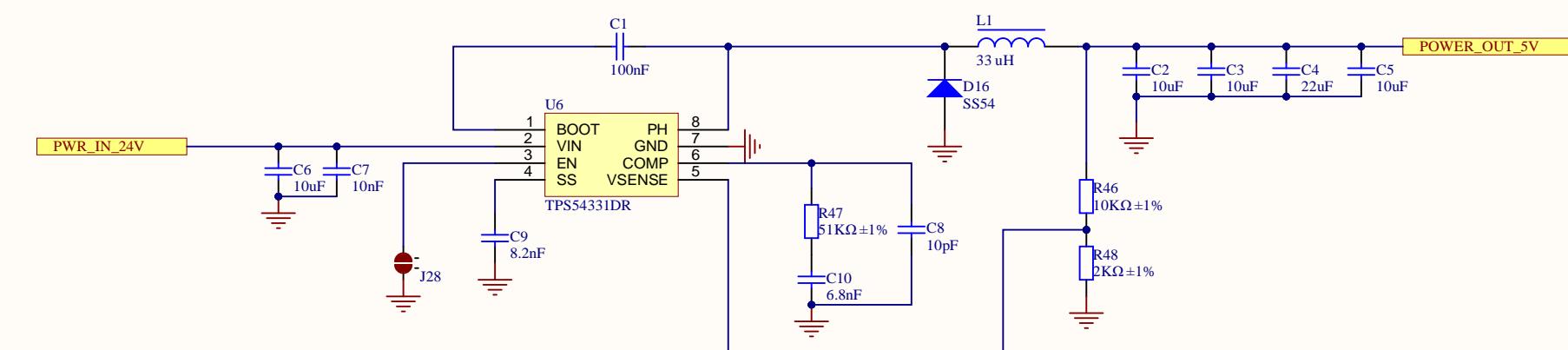
B



C



5V Power Supply



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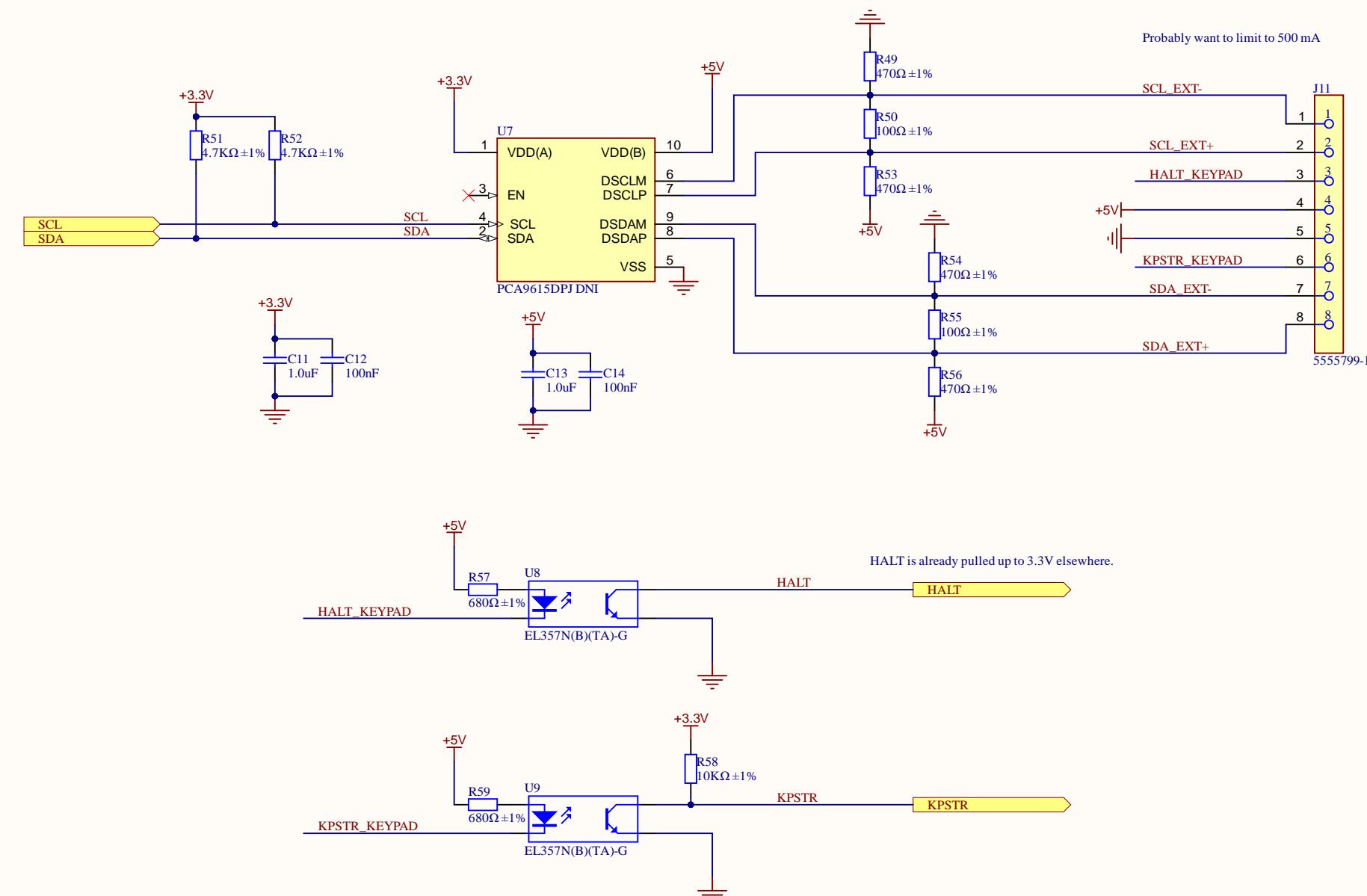
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QWIIC I2C Keypad



This should be a QWIIC compatible endpoint but adds KPSTR and HALT to the RJ45. All appropriate credit to Sparkfun for QWIIC.



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Limit Switches

A

A

B

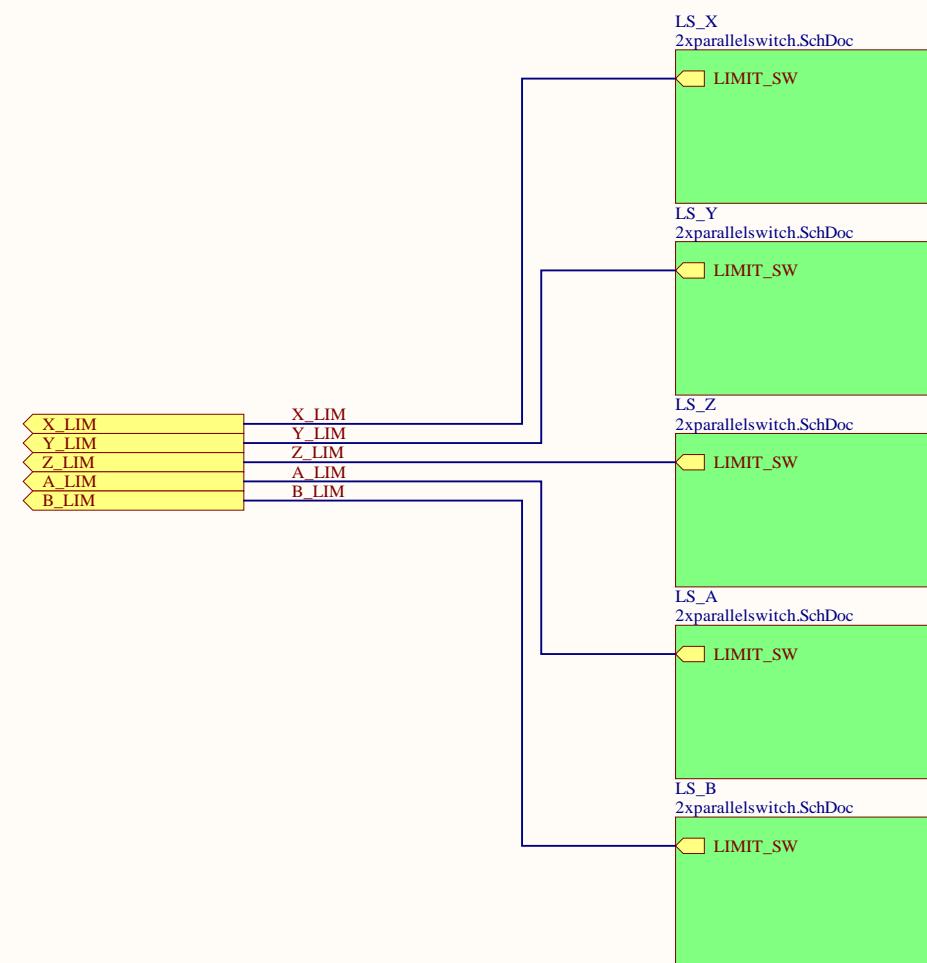
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D



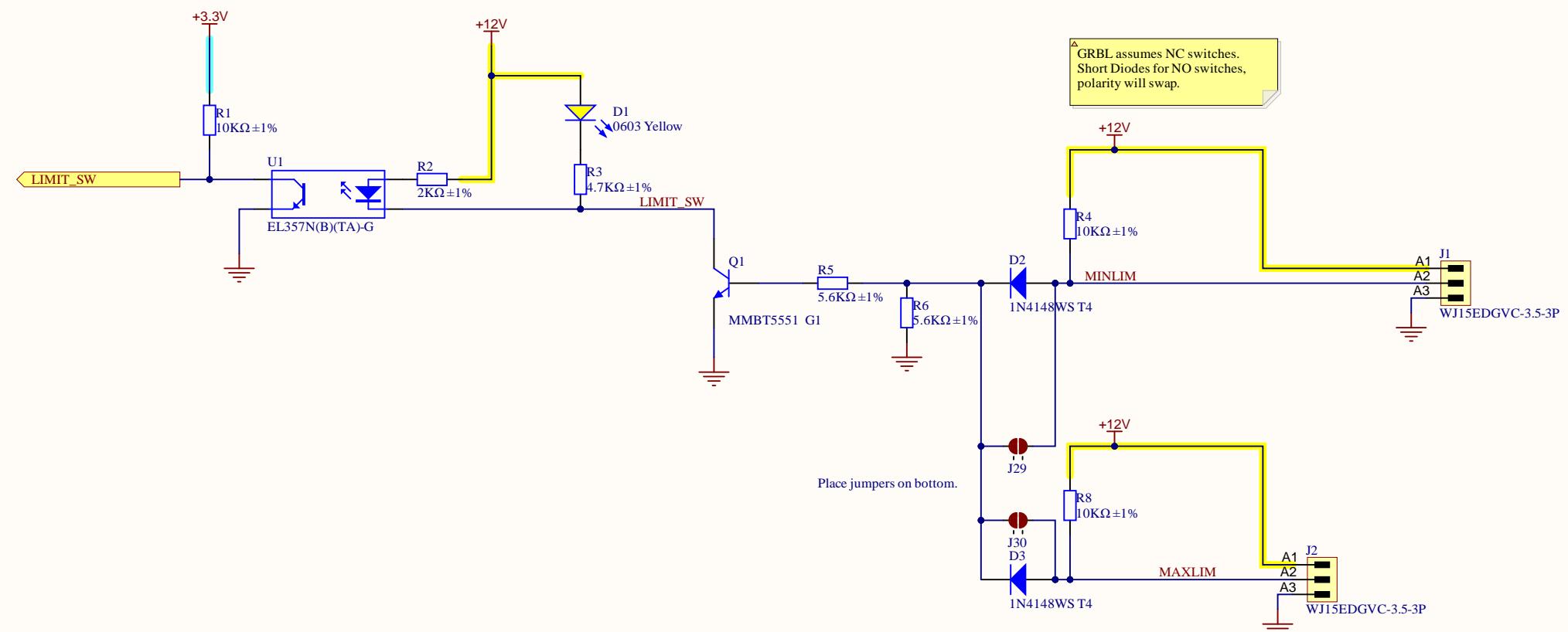
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PROJECT	REV		
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Limit Switch OR



Place jumpers on bottom

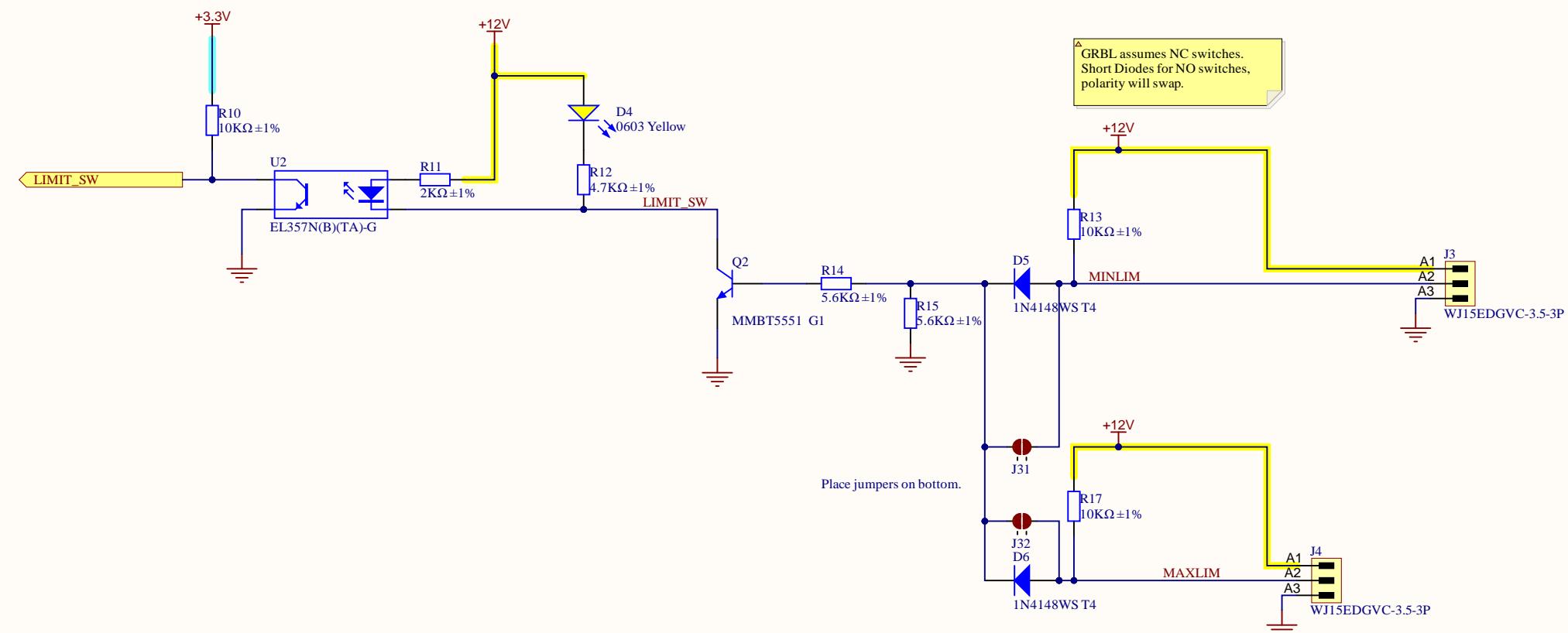
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Limit Switch OR



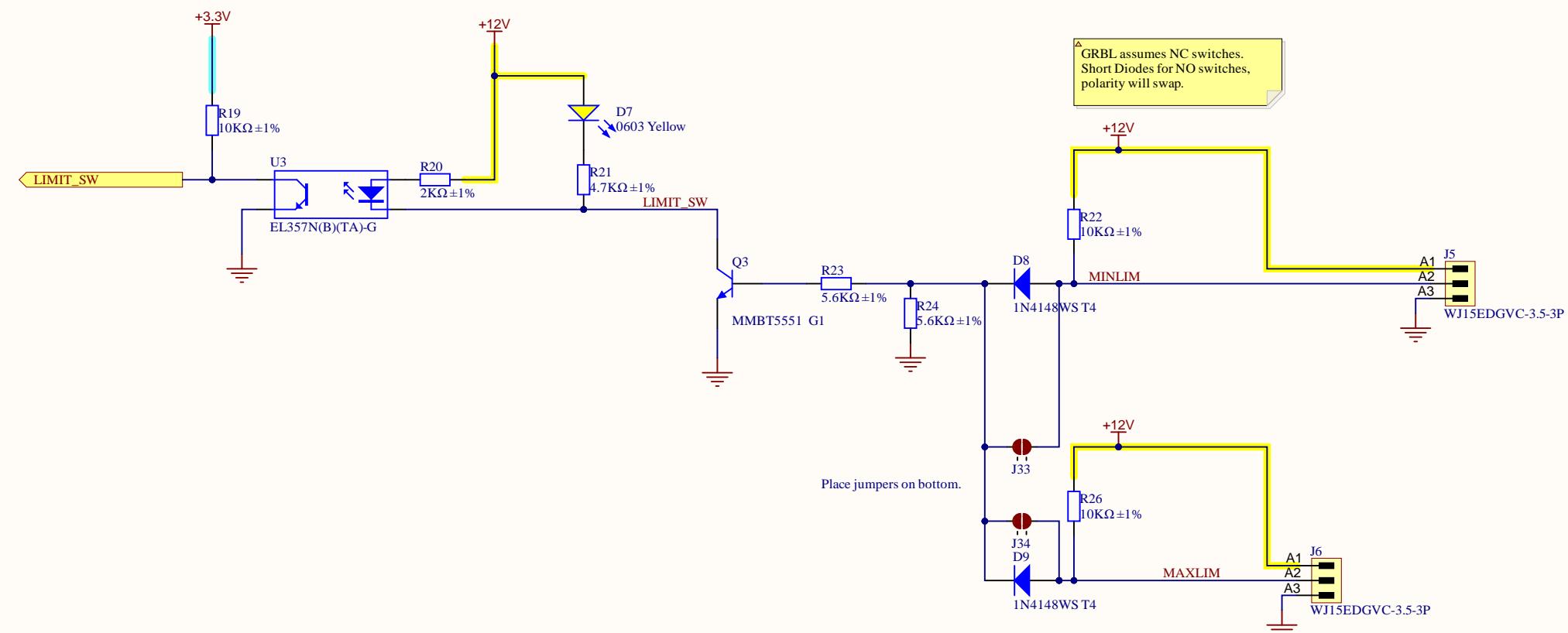
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Limit Switch OR



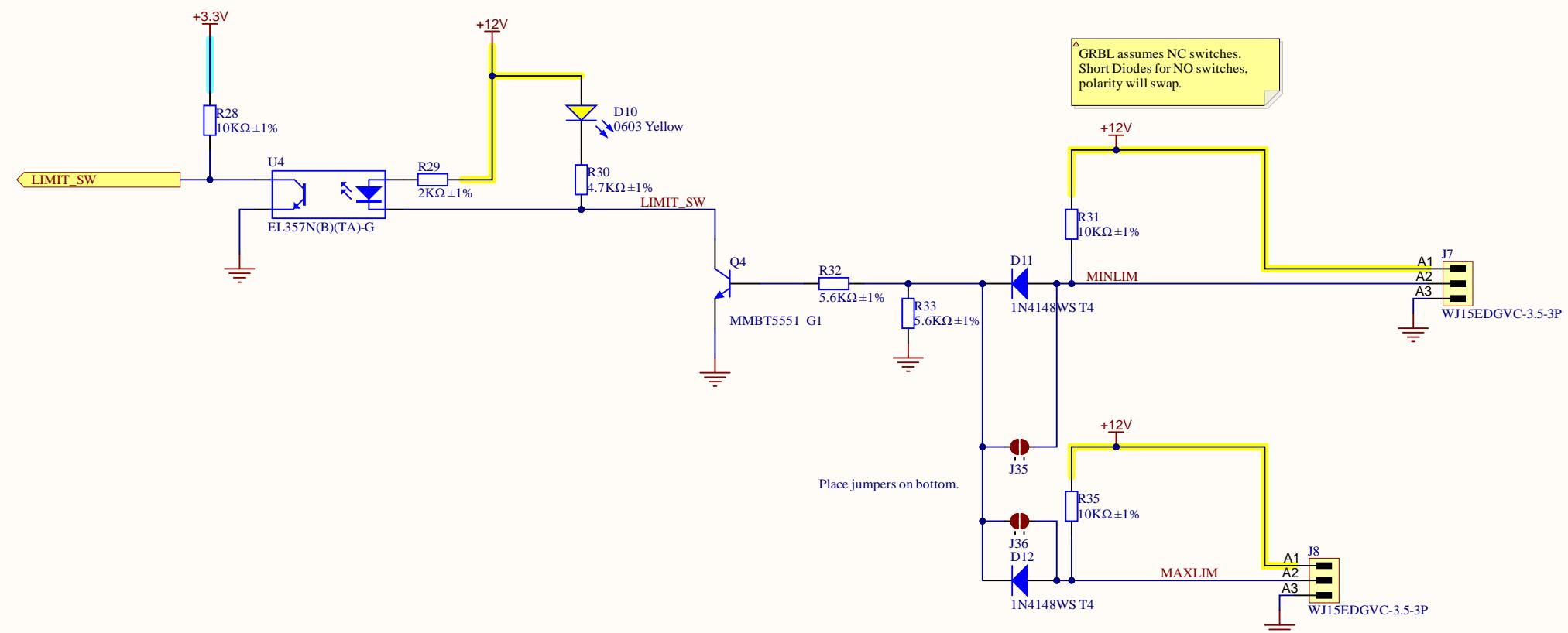
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PROJECT	REV	DOCUMENT	SIZE
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AM			MODIFIED
			2021-06-17 5:35:43 PM
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Limit Switch OR



Place jumpers on bottom

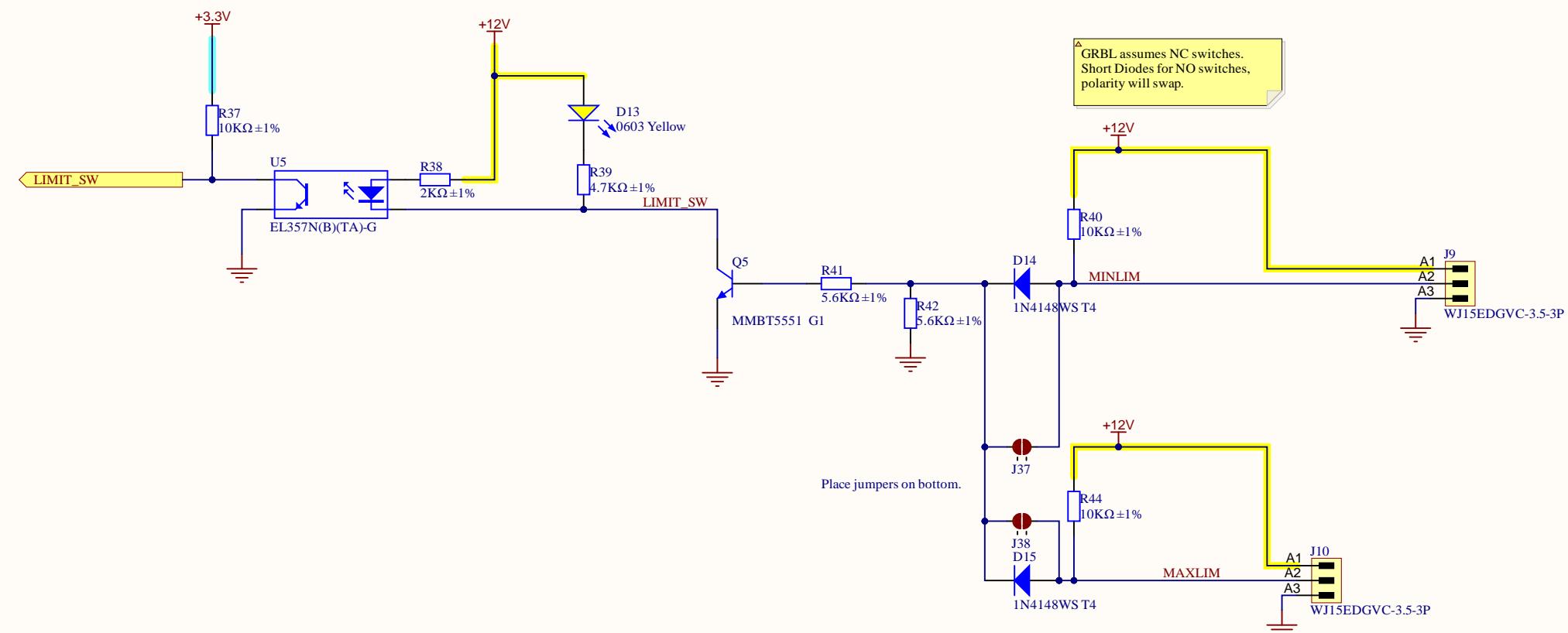
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Limit Switch OR



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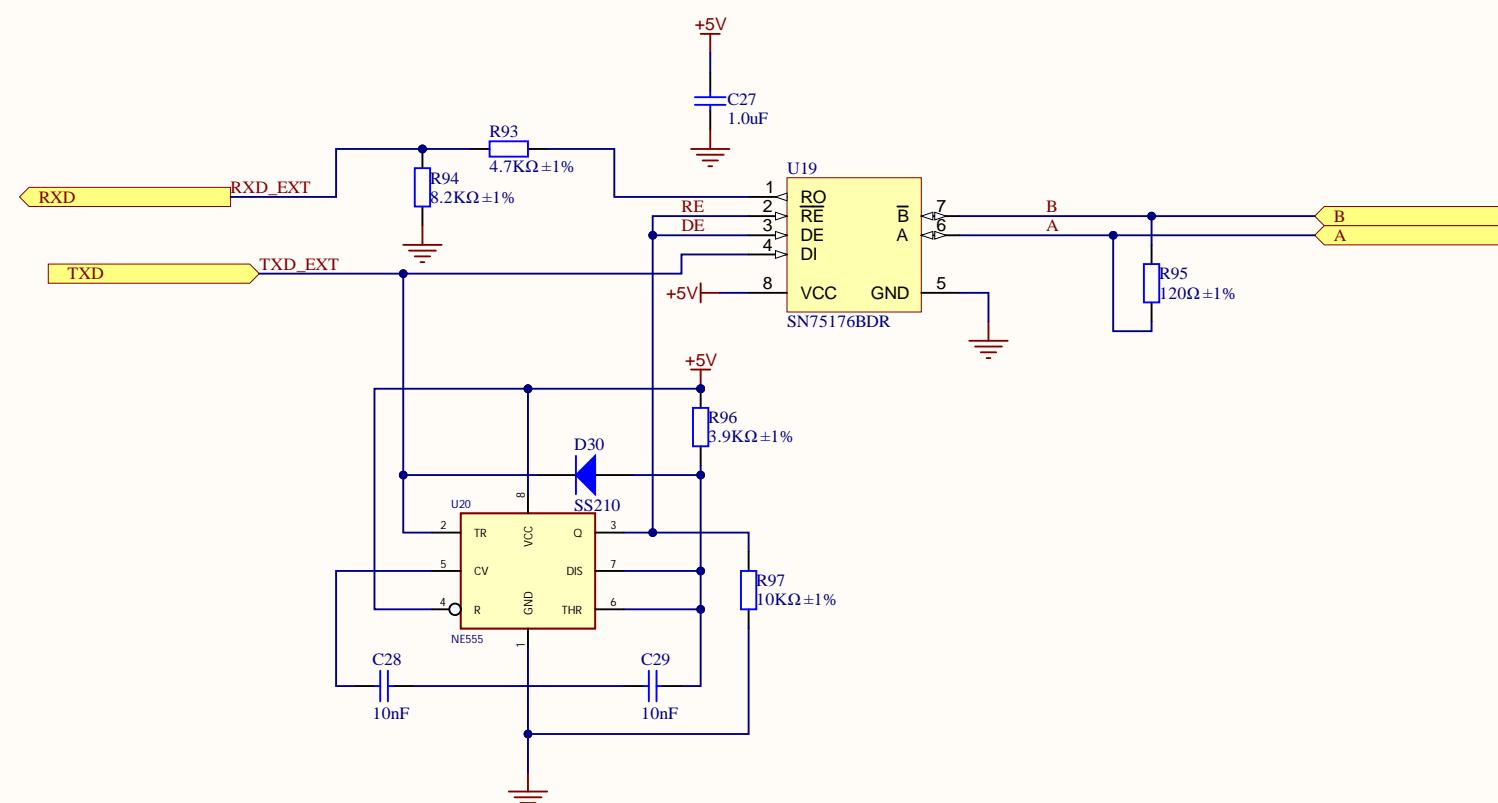


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2xparallelswitch.SchDoc			
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A

A



Auto direction circuit from Bryan Varner pi485 project used under MIT license. Thank you!

<https://github.com/bvarner/pi485>

B

B

C

C

D

D

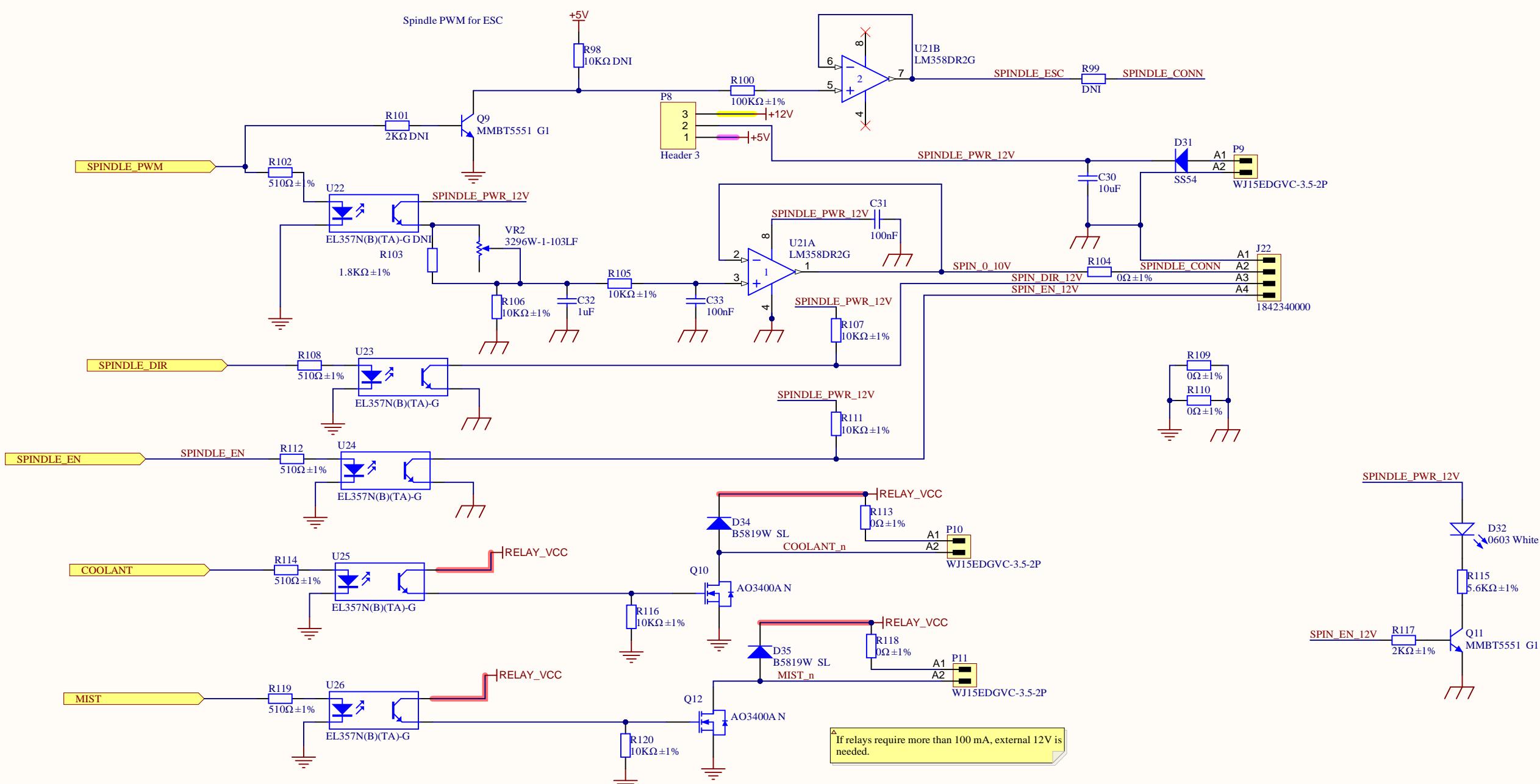
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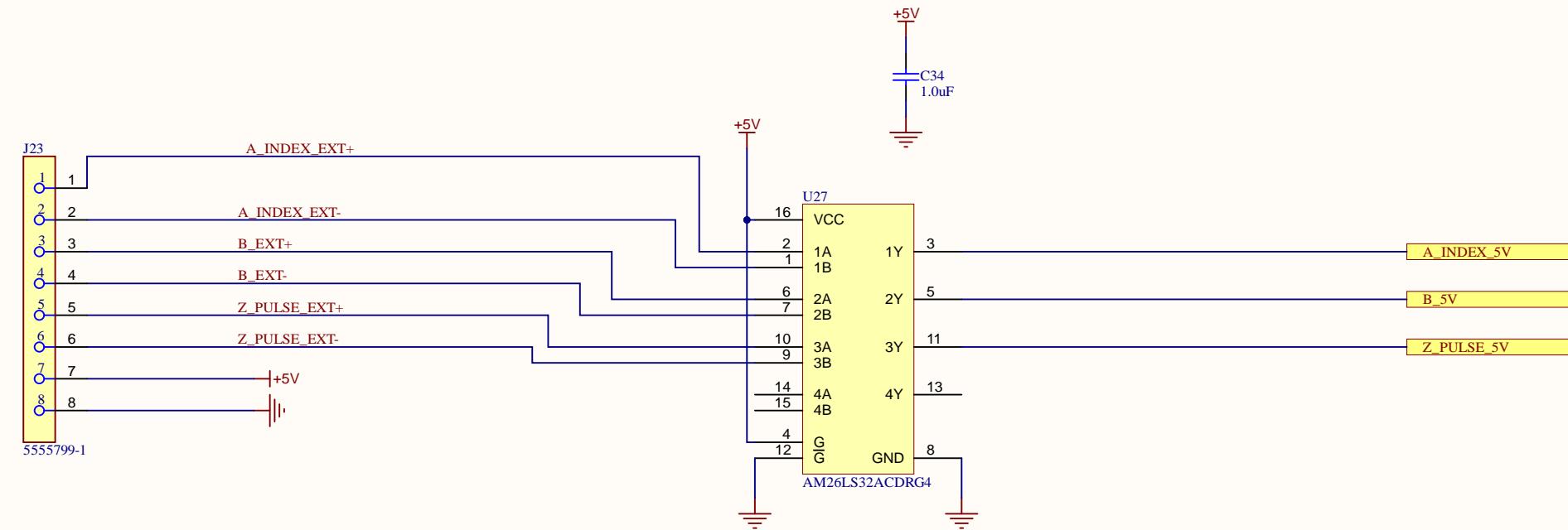
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Spindle Controls



A

A



B

B

C

C

D

D

Stepper Driver

A

A

B

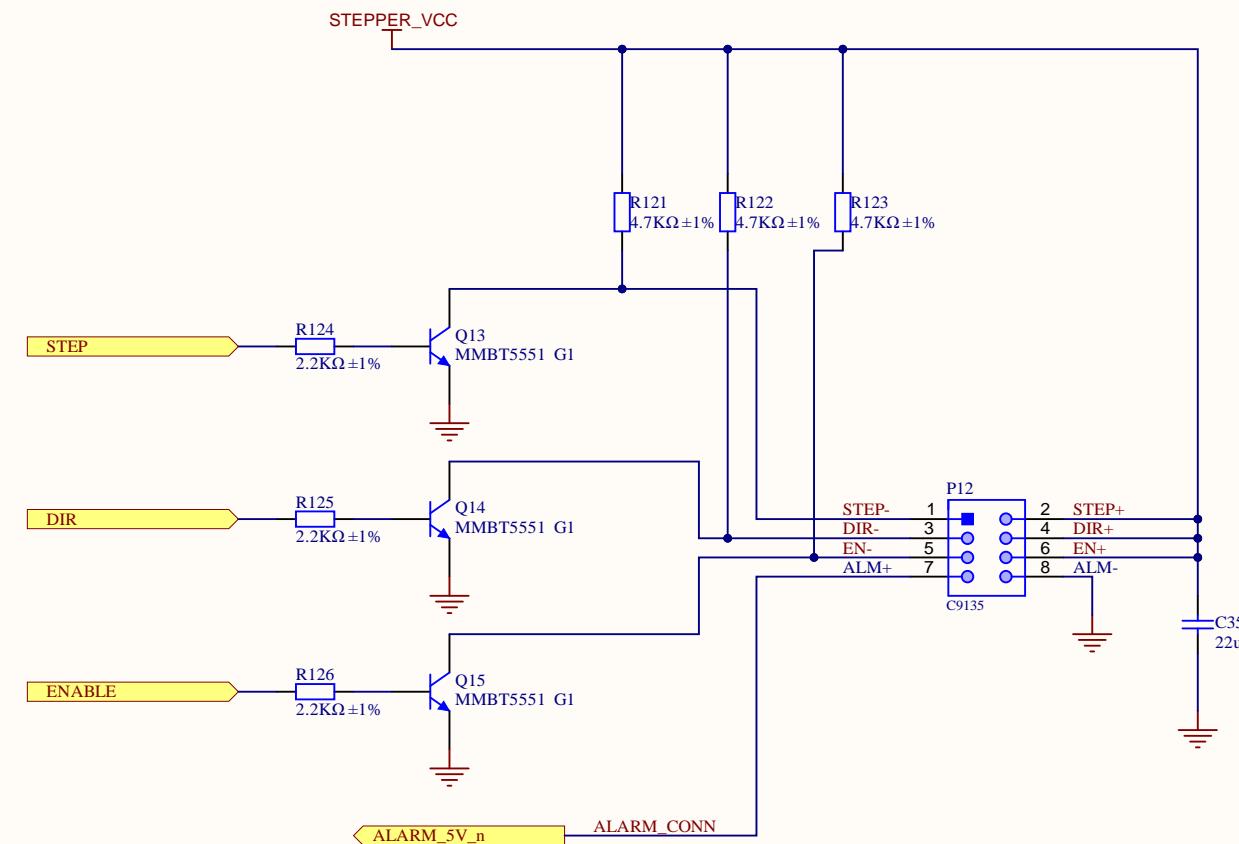
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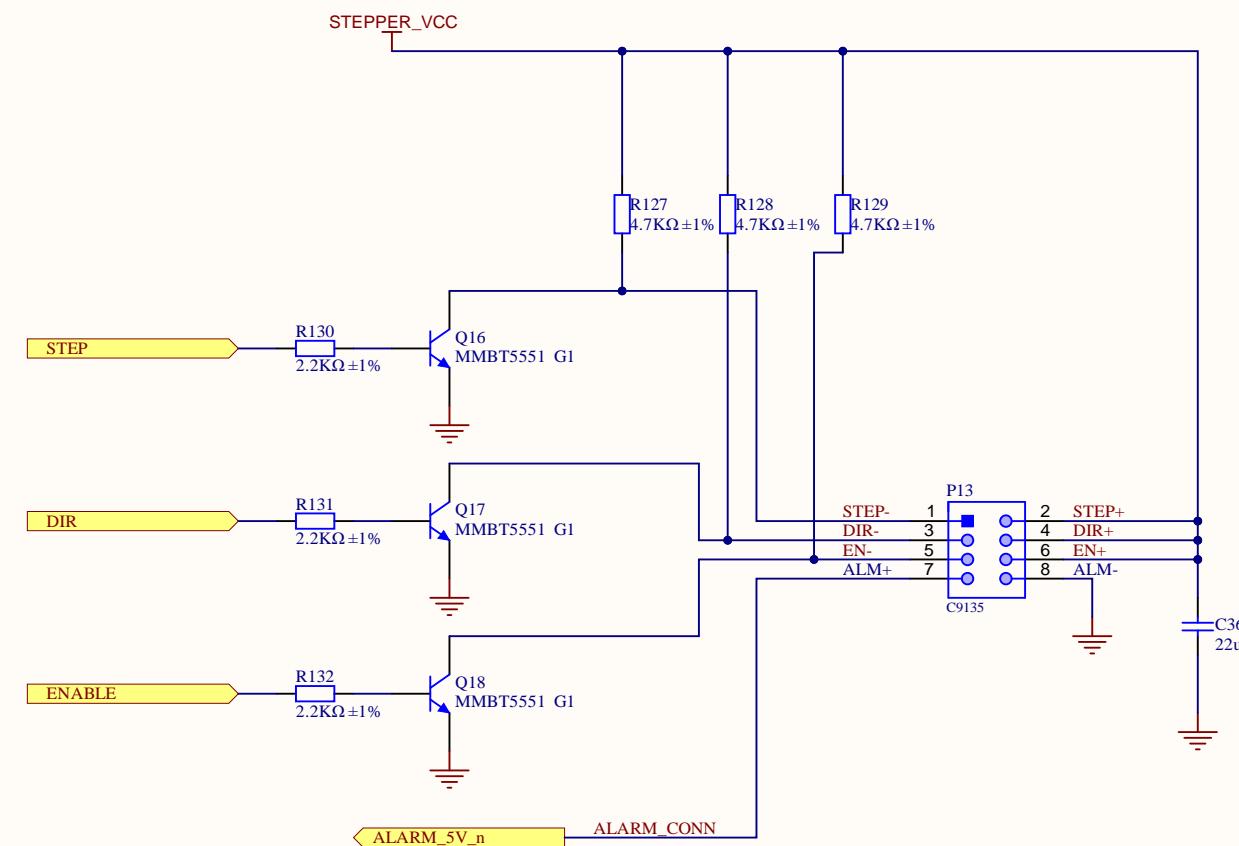
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Stepper Driver



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Stepper Driver

A

A

B

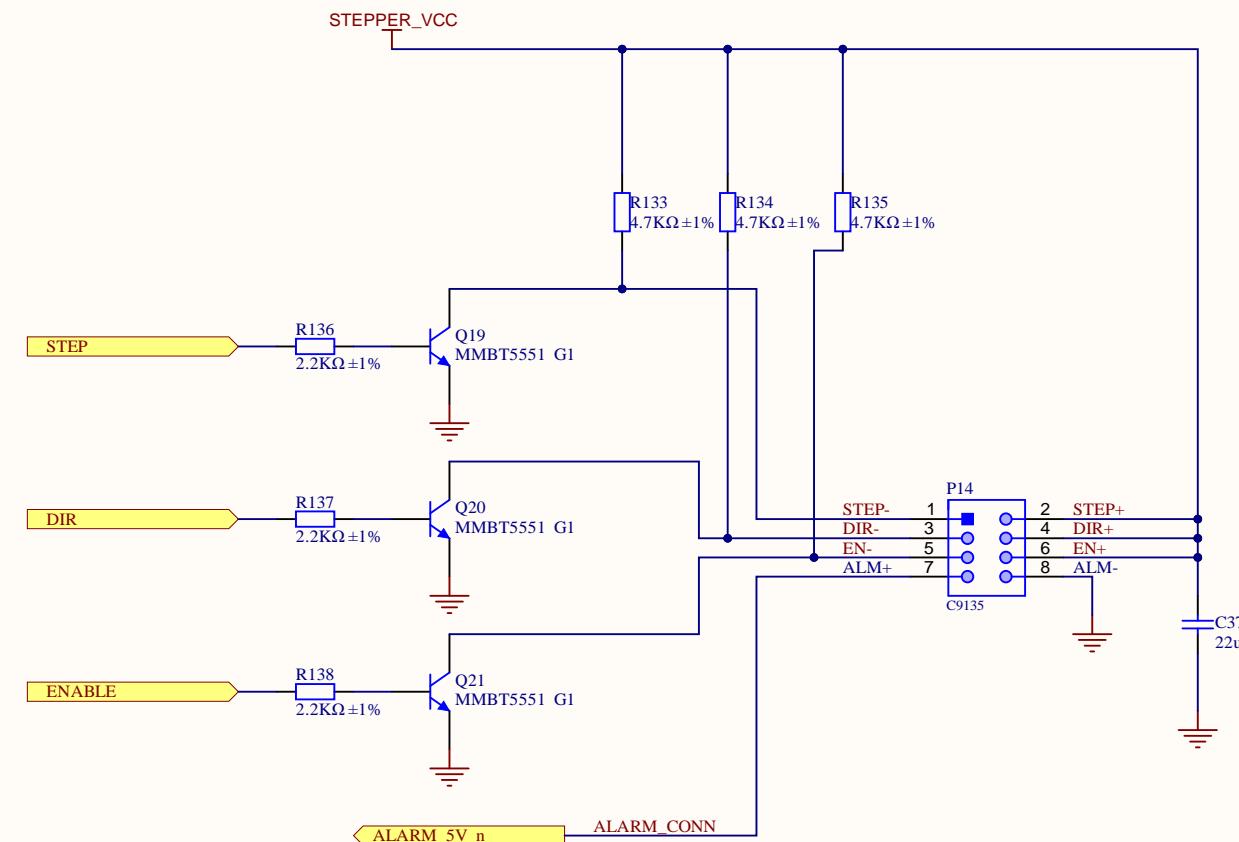
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C

C

D

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Stepper Driver

A

A

B

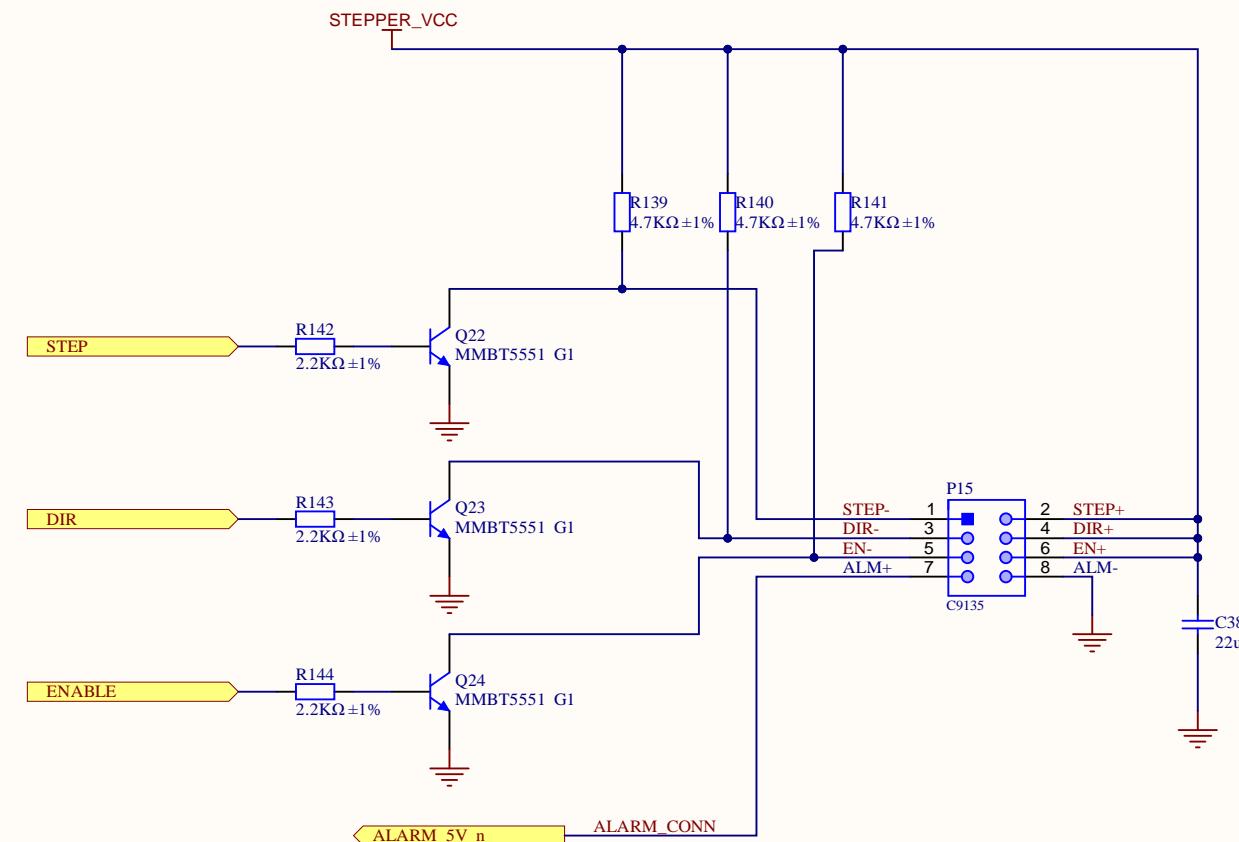
B

C

C

D

D



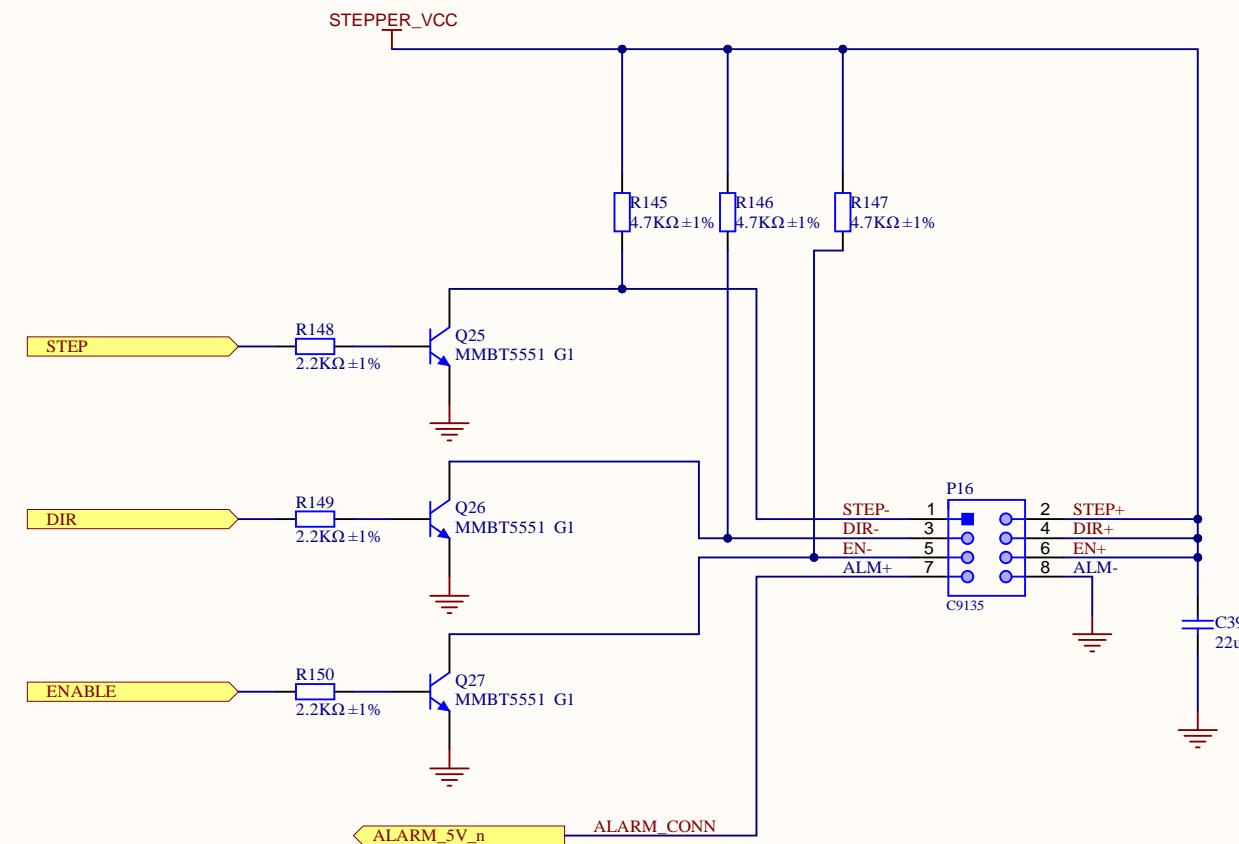
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Stepper Driver



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User Switches

A

A

B

B

C

C

D

D

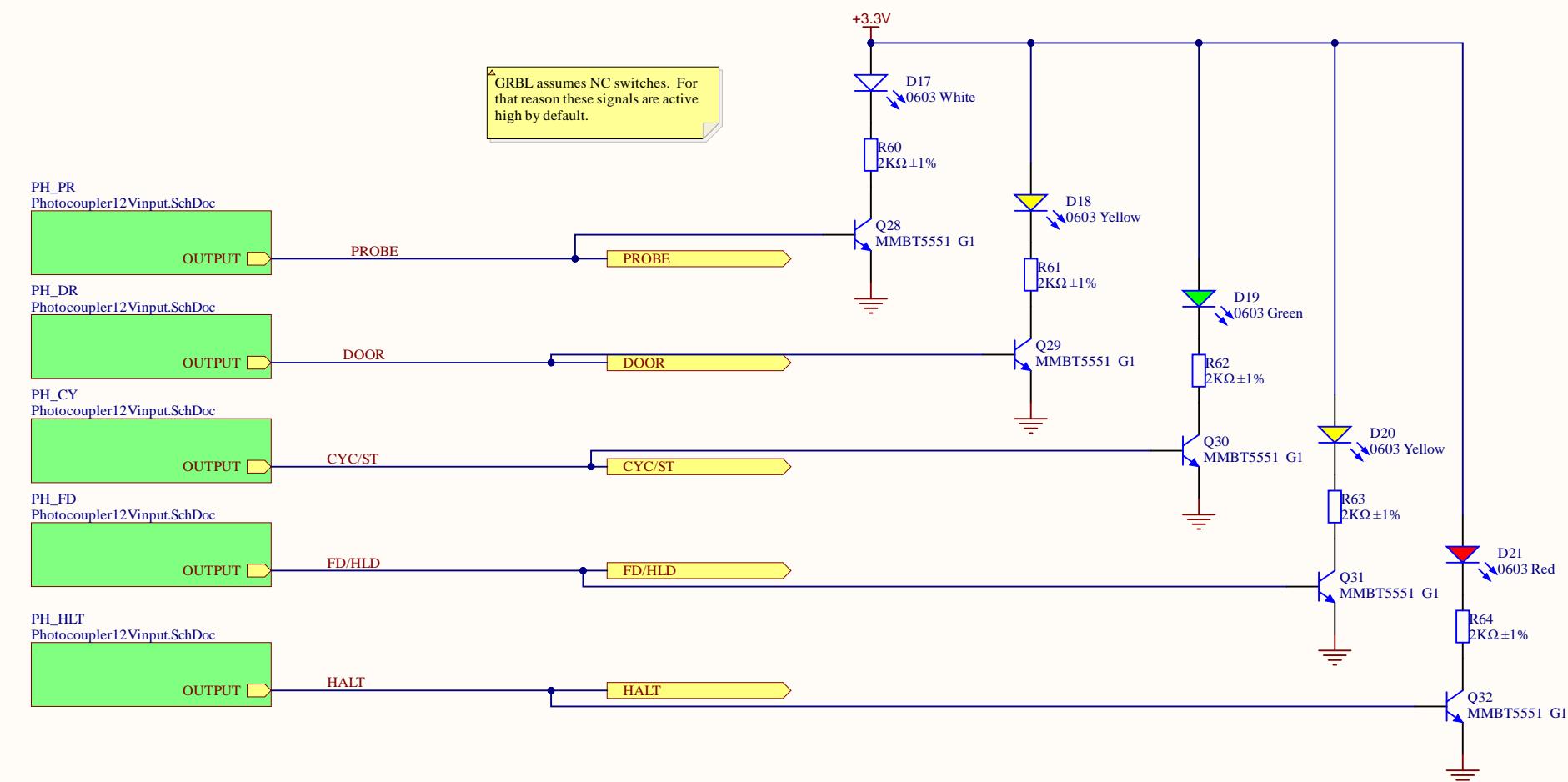


Photo Coupler 12V input

A

A

B

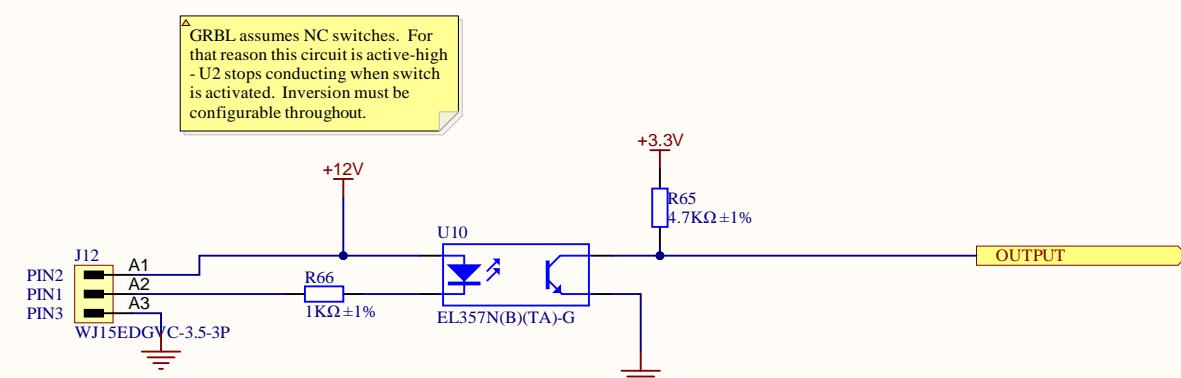
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Photo Coupler 12V input

A

A

B

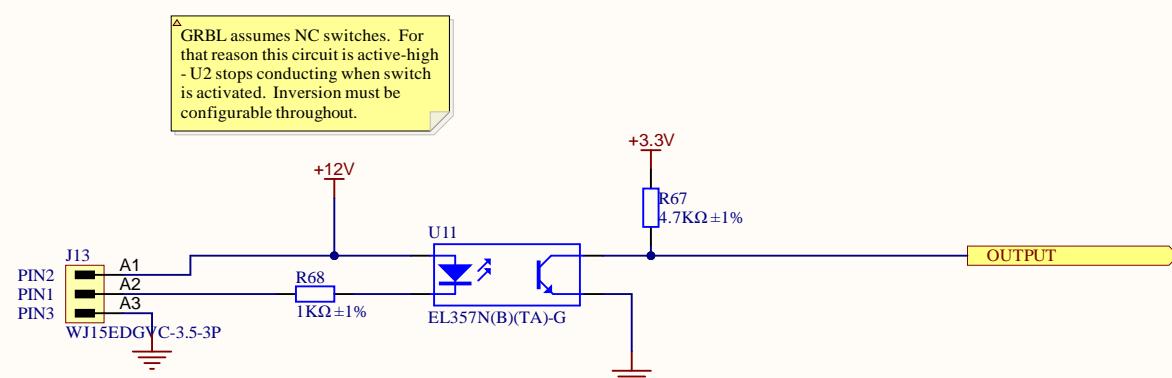
B

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D



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Photo Coupler 12V input

A

A

B

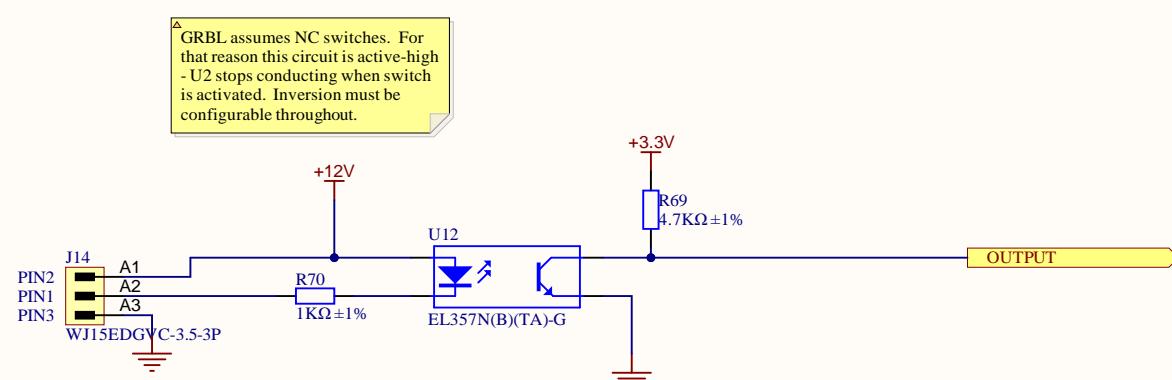
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Photo Coupler 12V input

A

A

B

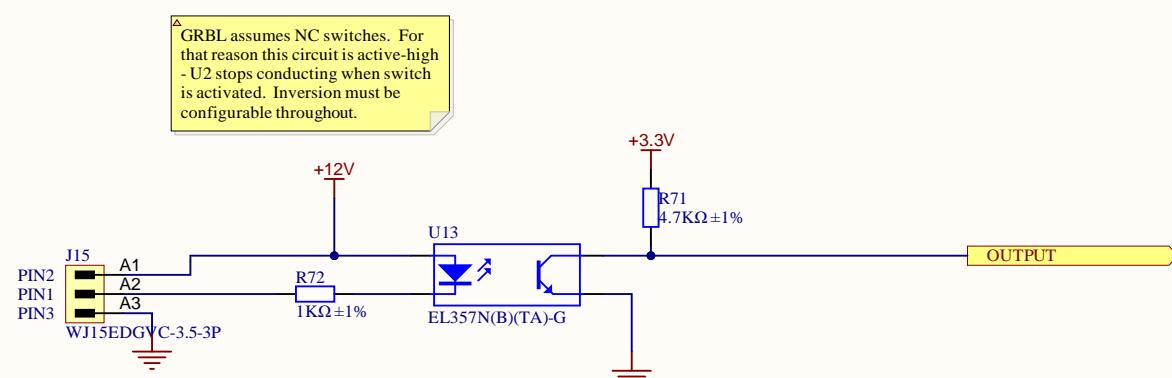
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Photo Coupler 12V input

A

A

B

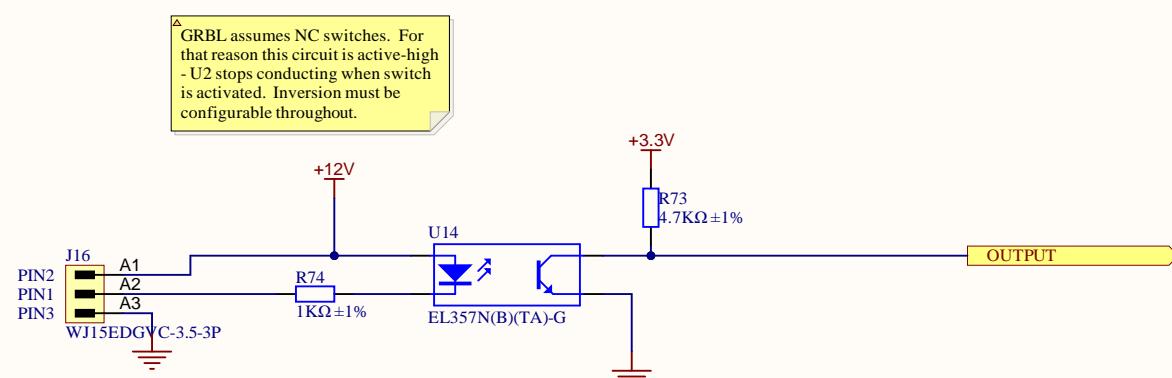
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Change Log

Date	Revision	Description
6/08/2021	A1	Initial release of schematic.
6/16/2021	A2	<p>Isolated 12V from relays.</p> <p>Added option to power relays from main input.</p> <p>Removed redundant 12V input</p> <p>Removed redundant LED</p> <p>Added additional 12V capacitance</p> <p>Replaced reverse diode with fuse and OV diode.</p> <p>Replaced switch diode resistors with jumpers.</p>

Date	Revision	Description

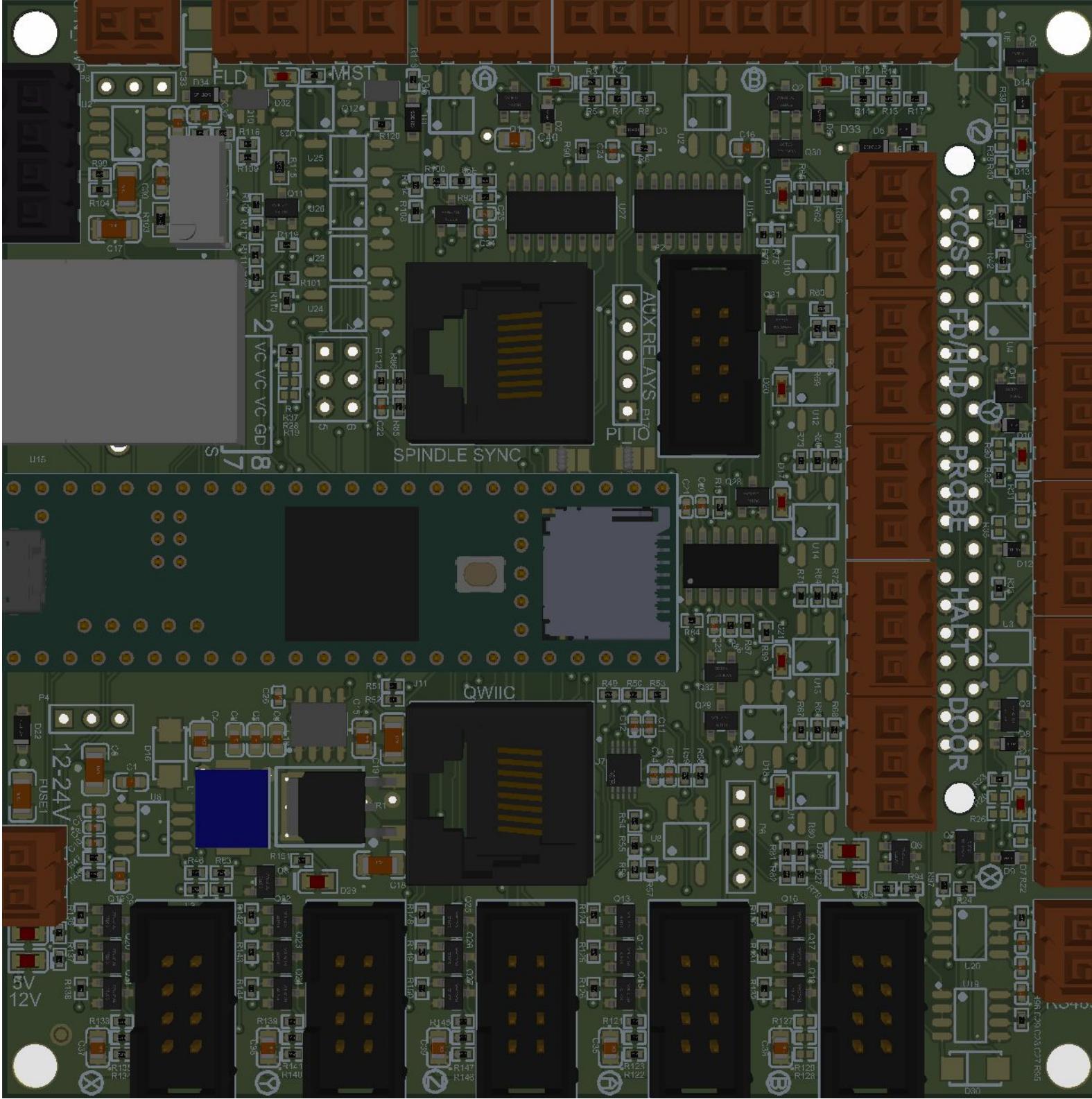
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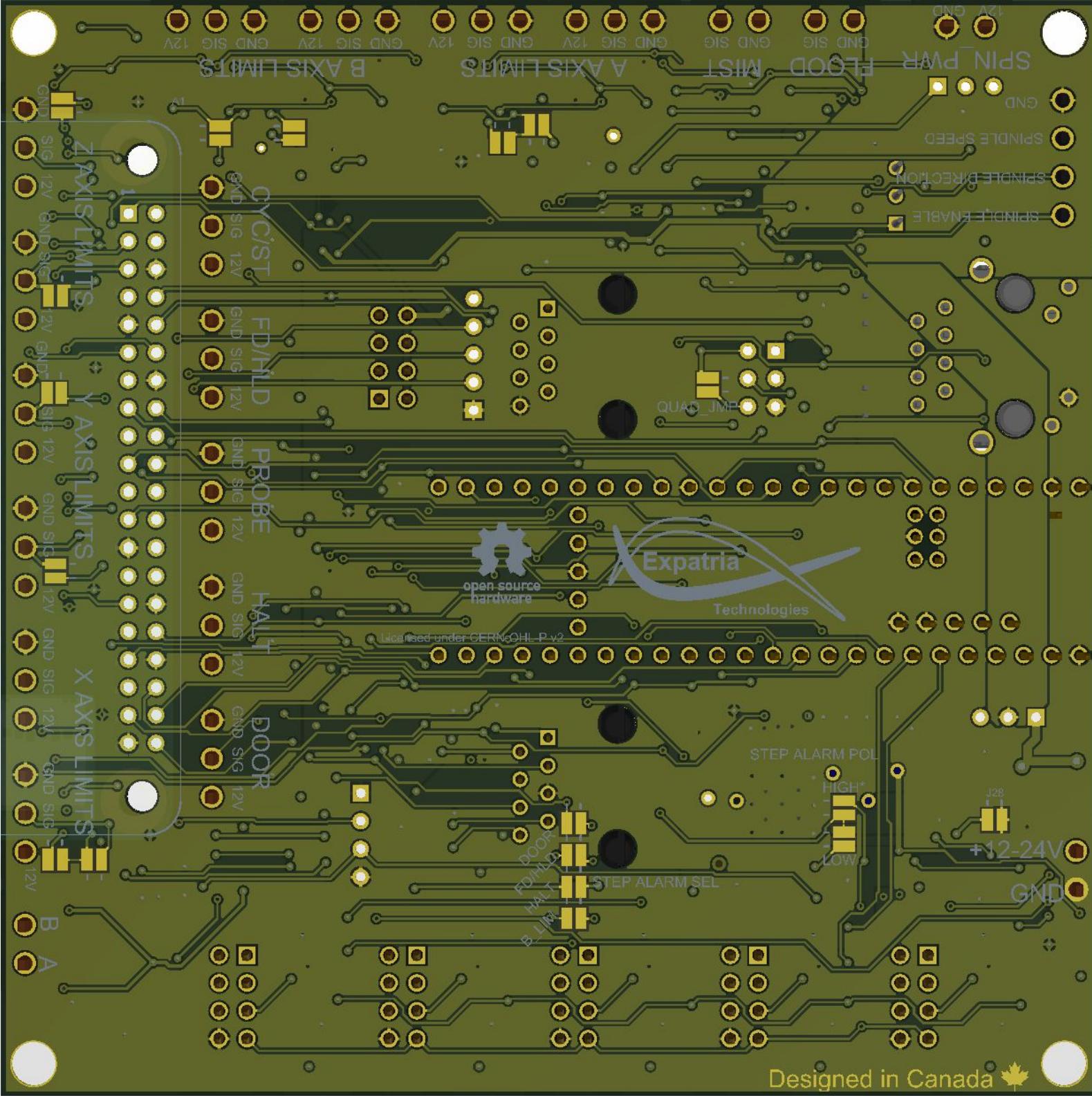


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