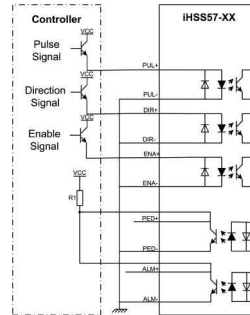
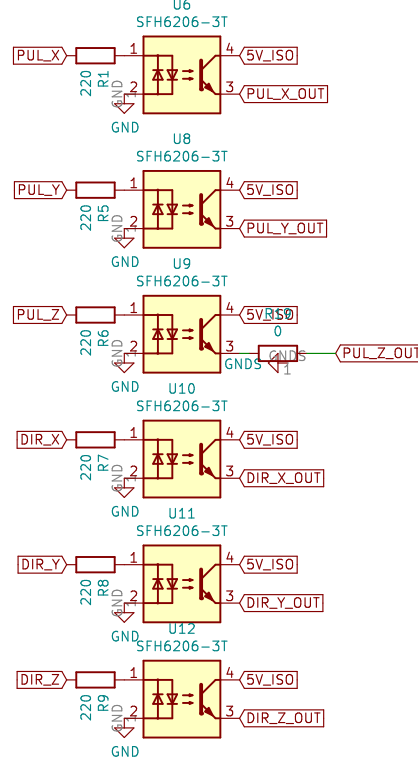


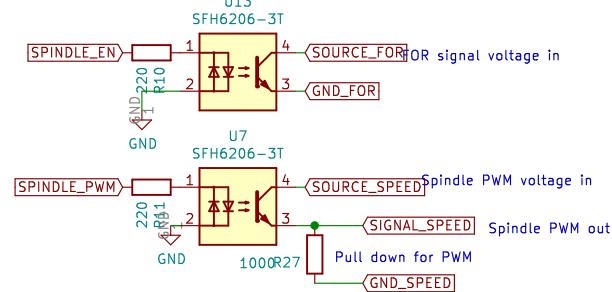
## 5.2 Connections to Common Cathode



## Outgoing signals



FOR signal voltage in



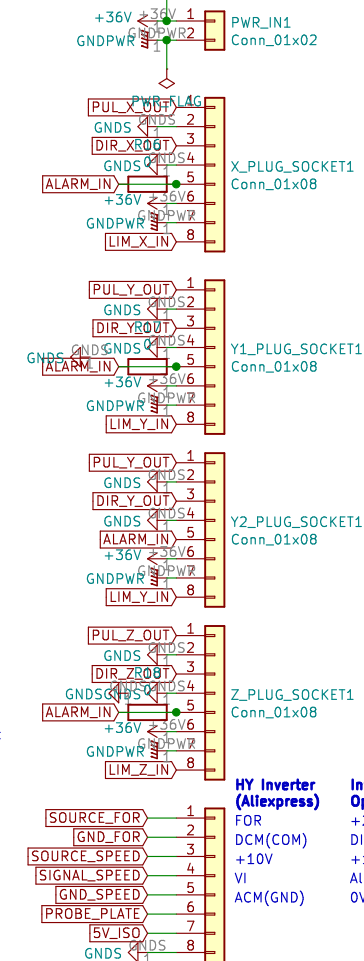
Pin connection diagram for the Arduino Uno R3 to the CNC controller board. The diagram shows two columns of pins: Digital (P1) and Analog (P2).

**Digital Pins (P1):**

- 1 (Tx) → 1
- 0 (Rx) → 2
- Reset → 3
- PWR\_FLAG → 4
- 2 → 5
- PUL\_X → 6
- PUL\_Y → 7
- PUL\_Z → 8
- DIR\_X → 9
- DIR\_Y → 10
- DIR\_Z → 11
- 8 → 12
- LIM\_X → 13
- LIM\_Y → 14
- LE\_PWM → 15
- LIM\_Z → 16

**Analog Pins (P2):**

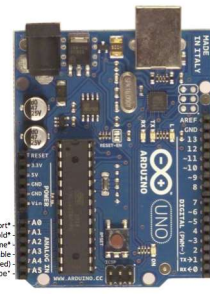
- +5V → 0
- GND → 1
- GND → 2
- GND → 3
- GND → 4
- GND → 5
- GND → 6
- GND → 7
- GND → 8
- GND → 9
- GND → 10
- GND → 11
- GND → 12
- GND → 13
- GND → 14
- GND → 15
- A7 → 16
- A6 → 17
- A5 → 18 (PROBE)
- A4 → 19
- A3 → 20
- A2 → 21
- A1 → 22
- A0 → 23 (ABORT)
- AREF → 24
- 13 (SCK) → 25 (SPINDLE\_EN)



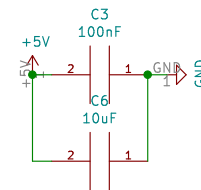
HY Inverter (Allexpress)	Inverttek Optidrive	VFD w/o PWM Vref Source
FOR	+24 (1)	
DCM(COM)	DIN1 (2)	
+10V	+10 (5)	JUMPER to pin7 (5V_ISC)
VI	AI1/D14 (6)	SPEED signal (0-5V)
ACM(GND)	0V (7)	JUMPER to pin8 (GNDs)

SIGNAL\_SOCKET1  
Conn 01x08

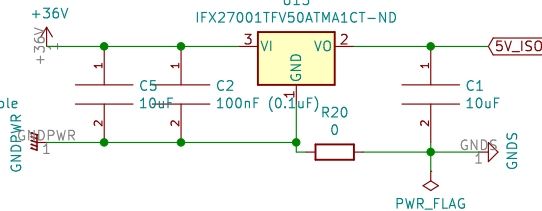
All IN PINs  
has internal 20k  
pull up resistor to +5V



\* - Indicates input pins. Held high with internal pull-up resistors



Add diode for reverse voltage protection? ||15



this 0 R is to control where the grounds join

### All motors ALARM in Parallel

Diodes to stop backflow from the 36V pullup on the limit switch side

Option: add indicator LED here, 1 for all

Potential ground loop with spindle case earth.  
Can be avoided by NOT grounding case of  
spindle but that increases electromagnetic noise.  
Recommendation, ground case and try,  
disconnect if problems arise.

