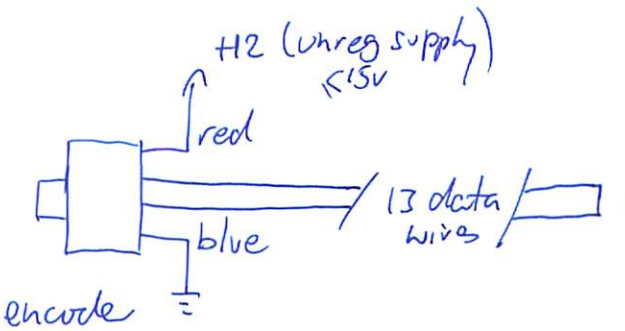
Encoder interface 9/7/09

- Voltage 6 10..32V. We will use 12v.
- current drain ~ 90mA
- ~~2^12~~ 2^{13} = 8192 step encoder in a Gray code

wire	Gray	colour	
1	G_0	violet	
2	G_1	white/brown	
3	G_2	white/green	
4	G_3	white/yellow	
5	G_4	white/gray	
6	G_5	white/pink	
7	G_6	white/blue	
8	G_7	white/red	
9	G_8	white/black	
10	G_{9R}	brown/green	
11	G_{10}	brown/yellow	
12	G_{11}	brown/grey	
13	G_{12}	brown/pink	
17	Store	pink	- low = freeze data bits hi = free run (default)
18	yellow enable	yellow	- hi = tristate outputs - low = outputs active (default)
19	CW/CCW	brown	- hi = clockwise increase (default) * 93. low = counter clockwise
20	GND	blue	- ground
21	V+	red	- + voltage (12v) Do not exceed 15v.

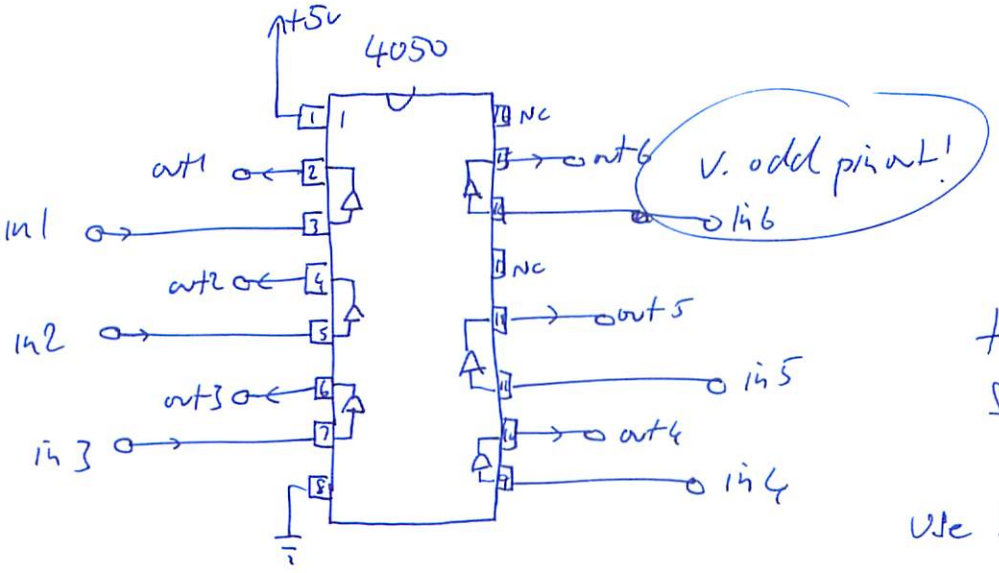
(gray = set line. Could use ts, but better to use the button on the encoder itself).



74HC4050 - needs 5v from

12v → 5v → to D I/O card IPs.

level shifter



have one 13 bits,
So we need 3 chips.

Use staggered veropins.

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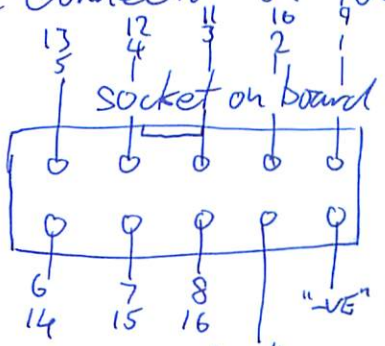
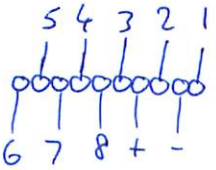
power from IDC connector on Netion card.

IDC connector:





cable

(12 or 5v - 12 on the o/p connector,
5v on the i/p connectors)

4050's are powered from the i/p IDC connector(s) (5v)

DAC is powered from the o/p IDC connector (12v)

- this is necessary as the DAC supply must be > the voltages it produces (10v here, max)

Maxon Servo Amp LSC 30/2

12-30V 2A

There are also switches to set - look at device for these -

(voltage reg mode)

pin

1 — + motor
2 — −

3 — V_{cc} (12v)

4 — GND (0v)

5 — +3.9v wrt "Data ground"

6 — −3.9v wrt 'DGround'

8 — A

This is the control stage with a pot. We use the o/p of the DAC. wrt the pure ground, the two reference voltages are actually 10v and 2.4v (rather than ± 3.9v

7

9 — to output 9 of Netlom card - this is the 'motor disable' signal (1 = enable, 0 = disable)

10 — 4.7k

11

7524 DAC

- using 'voltage reference mode' (so some of the pin labels are backwards, and 'inputs' are used as 'outputs'