Arduino Interface to Nuclear Rack
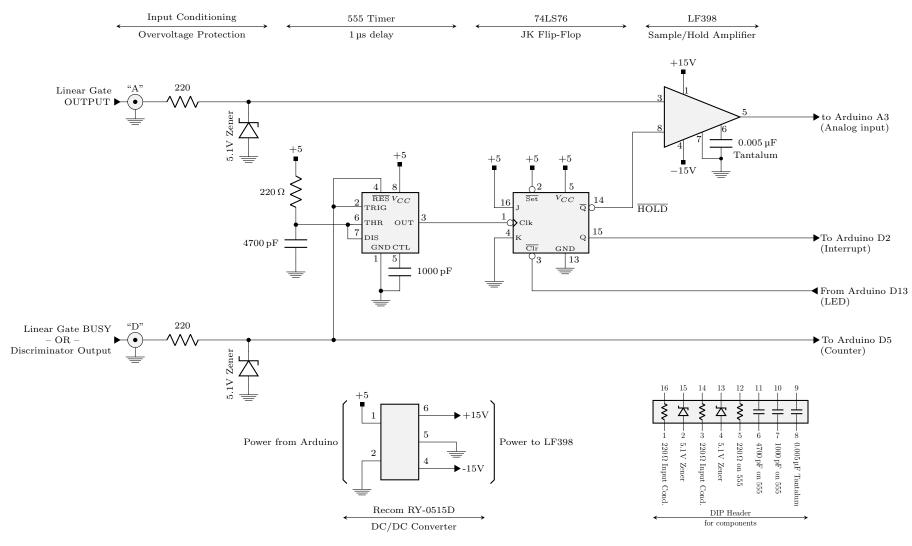# For Pulse Height Analyzer and Counter

Input Conditioning
Overvoltage Protection

555 Timer
1 µs delay

74LS76
JK Flip-Flop

LF398
Sample/Hold Amplifier

+15V

Linear Gate OUTPUT

"A"

220

5.1V Zener

3

1

8

4

7

5

6

to Arduino A3
(Analog input)

−15V

0.005 µF
Tantalum

+5

220 Ω

4700 pF

+5

4 8

2 | $\overline{RES}$ V_{CC}

TRIG

6 THR OUT 3

7 DIS

GND CTL

1 5

1000 pF

+5 +5 +5

16 | J | $\overline{Set}$ | V_{CC} | 14

1 Clk

4 K

$\overline{Q}$

$\overline{HOLD}$

2 5

$\overline{Clr}$ GND

3 13

15 Q

To Arduino D2
(Interrupt)

From Arduino D13
(LED)

Linear Gate BUSY
– OR –
Discriminator Output

"D"

220

5.1V Zener

To Arduino D5
(Counter)

Power from Arduino

+5

1

2

6

5

4

+15V

−15V

Power to LF398

Recom RY-0515D
DC/DC Converter

16 15 14 13 12 11 10 9

1 2 3 4 5 6 7 8

220Ω Input Cond.
5.1V Zener
220Ω Input Cond.
5.1V Zener
220Ω on 555
4700 pF on 555
1000 pF on 555
0.005 µF Tantalum

DIP Header
for components

Dan Briotta, 03/27/2018