DSG-EIC DIRC Meeting

Date: November 14, 2022
Time: 11:00 AM – 12:00 PM

Attendees: Peter Bonneau, Aaron Brown, Imani Burton, Pablo Campero, Brian Eng, George Jacobs, Greg Kalicy, Tyler Lemon, Marc McMullen, and Beni Zihlmann

1. **Laser area occupancy will be controlled with one main key**
   All
   1. A single control unit key will allow interlock control from either the inside control unit or the outside control unit only
      - The single key eliminates need for a time limit between disabling inside unit and enabling outside unit
   2. When inside control unit is in use, low power filter will be moved into place
      - A separate expert key, stored in Keywatcher box in EEL hallway, will be used to remove filter while room is occupied
   3. When outside control unit is in use, filter is removed and laser is at full power

2. **Alternative DAQ system using an Arduino and external ADC will be developed**
   Tyler Lemon
   1. 16-bit external ADC communicates to Arduino using I^2C
   2. Arduino processes ADC measurements, displays data to a local display, and allows ADC data to be sent via RS-232 serial to main data acquisition computer
   3. Lead time is ~2 weeks compared to Keithley digital multimeter of ~16 weeks

3. **Tyler Lemon will send parts and price list to EIC DIRC group before submitting PR**
   Greg Kalicy, Tyler Lemon, Marc McMullen, and Beni Zihlmann

Category	Item	Source	Min Quantity	Quantity to Buy
Laser Interlock Sysetm hardware	Emergency stop buttons	Grainger	5	6
	Beacon	Grainger	1	1
	Timer relay	Grainger	3	4
	Magnetic Locks	Grainger	1	1
	Door monitoring contacts	Allied	2	3
	Red LED Panel Indicator (5 V)	Allied	8	10
	Reset button	Allied	2	3
	Key switch	Digi-key	3	5
Interlock Circuit Components	8-input NAND gate	Digi-key	2	10
	quad 2-input NOR gates	Digi-key	1	10
	SS SPST-NO Relay	Digi-key	3	6
	NPN Transistor	Digi-key	1	10
DAQ Components	ADC breakout board	Digi-key	2	3
	Arduino	Digi-key	1	2
	Arduino screen adapter	Digi-key	1	2
	Arduino display	Digi-key	1	2
Low-Power Filter	2.0 OD filter	Thorlabs	1	1
	Motorized flip mount	Thorlabs	1	1
	Support base	Thorlabs	1	1
	1" optical post	Thorlabs	1	1
	1.5" optical post	Thorlabs	1	1
	2" optical post	Thorlabs	1	1
	2" post holder	Thorlabs	1	1
	1" post holder	Thorlabs	1	1
	SMA-to-BNC cable	Thorlabs	2	2