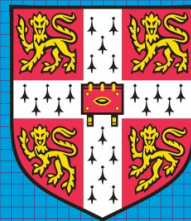


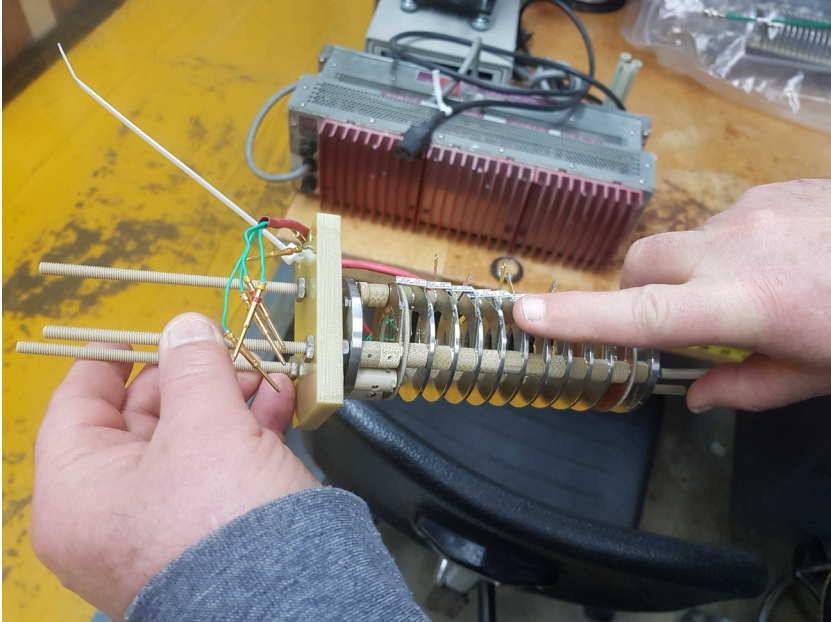
Purity Monitor Rack Status

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21/4/22



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What is this Rack for?



- This is to allow for the running of the **purity monitor** system
- This is placed into the argon tank of the LArTPC in order to **check the argon for impurities**
→ Results could be impacted if the argon is not sufficiently pure, leading to a **lower electron lifetime**
- Mostly for initial set up, detector can take over later
- The aim is to **monitor the efficiency of the filtration system** to ensure all is well

Rack Elements - Housing

- An **appropriate rack** was found and moved from PC4 to Nova
- This has about 40U of space, and sides and a back door
- Still needs cleaning and adjusting (Friday)



Rack Elements – PC DAQ

- `PC Data Acquisition`
- This is essentially a **windows computer** tucked in to let us communicate with the rack systems
- 3 U
- Max power usage 400 W
- Should go below the NIMbin due to cable placement
- We have this currently



Rack Elements – Wiener Minicrate

- A **housing element** for other elements
 - One **control module**
 - Contains **high voltage modules**, it powers them and communicates with them
- 5 U
- Max power usage 1200 W
- Should go above the NIMbin due to cable placement as HV needs to go to NIMbin
- Ethernet to PC cable needed
- We have it currently



Rack Elements – Slideable Table

- A table to **put laptops on** when talking to the PC
- Originally was going to take a terminal/keyboard system from PC4, but this is difficult to access
- This should be at around 5 foot height (~34 U)
- 1 U
- Need to steal one/buy one



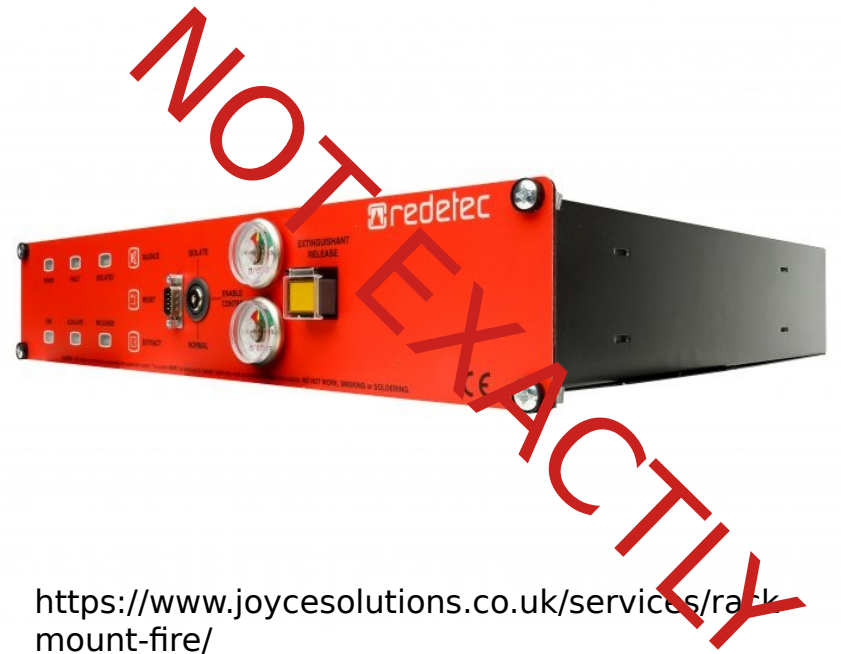
Rack Elements - NIMbin

- **Nuclear Instrumentation Modules**
- Can have own power supply
- It provides **housing** for the **pre amplifier module** - this receives information from the purity monitor , goes to high voltage modules
- Cable will come from the front of this - hence placement between PC DAQ and Wiener Minicrate to allow it to be threaded nicely
- 5 U
- Don't have modified NIMbin yet



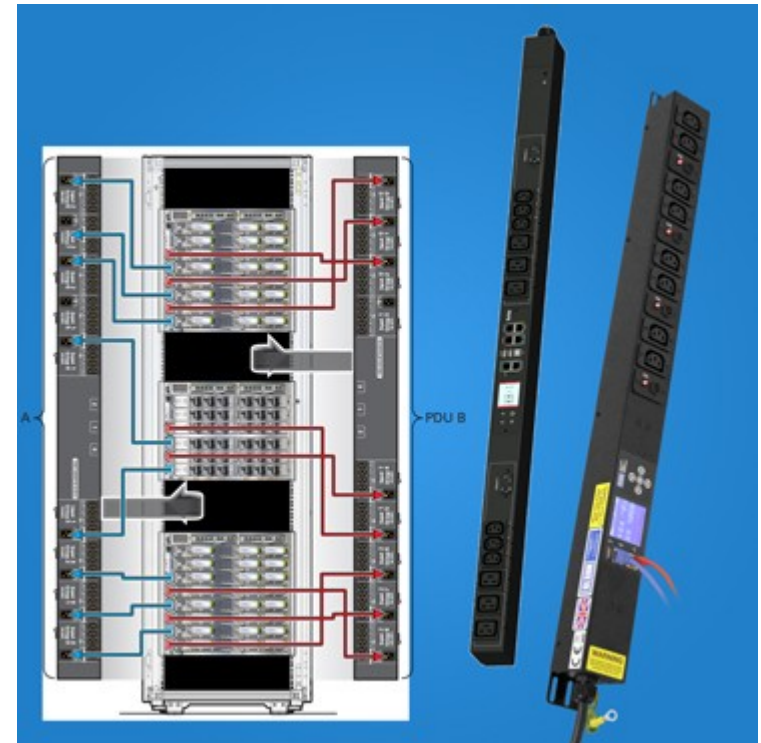
Rack Elements – Rack Protection System

- This is an **alarm system** so we can tell if the rack is on fire/in peril
- This goes at the top of the rack
- 1U
- We should get one



Rack Elements – Power Distribution

- **Brings in AC power** and has power strips down back of rack
- Powers everything that wants it
- Can cut power if RPS detects smoke
- 3 U?
- Need to scavenge one



Rack Graphic

This is the current draft of the rack plan for the purity monitor system. Once the rack has been cleaned, these can start to be placed in.

PURITY MONITOR	U
Rack Protection System	1
Space	
	5
Slidable Table	1
Space	
	3
Wiener Minicrate	
	5
Space	
NIM Bin	
	5
Space	
PC DAQ	
	3
Space	
Power Conditioning Module	
	3?
	40