

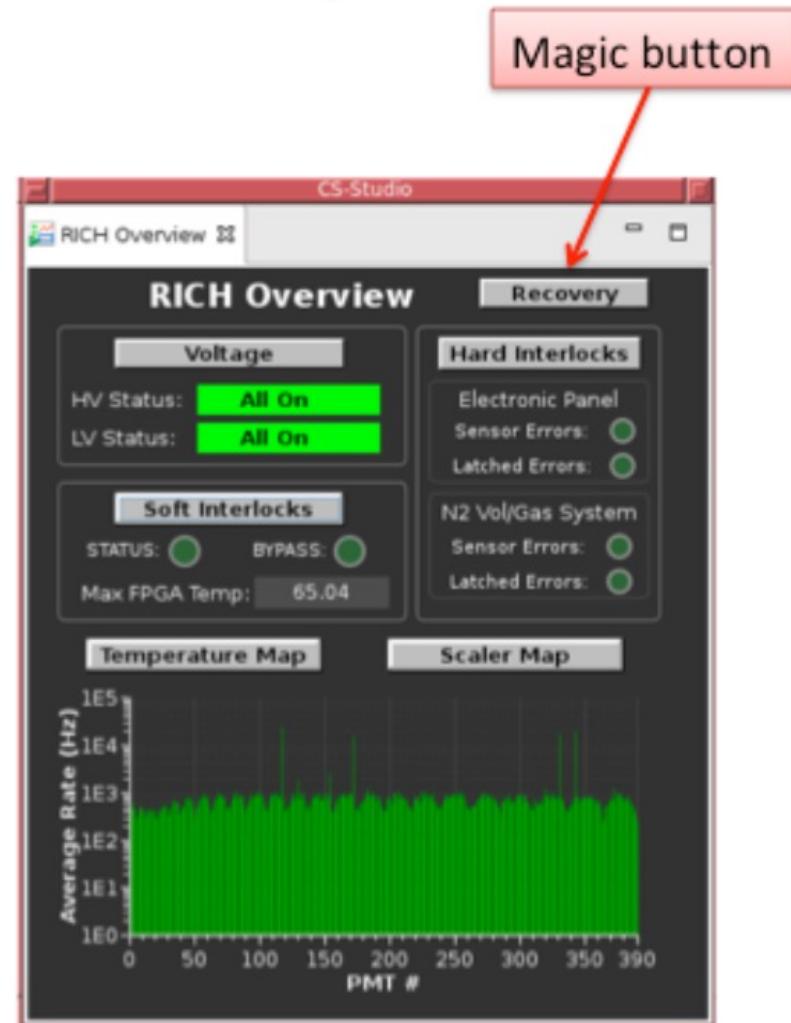
# RICH Control Manual

September 20, 2021

**Do RICH RECOVERY  
every day shift and in  
case of missing tiles in  
the temperature or  
scaler plots**

- The radiation damage causes the malfunctioning of frontend. Dead tiles appeared.
- The damage is not permanent. It can be recovered by switching LV OFF/ON
- RICH front end is sitting in the beam of secondary particles.
- **One click RICH recovery procedure**
  - RICH HV OFF/ON
  - Reboot rich4 crate
  - Set the DAQ parameters to the RICH fronernd
  - Reboot iosrich

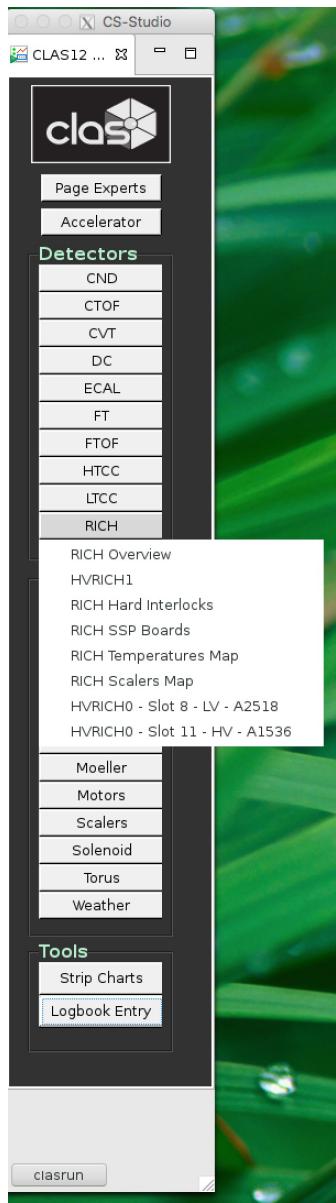
# RICH Recovery



# RICH mainframe remote reboot

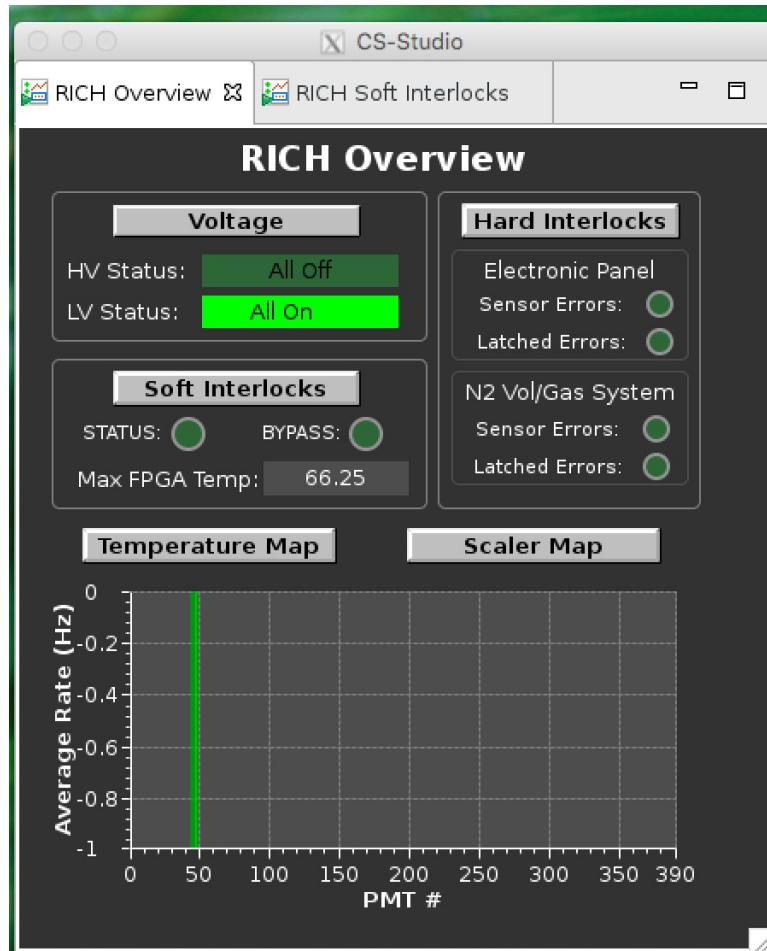
In case of communication lost with the RICH mainframe try to reboot it remotely

- To reboot only the CPU:  
`caenhvReset.py --soft hvrich1`
- To power cycle the whole thing, causing all voltages to go to zero:  
`caenhvReset.py --hard hvrich1`



- Press RICH on clascss menu
- Chose RICH Overview

# RICH Overview



- **Voltage** control RICH HV and LV
- **Temperature Map**

Shows the temperature of the RICH electronic boards

- **Scaler Map**

Presents the rate of the MAPMT pixels

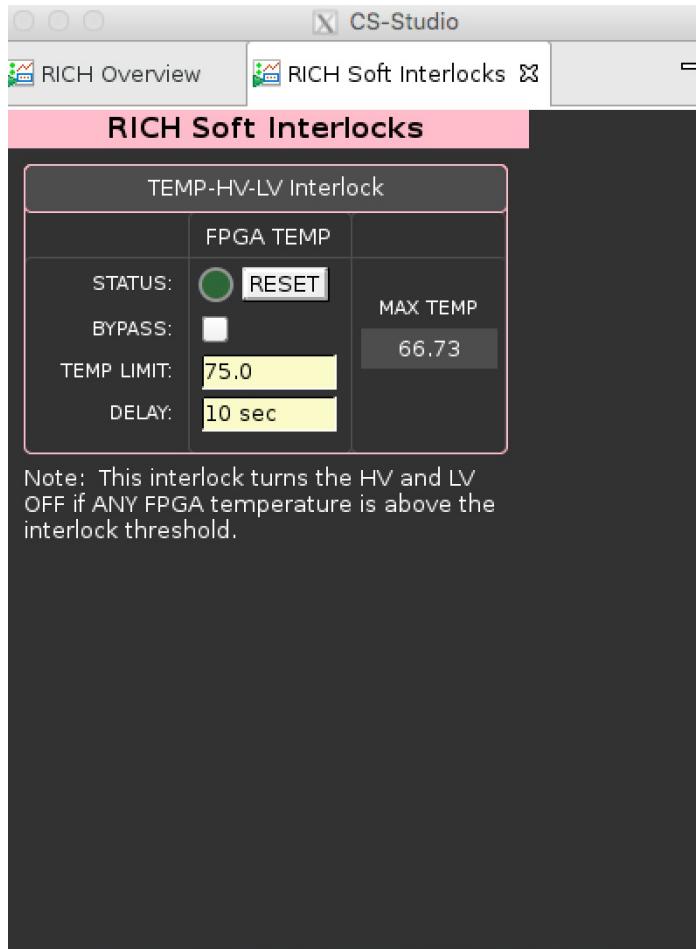
- **Hard Interlock**

Control the RICH interlock

- **Soft Interlock**

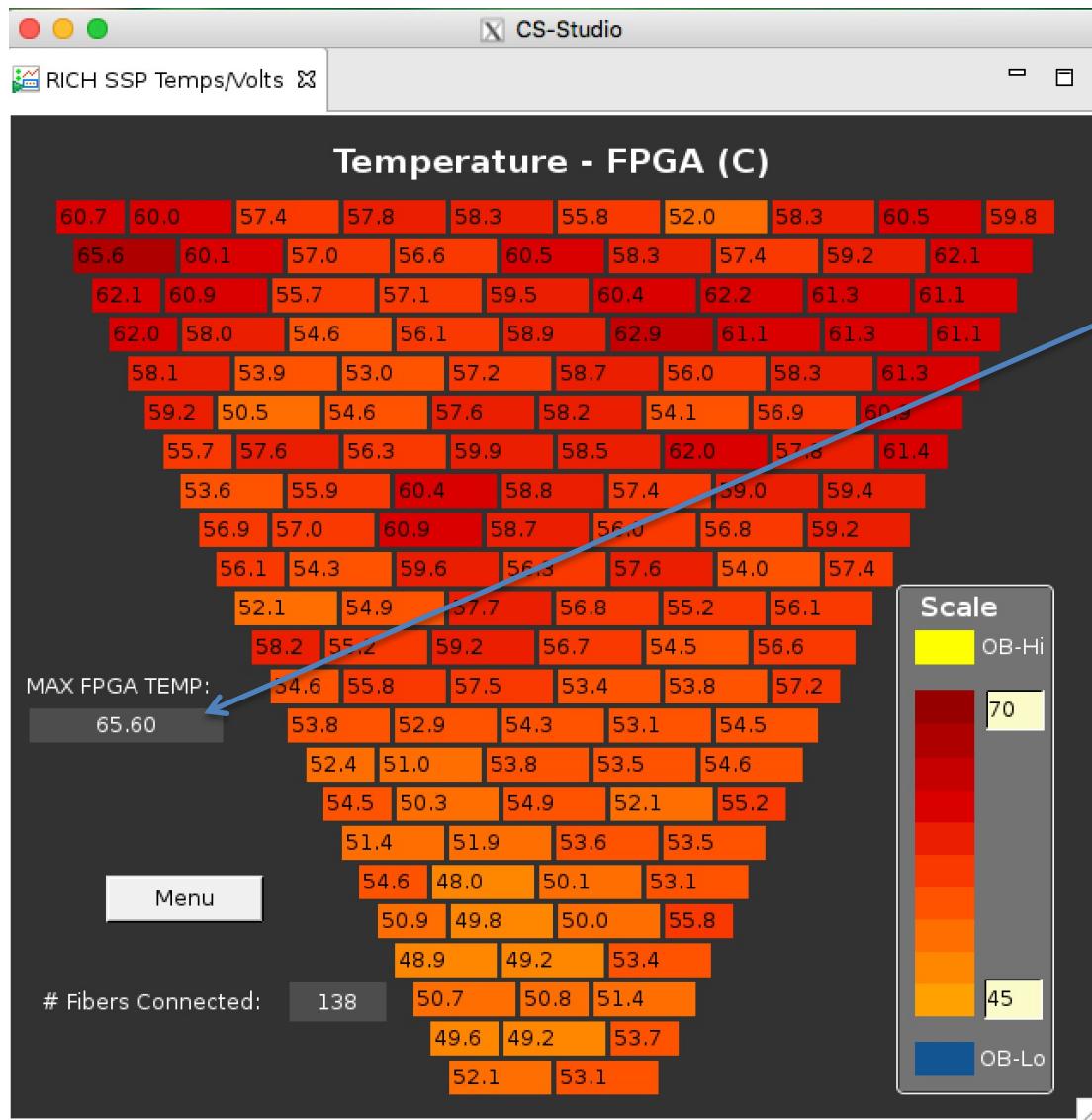
Control the max temperature of the RICH electronics

# Soft Interlock



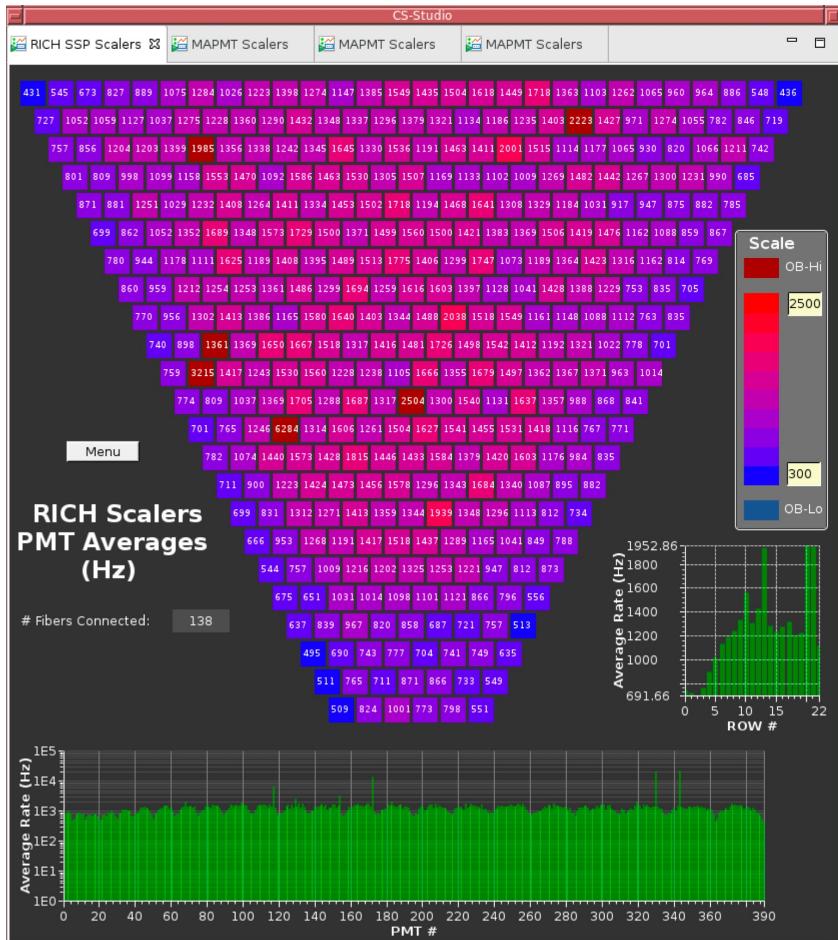
- Max temperature has to be less than 75 C
- Reset the interlock if necessary

# Temperature Map



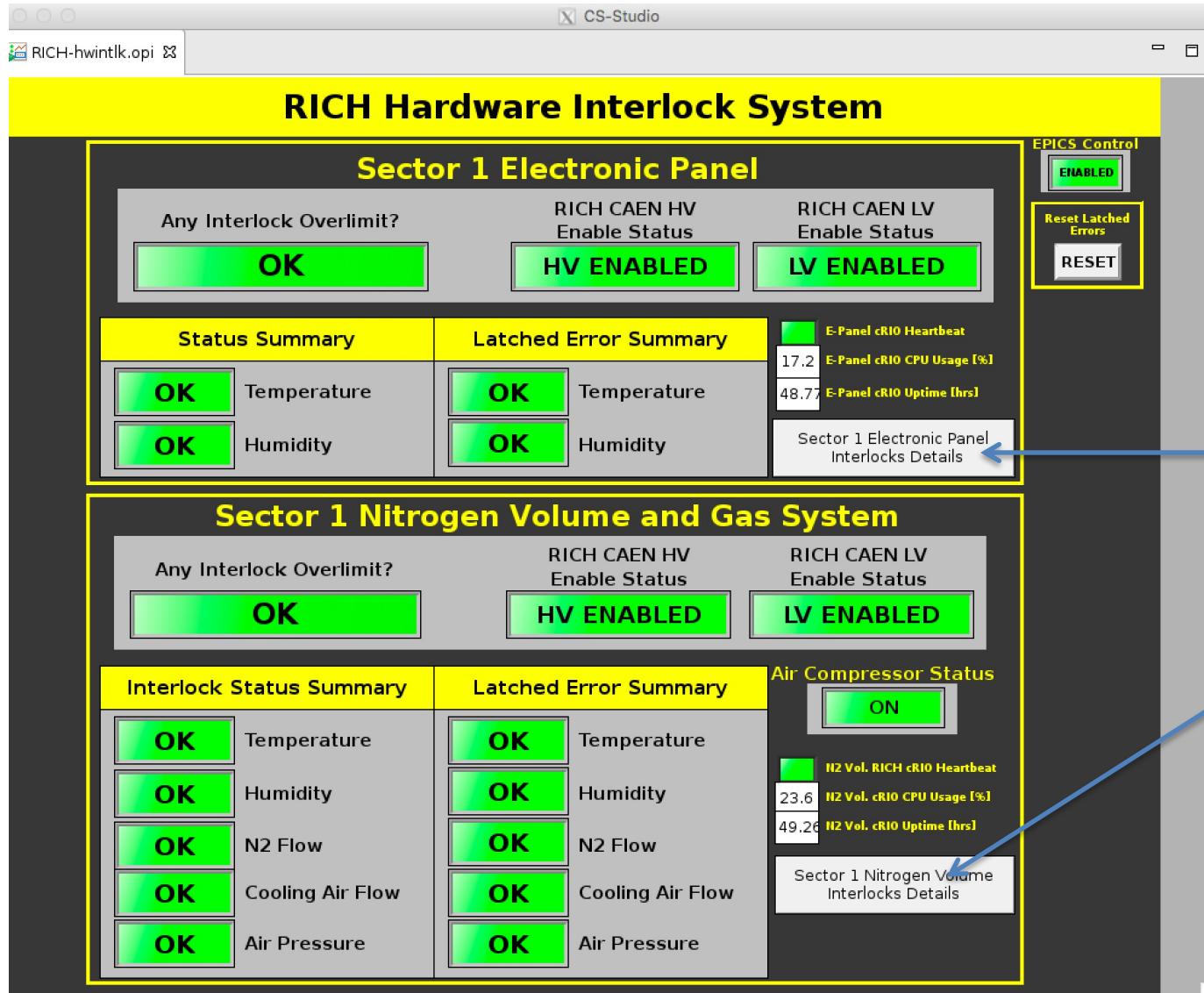
- Max temperature has to be less than 75 C
- Soft interlock switches off The RICH HV and LV if  $t > 75^{\circ}\text{C}$
- All tiles have to be present

# RICH scalers



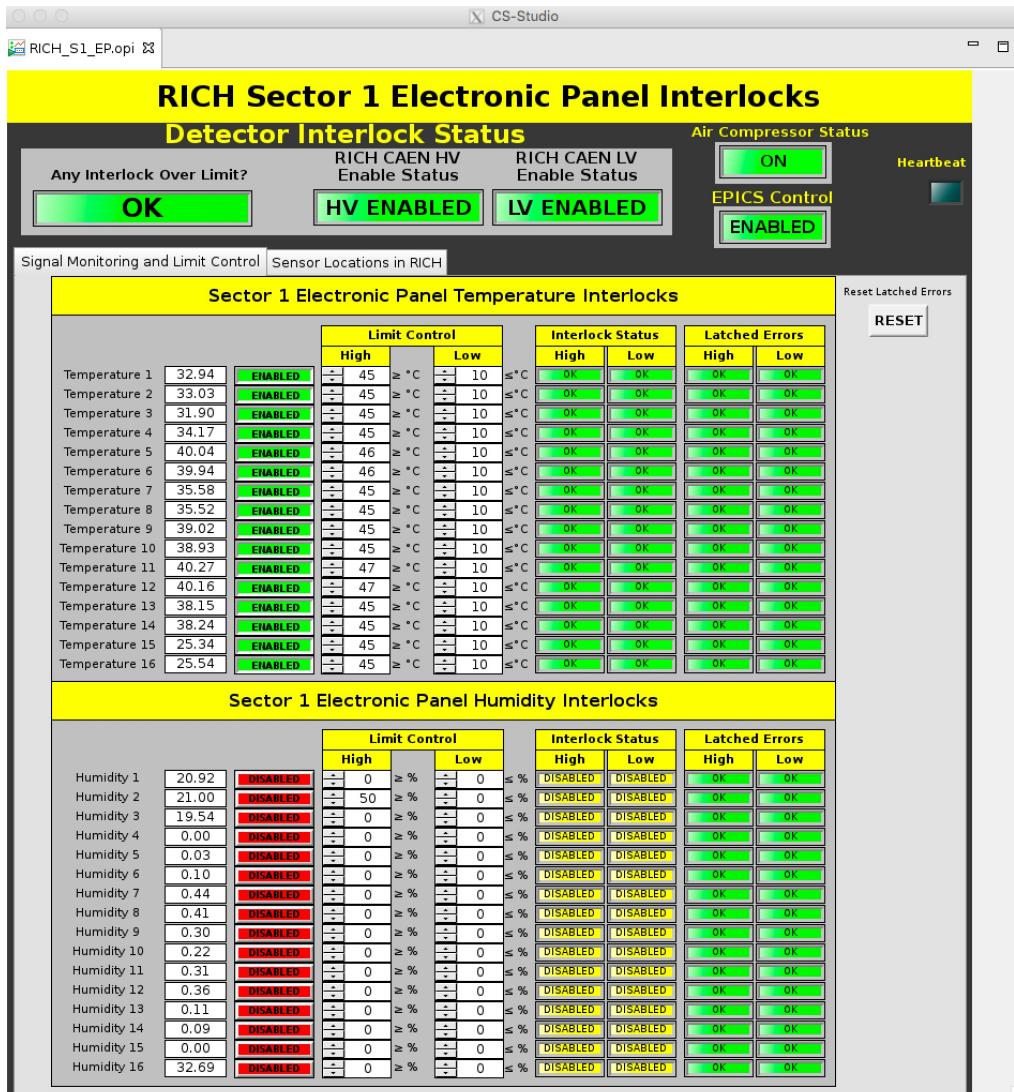
- The plot presents the average rate of the MAPMT pixels
- ALL MAPMTs have to be present

# Hard Interlock



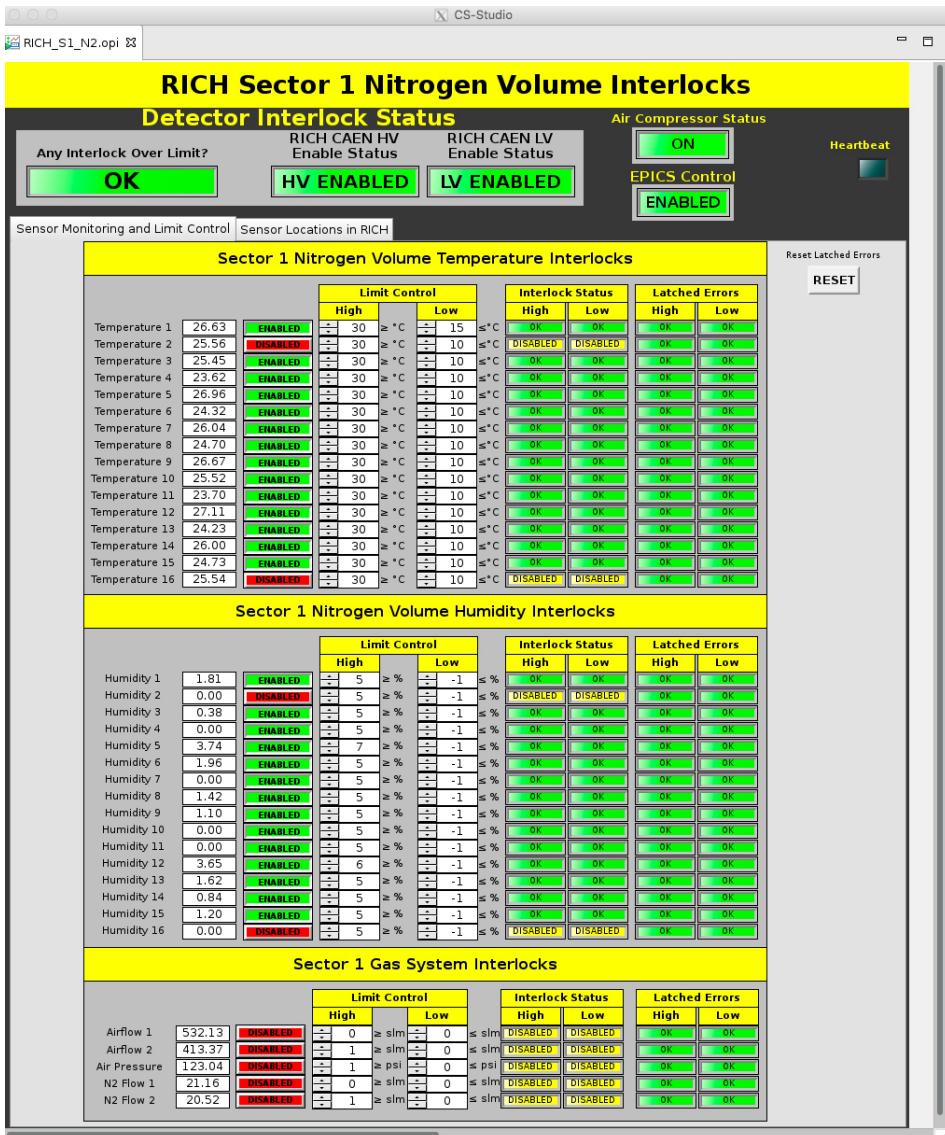
- Hard Interlock controls the temperature and humidity inside the RICH detector
- Press this button to view the Electronic panel Interlock
- Press this button to view the Nitrogen volume Interlock

# Electronic Panel Interlock



Check the temperature and humidity

# Nitrogen Interlock



Check the temperature and humidity