

# PDS Shifter Problems and Controls

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# Outline

- 1 Questions/Problems Shifters Asked
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  - Far Detector
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# Questions/Problems Shifters Asked

- Problem: PS displays, Rack monitor suddenly turned pink.

Nova Far Detector Rack Monitor Summary

14-Jul-2014 23:23:56

|                                 | LV-14  | LV-13  | Net02  | LV-12  | HV-02  | LV-11  | LV-10  | LV-09  | LV-08  | LV-07  | LV-06  | LV-05  | Net01  | LV-04  | HV-01  | LV-03  | LV-02  | LV-01  |        |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                 | RR15S  | RR14S  | RR13N  | RR13S  | RR12N  | RR12S  | RR11S  | RR10S  | RR09S  | RR08S  | RR07S  | RR06S  | RR05N  | RR05S  | RR04N  | RR04S  | RR03S  | RR02S  |        |
| Interlock Status                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Air flow (ft <sup>2</sup> /min) | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» |
| Top Temp (°C)                   | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» |
| Bottom Temp (°C)                | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» | «57 1» |

North South

Front End Uptime: 14.601 hour Uptime Updating

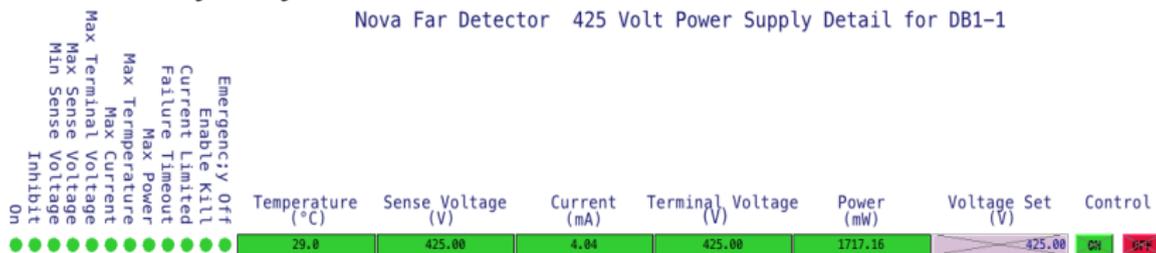
**Solution:** This is most probably due to a water leak. Might also be Network issue/Power glitch. Dry Gas PLC display will show if water leak. Follow the Leak recovery procedure.

- Problem: After power glitch some of the displays did not recover properly. LV/HV summary pages were fine, the rest showed disconnected.

**Solution:** Need to contact ACNET Engineers. Call ACNET forwarding number. They will need to reboot some of the nodes.

# Questions/ Problems Shifters Asked

- If for whatever reason the PS went down, one of the flags besides On/Off may stay red. Channel will not Switch On.



**Solution:** Power cycling the crate clears the flag.

- The HV channels do not recover the set value (by Design). Might display nonsense number (negative values)

**Solution:** Need to reenter the proper voltage setting in the pink box to ramp up the channel.

- DCM is unresponsive and unreachable.

**Solution:** Power cycle DCM (Turn Off/On 24 V for that channel) than try to ping the IP address.

# Far Detector

FAR Detector power supplies are accessed by network address instead of IP address. You will need a VPN.

- LV Power Supply Network Address:  
`nova-far-lvpower-NN-MM.fnal.gov`  
 NN = Diblock number (01-14)  
 MM = LV position in the Relay Rack (in other words: crate number)
- HV Power Supply Network Address:  
`nova-far-hv-power-NN.fnal.gov`  
 NN = crate number (01, 02)

NEAR Detector power supply network and IP addresses.

The IP addresses for ND power supplies:

| Node Name             | MAC address    | Fermilab tag | IP              |
|-----------------------|----------------|--------------|-----------------|
| NOVA-NDUG-LVPOWER-1-1 | 0050-c22d-cbd4 | 575544       | 131.225.198.170 |
| NOVA-NDUG-LVPOWER-1-2 | 0050-c22d-cc12 | 575564       | 131.225.198.165 |
| NOVA-NDUG-LVPOWER-2-1 | 0050-c22d-c9f5 | 556830       | 131.225.198.166 |
| NOVA-NDUG-LVPOWER-2-2 | 0050-c22d-cc26 | 575583       | 131.225.198.167 |
| NOVA-NDUG-LVPOWER-2-3 | 0050-c22d-cbe0 | 575555       | 131.225.198.168 |
| NOVA-NDUG-HVPOWER     | 0050-c22d-cbfb | 557752       | 131.225.198.169 |

# Control via Simple Network Management Protocol

Both LV and HV power supplies can be controlled via SNMP. The `WIENER-CRATE-MIB.txt` includes ALL commands needed to communicate with the Power Supplies.

- **snmpget** - reading 1 channel
- **snmpwalk** - reading ALL channels
- **snmpset** - writes / sets 1 channel
  - To turn the crate on:  
`snmpset -v 2c -m +./WIENER-CRATE-MIB.txt -c guru nova-far-hv-power-01.fnal.gov sysMainSwitch.0 i 1`
  - To return the set voltages of one HV channel (e.g. u400 - first channel in slot 4):  
`snmpget -v 2c -m +./WIENER-CRATE-MIB.txt -c guru nova-far-hv-power-01.fnal.gov outputVoltage.u400`
  - To set the set voltages for HV channel u400 to 450V:  
`snmpset -v 2c -m +./WIENER-CRATE-MIB.txt -c guru nova-far-hv-power-01.fnal.gov outputVoltage.u400 F 450`

To return the set voltages of all HV channels:

```
snmpwalk -v 2c -m +./WIENER-CRATE-MIB.txt -c guru  
nova-far-hv-power-01.fnal.gov outputVoltage
```

- **SNMP** command
- **-v 2c** specifies the protocol version to be used.
- **-m +./WIENER-CRATE-MIB.txt** is the path to MIB file.
- **-c guru** sets the community string for SNMP v2c transactions. It basically gives the administrative privileges.
- IP / Network address of the Power supply.
- Name of the system, output entry etc. you want to set, output on a screen or turn ON/OFF. The full list of systems, variables can be found in MIB file.
- **i** - stands for integer (note lower case, important).
  - i 0** - means turn the Switch OFF.
  - i 1** - means turn the Switch ON.

# For Further Reading

Wiki page and references within:

[https://cdcvs.fnal.gov/redmine/projects/novadcs/wiki/Power\\_Supplies\\_](https://cdcvs.fnal.gov/redmine/projects/novadcs/wiki/Power_Supplies_)

Here you will find:

- Detailed info about the NOVA Power Distribution System.
- The information about the Far and Near Detector PS Network and IP addresses, channel names.
- Shifter Instructions how to interact with Synoptic displays.
- WIENER-CRATE-MIB.txt file and some scripts. (Needs to be in the same directory, where you execute the SNMP commands.)