**HV subsystem**

**Functionality:**
Power distribution for 40 detector modules

**Modules:**
- 2 x 20 channels
- CAEN SY527/A1732
- 12 channels modules
- loc: S2B03 or S2B04 in the counting room
- 2 x 20 HV switches
- loc: HV patch panels

**Controls:**
- individual V set (V tables load)
- individual/global V on/off
- individual/global occupancy limit set
- individual I limit set (I tables load)
- trip/alarm handling

**Monitors:**
- V/I monitor
- trip counter (time)
- crate T (cooling)

**Interlock/alarm:**
- trip

**Interlock:**
- gas composition
- gas leak
- gas flow
- trip counter
- LV on/off
- cooling water leak/overpressure
- beam
- B field

**Logs:**
- V/I, crate T

**Feedback loop:**
- environment monitor V/I

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**Gas subsystem**

**Functionality:**
Gas distribution for 40 detector modules

**Modules:**
- 1 Mixer Unit
- 2 Distribution Modules
- 10 (+10 return) x 2 lines

**Controls:**
- Gas composition
- Gas flow
- Gas pressure
- Gas leak (oxygen) for HV overpressure

**Monitors:**
- Gas composition
- Gas flow
- Gas pressure
- Gas leak (oxygen) for HV overpressure

**Interlock/alarm data:**
- composition for HV flow for HV
- gas leak (oxygen) for HV overpressure

**Logs:**
- Composition, flow, pressure, water and oxygen content

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**Environment monitors**

**Functionality:**
Monitor of ambient T, P, R

**Modules:**
- T monitor
- P monitor
- R humidity monitor

**Controls:**
- on/off

**Monitors:**
- LV for monitors
- T, P, R

**Logs:**
- T, P, R

**Feedback data:**
- for HV system

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**Electronics Data & Trigger**

**Functionality:**
Data & trigger delivery:
- calibration, threshold, delays settings, chips & channels suppression, gain (HV), gas composition loops

**Modules:**
- FE

**Controls:**
- Programmable chip parameters

**Monitors:**
- Chips, channels status

**Logs:**
- Chips & channels status parameters

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**LV subsystem**

**Functionality:**
Power distribution for FE

**Modules:**
- 4x 2 2.5V 10A
- 4x2 2.5V 10A
- 4x1 2.5V 5A
- WIENER

**Controls:**
- on/off

**Monitors:**
- on/off

**Interlock/alarm data:**
- electronics T for LV system
- water flow for LV system
- leak (flow) for LV&HV systems
- water overpressure for LV&HV systems

**Interlock:**
- leak

**Logs:**
- water flow, T, P electronics T

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**Electronics Cooling**

**Functionality:**
Water cooling for the FE

**Modules:**
- Water pressure
- Water flow
- Water T monitor
- T sensors on electronics cards (40 channels)

**Controls:**
- water flow on/off
- water flow
- water pressure
- water temperature

**Monitors:**
- water in/out T, P, flow electronics T

**Interlock/alarm data:**
- electronics T for LV system
- water flow for LV system
- leak (flow) for LV&HV systems
- water overpressure for LV&HV systems

**Interlock:**
- leak

**Logs:**
- water flow, T, P electronics T

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