

Resetting the RPC Avalanche Gas System (also called the 4-Component system) ...

Below is a picture showing how the RPC Avalanche panel (panel 350-730-20) should look normally



1) Press the green reset button and hold it for 10 – 20 seconds, then release. The system should restore itself

2) The isobutane takes a minute or two to come back to the nominal flow

3) Any problems with the gas shack safety system or the LST gas system will shut off gas supplies; restore those systems first

If the LST system is down, it will shut off the isobutane

If the gas shack safety system has tripped, it will shut off the isobutane, freon, and argon

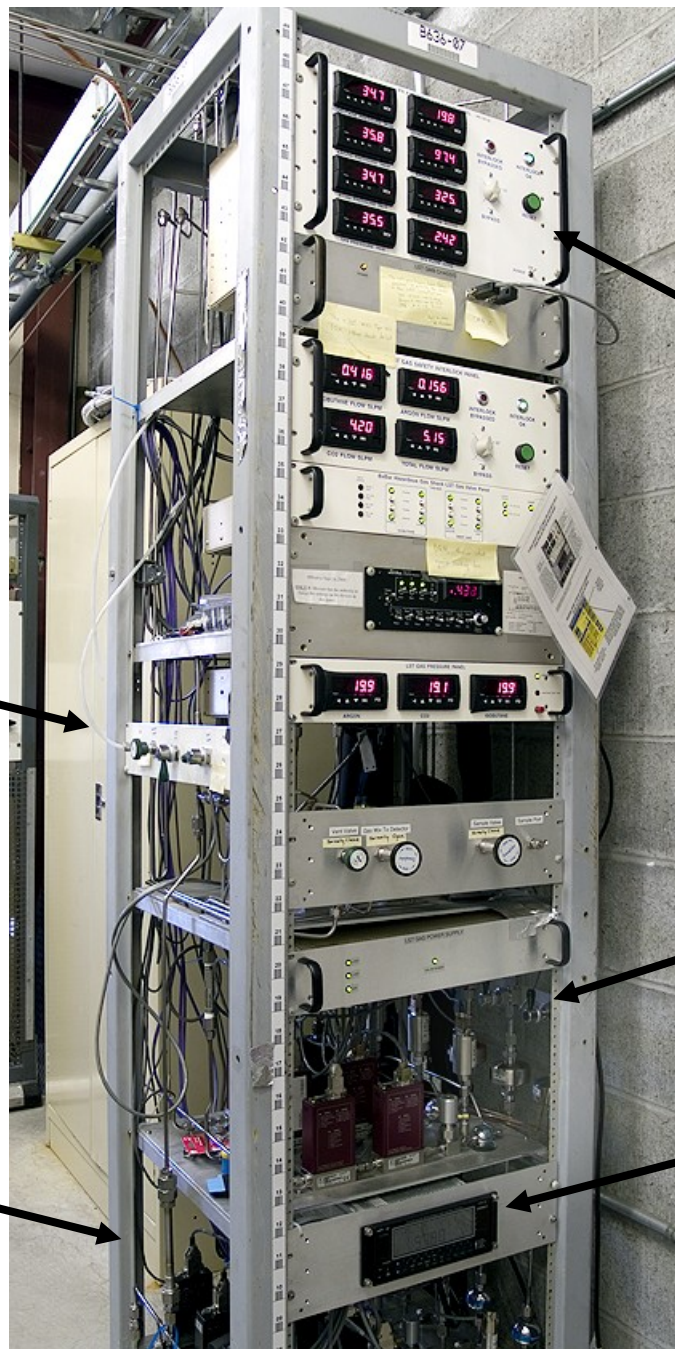
The avalanche system has a relatively low flow, so it may not trip right away after the other systems trip

These are the flows measured by the flow meters

The input gas pressures shown are in absolute pressure, psia

Details to help with restoring the RPC 4-Component Gas System after a trip

- 1) Record the gas pressures for later reference.
- 2) If there is a gas shack safety system fault or if the LST system has tripped, either one must be fixed first. The RPC system shares its argon and isobutane with the LST system, its freon with the RPC system, and its instrument air with both. Gas shack faults will shut off the argon and the freon; a gas shack fault or an LST system fault will shut off the isobutane.
- 3) The input gas pressures normally read 34-36 psia. (Note these gauges read absolute pressure.) These are measured after a regulator that buffers the avalanche system from variations in the incoming pressures. The measured pressures may not respond immediately if an outside supply has been shut off.
- 4) The SF₆ supply is outside in the inert gas area, a lone green bottle by the southeast corner of the shack. The bottle pressure should be > 150 psi, the outlet pressure 25-26 psi.
- 5) The avalanche system flow controller's readings can be checked to see if they correspond to the flows measured by the mass flow meters.



RPC Avalanche System - location of components in the rack

RPC Avalanche monitor panel (panel 350-730-20); the flows are monitored here

Manual valves; these determine where the output gas goes: to a vent, to a sample port, or to IR-2

Manual valves (next to the wall); these can shut off each of the input gas lines

The actual flow controllers and flow meters, etc., for the system are down here

RPC Avalanche flow control box; this determines what the flows are set to

The RPC Avalanche Gas System's supply of SF₆ ...

~26 psi
of output
pressure



- 1) A bottle of SF₆ is located outside the southeast corner of the gas shack
- 2) The bottle pressure should be >150 psi
- 3) If the bottle pressure is less than 150 psi, this means that there is no more liquid and we are running out of SF₆; we should get more soon
- 4) The output pressure should be about 26 psi
- 5) Careful! There is an output valve that could be accidentally closed. Don't touch it

Control box for the mass flow controllers

Isobutane Flow
(20 sccm)
Channel 1

Freon Flow
(325 sccm)
Channel 2

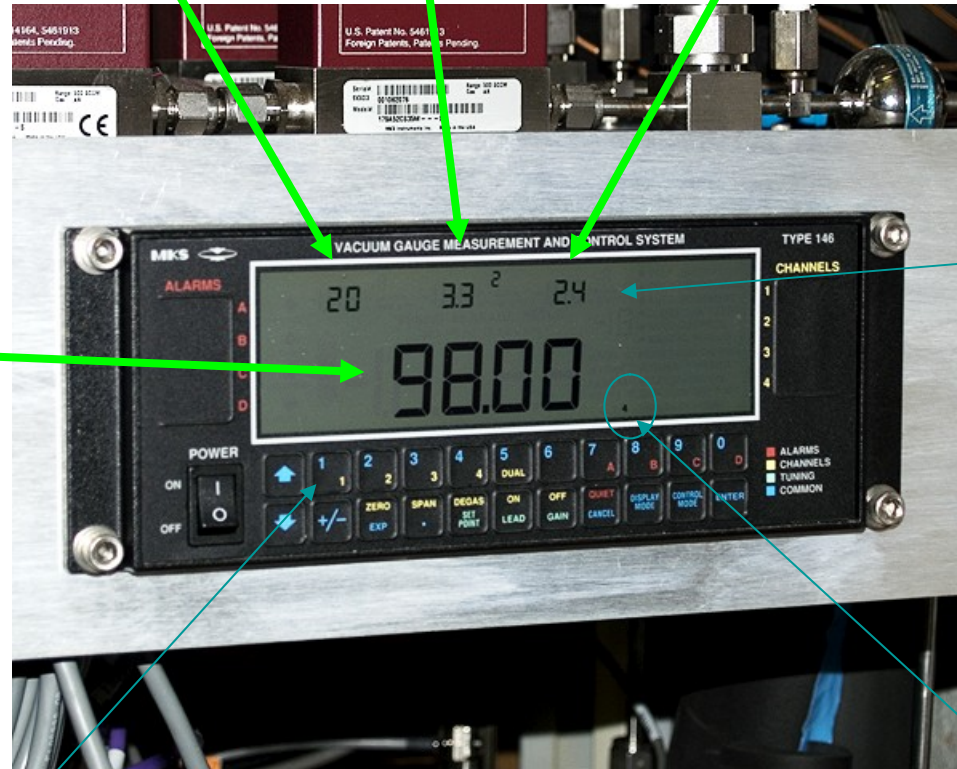
SF₆ Flow
(2.4 sccm)
Channel 3

The display is set up to show what the controller measures for the gas flows

The first three channels have only two digits shown on the display

The main display shows four digits and can display any channel's reading; here it is showing the read-back for channel 4, argon

The arrow shows where you find the number of the channel shown in main display



Argon Flow
(98 sccm)
Channel 4

Other channels can be displayed here to get more accuracy

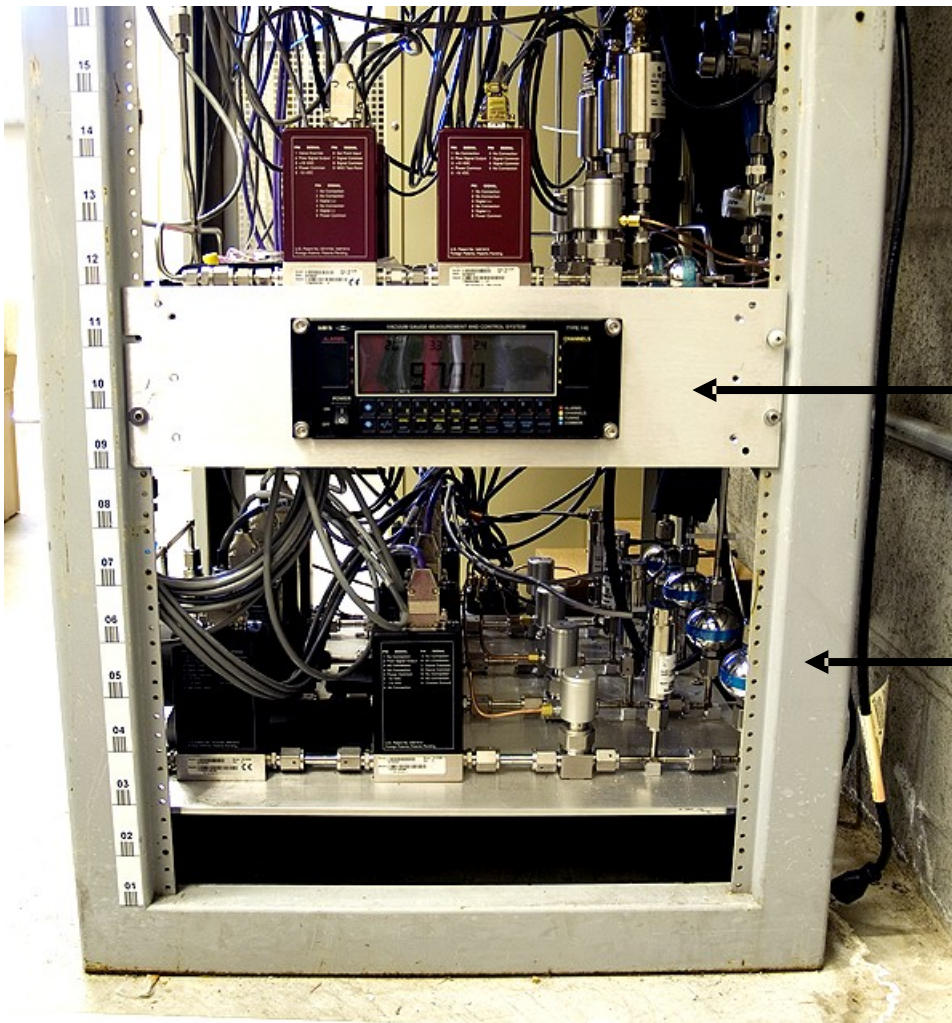
You make the main display show more digits for a channel other than 4 by pressing 1, 2, or 3 on the front panel. When done, put the main display back to channel 4 (press 4 again)

RPC Avalanche System - location of manual valves in the rack



Manual valves (next to the wall); these can shut off each of the input gas lines

RPC Avalanche System - location of components in the rack



Flow control box; gas flows are set here

Flow controllers and flow monitors

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