

CMS RPC

Endcap Input

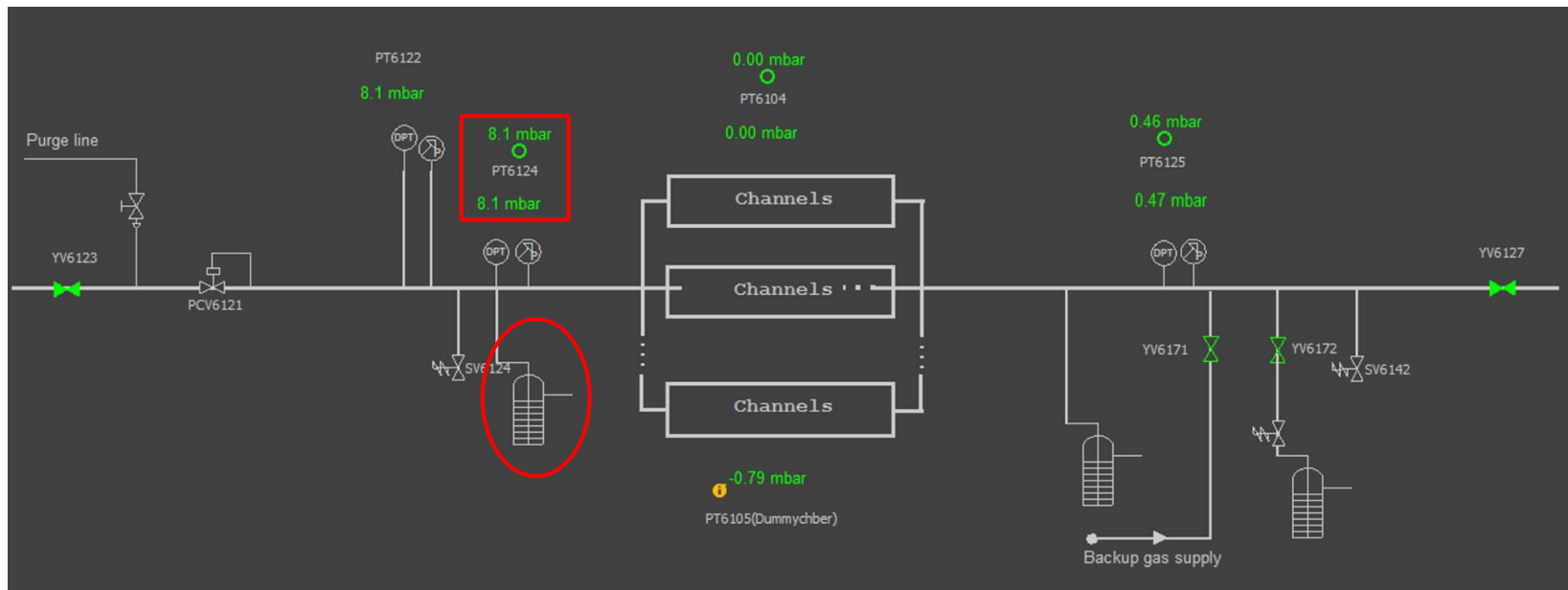
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EP-DT
Detector Technologies

Status

- Endcap distribution racks have bubblers installed at the input as safety for the input pressure before chambers
- Current bubbler level is 8-10 mbar (max allowed by dimension)
- Input pressure depends on chamber impedance and gas flow



Status

With current settings

- Most of the racks are at bubbling limit
- Impossible to set higher flows without gas bubbling
- Bubblers already filled at max level, cannot be filled more (higher pressure)
- Bubblers already of max dimension for the racks, cannot be changed

Position	Rack #	Input Pressure	Flow l/h
RE-1	61	8.1	165
RE-2	62	4.7	181
RE-3	63	9.2	156
RE-4	64	4.5	158
RE-1	65	8.2	145
RE-2	66	6.3	183
RE-3	67	7.4	186
RE-4	68	9.5	312
RE+1	79	9.0	119
RE+2	80	5.2	176
RE+3	81	8.1	171
RE+4	82	5.3	152
RE+1	83	9.5	164
RE+2	84	7.0	167
RE+3	85	5.5	174
RE+4	86	12.7	300

Possible Actions

- Install safety valves in place of bubblers
minimum calibration pressure ~ 50 mbar -> already too high for chambers
the only *safety interlock* for chambers is at software level
- Possible to add normally open quick-connectors at output manifold
currently connectors are normally closed, if disconnected output is blocked
risk: increase of chamber pressure without *hardware* interlock
with normally open quick there is no risk + caps can be put if needed for tests
- Barrel has safety valves in place of bubblers with normally closed connectors!
Intervention could be done also on these racks to limit risk also there
-> safety valves are at 85 mbar