

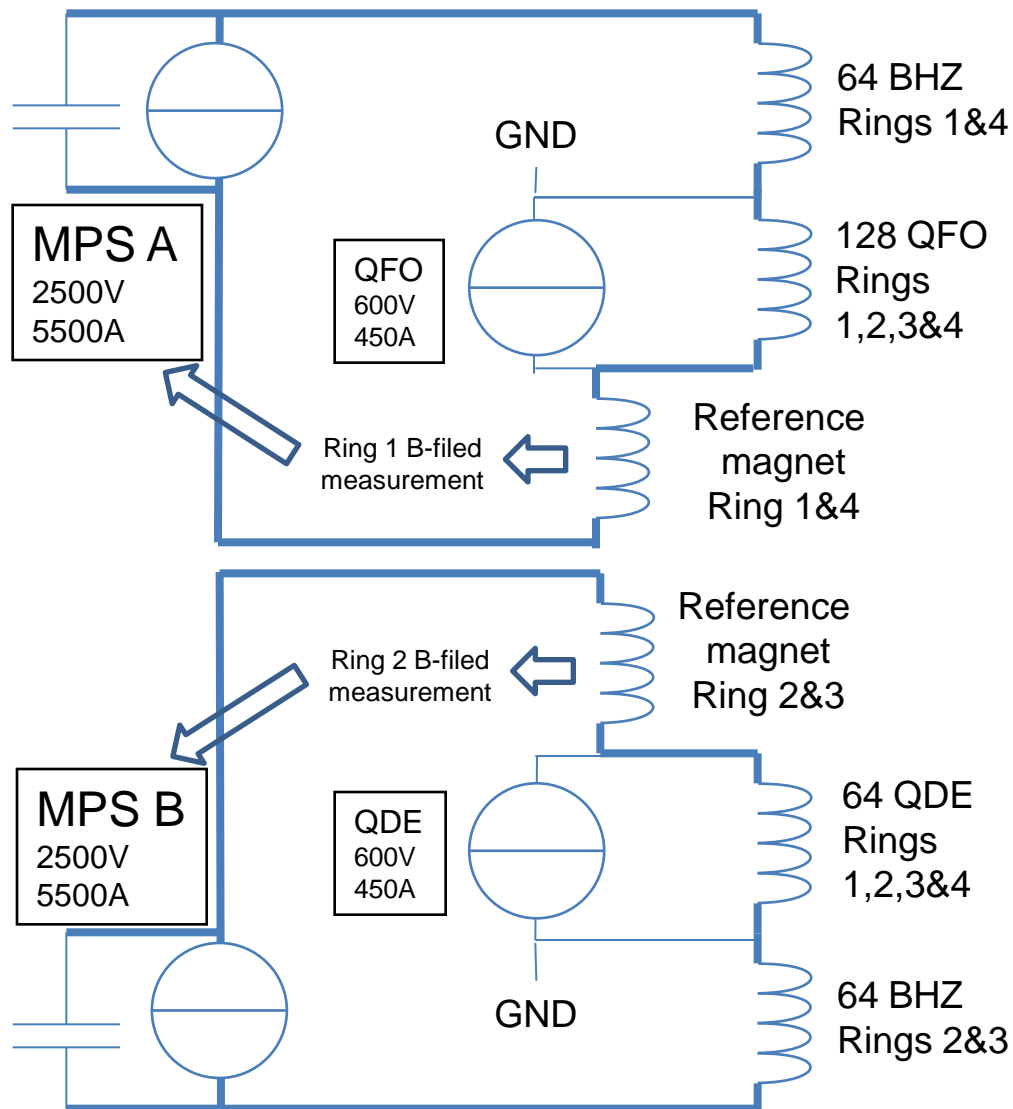
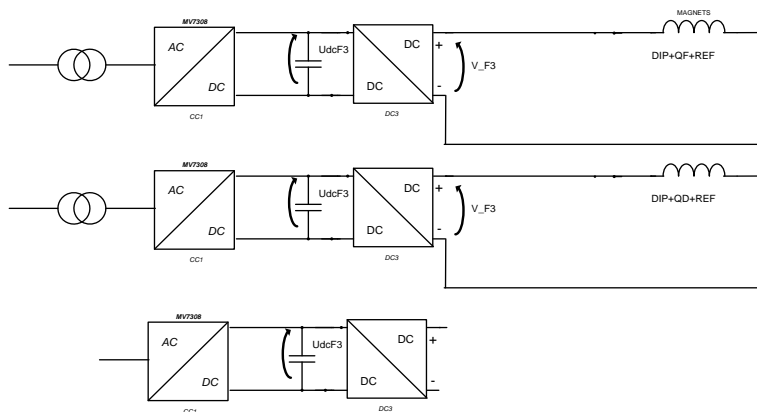
POPS based solution

Benefits

- Overall voltage available increases and would allow a reduction of the RMS current using a faster ramping.
- The capacitor bank totally absorbs the peak power on the 18kV network. Meyrin SVC would then become optional.
- Spare sharing between MPS A and B and eventually with POPS.
- Only a few new cables needed between the reference magnet (BCER) and the MPS.
- New B-field regulation to minimize eddy currents and saturation effects impact at higher current and acceleration rate.

Drawbacks

- Cost estimation 14MCHF using POPS module.



Mixed Alternative

Benefits

- Reuse 2/5 modules of the existing MPS.
- Flexibility on Ground position, reduction of isolation stress.
- New B-field regulation to minimize eddy currents and saturation effects impact at higher current and acceleration rate.
- No coupling between dipoles and quadrupoles control loops.
- Cost of new cables, old cables consolidation and existing MPS upgrade (output filters, thyristors,...) balanced by savings on the new quadrupoles trims.
- Minimal stress on the 18kV network considering the relatively low inductance of the quadrupoles strings

Drawbacks

- Cost estimation 14MCHF using POPS module.

