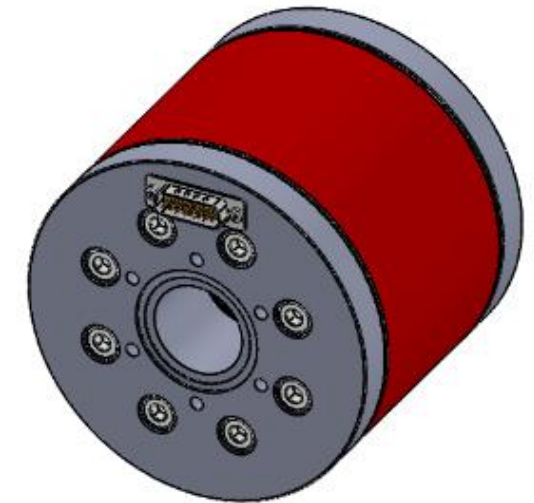


Proposed Current measurement for Diamond II

Alun Morgan

Current measurement

- Most likely: in flange NPCT from Bergoz (along with electronics)
 - Mainly due to space considerations
 - 120mm long,
 - ~134mm outer diameter (dependent on shielding)
 - Inner diameter determined by pipe geometry (20mm in the storage ring)
 - Will have to be installed after the vessel bakeout due to a damage temperature of 80°C
 - Bergoz is currently investigating adding additional RF shielding as the DCCT may have to be placed closer to the magnets than before due to the more crowded lattice design.



<https://www.bergoz.com/products/non-destructive-dc-beam-current-measurement/>

- We plan to install a DCCT in each of the booster and storage rings.
 - This is to replace the existing devices

	Diamond	Proposed NPCT for Diamond-II
Temperature drift ($\mu\text{A}/\text{K}$)	< 30	5
Magnetic field sensitivity ($\mu\text{A}/\text{mT}$)	100	10 (with standard shielding)
Resolution ($\mu\text{A rms @1 Hz}$)	10	Standard model < 5 High Resolution model < 1 Very High Resolution model < 0.5