Ion Gauge Operation

New gauges must be operated carefully to achieve good results and long filament life. The filaments are under tension when new: run both filaments for a few seconds in emission to reduce and equalise the tension. Operate at low emission current in order to outgas them fully before increasing the emission current. Do not subject the gauge to electron- bombardment degas until it has run at the highest emission current available and the resultant pressure burst has fully subsided.

The signal current from a BA gauge at UHV is very small and can easily be disturbed.

Do not allow the cable to be moved in use as this will induce currents and generate piezoelectric and triboelectric charges which can affect UHV measurements for several seconds.

Ensure that the front face of the AIGLx ion gauge connector is kept clean, since effective insulation resistances of the order of 1016 ohms are required. Isopropyl alcohol or CFC on a clean lint-free swab may be used to remove fingerprints or dirt. These solvents do not affect the PEEK housing of the connector.

The nominal bias conditions and sensitivity for this gauge are given in the table below. AML and similar controllers provide these bias voltages.

Recommended operating conditions

	Emission	Degas
Collector	+0V	+0V
Grid	+200V	+500V
Filament bias	+50V	+0V
Maximum Emission Current	10mA	100mA Tungsten 60mA Thoriated