

SQUID S700X

Optional Features

AC Mode Measurement Facility

An AC measurement option is available as a complement to the standard DC method to study the magnetic susceptibility of materials directly. We offer the facility to perform direct susceptibility measurements in AC magnetic fields from 10-2 to 500Hz. The magnet is fitted with a separate superconducting coil for the AC field, providing up to 5 Gauss AC field, and is driven by the main system electronics. With this option, the total sensitivity is maintained at up to 10^{-8} emu in a 1T background field.

Dynamic Range Extender

The standard measurement range (106 total dynamic range) is from 10^{-11} to 10^{-5} Am² can be extended to measure signals as large as 5×10^{-3} Am². The extender is automatically activated during measurement if the sample moment is above the standard dynamic range. This option may be retro-fitted to an existing insert.

Extended Temperature Range

An extension of the standard temperature range to high temperature is available using the oven insert. In normal operation, the system has a continuous temperature range of 1.6 to 370K. With the oven insert this is complemented by allowing measurements in the range 200- 700K.

Transverse Measurement Facility

Simultaneous multiple axis measurements are possible by the addition of secondary (and optionally tertiary) pick-up coils in the main magnet assembly. This enables measurements of sample anisotropic effects. Included with the transverse axis facility is a motor which permits rotation of the sample, controllable to 0.1 degree. This facility allows simultaneous measurement in two or three axes.

Transverse Field Saddle Coil

A small transverse field (~ 1 Gauss) may be applied using an optional saddle coil mounted around the main superconducting magnet. The saddle winding is energised using an independent power supply. A persistent mode switch is an optional feature. The transverse field option is offered for use with the transverse pick-up coil sets.

Fluxgate Field Measurement System

For some applications it is very important to verify the magnet field at very low applied fields. The fluxgate option allows field measurements within the sample column up to a limit of 20 Gauss with a resolution of 10^{-5} Gauss.

Hall Probe Field Measurement

To compliment the fluxgate option, Cryogenic offers the Hall probe facility to enable measurement of magnetic field in the range 0.1 Gauss to 105 Gauss.

Oscillating Mode

The software allows magnetic measurements by a continuous oscillating mode moving the sample 2mm to 5mm peak to peak. The signal is detected synchronously and the moment displayed. This method permits measurements to be made without the need to stabilise the background field.

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Special Measurement Options:

Cryogenic prides itself in being able to keep its clients at the forefront of research using the most advanced technology. As such we are always prepared to consider supplying other special options. Transverse magnetic field coils, optical and microwave illumination of the sample are some examples of the special options that can be provided. Further requests are always welcome.