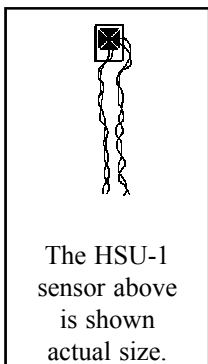


Cryogenic Hall Effect Sensors



The HSU-1 Hall Effect Sensor offers unprecedented ease of mounting in space restricted areas. It is supplied with 0.1 mm diameter lead wires and materials with directions for low thermal expansion coefficient bonding to your sample. The HSU-1 is compatible with Cryomagnetics' Model GM-700 Hall Effect Gaussmeter.

This model is appropriate for operation in liquid helium environments. The temperature range of the sensor is 1.5K to 350K. It features unpackaged mounting construction on a ceramic plate. The specially passivated uncovered electrical system has an active sensing area of 100 μ m X 100 μ m.

The small size of the sensor allows one to make hall effect measurements in areas not previously accessible due to the size of commonly available packaged sensors.

Hall effect sensors encapsulated in axial and transverse mounting packages are also available (HSP series).

SPECIFICATIONS

PARAMETER	UNIT	VALUE
Magnetic field range	[T]	0 - 33
Temperature range	[K]	1.5 - 350
Nominal control current	[mA]	20
Maximum control current	[mA]	50
Sensitivity at I_n	[mV / T]	> 5
Linearity error at 300K, B = 0 - 1T	[%]	< 0.1
Linearity error at 77K, B = 0 - 0.2T	[%]	< 0.02
Linearity error at 4.2K, B = 0 - 5T	[%]	< 1
Mean temp. coefficient of sensitivity at temperature range 4.2K - 77K	[K ⁻¹]	2×10^{-5}
Mean temp. coefficient of sensitivity at temperature range 77K - 300K	[K ⁻¹]	3×10^{-5}
Residual voltage	[μ V]	< 20
Temp. coefficient of residual voltage	[μ V / K]	< 0.02
Input resistance at 4.2K (zero field, including leads)	Ω	1.8
Input resistance at 77K (zero field, including leads)	Ω	2.2
Input resistance at 300K (zero field, including leads)	Ω	4
Output resistance at 4.2K (zero field, including leads)	Ω	1.9
Output resistance at 77K (zero field, including leads)	Ω	2.6
Output resistance at 300K (zero field, including leads)	Ω	6
Quantum oscillations begin:	[T]	> 2
Amplitude of quantum oscillations	[%]	< 0.1
Active area	[mm ²]	0.1
Lead diameter	[mm]	0.1 \emptyset
Dimensions	[mm]	5 X 4 X 0.7