

Model 4G Superconducting Magnet Power Supply

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Standard Features:

- Full color, backlit TFT LCD display
- True bipolar operation
- 0.1 mA current settability
- USB, Ethernet, IEEE-488 interfaces standard
- Four models available:
 - Model 4G-100 (+ 100A)
 - Model 4G-150 (+ 150A)
 - Model 4G-200 (+ 200A)
 - Model 4G-Dual
- (2 separate + 100A outputs. Ideal for vector magnet systems)
- SHIM option available for the 4G-100, 4G-150 and 4G-200
- Intuitive menu system
- Variable ramp rate settings over 5 ranges
- Persistent switch heater
- Fully quench protected
- CE-Marked (*pending for Model 4G-150*)
- LabVIEW drivers

Cryomagnetics is pleased to offer the Model 4G Superconducting Magnet Power Supply.

4G represents our “4th Generation” of power supplies optimized for the high inductive loads associated with superconducting magnet operation. Over the past 23 years, Cryomagnetics has refined power supply designs on a wide variety of superconducting magnets. This experience has made our Model 4G the most advanced superconducting magnet power supply available today.

All Model 4G power supplies are 4-quadrant, true bipolar systems featuring smooth sweeps through zero. All are equipped with USB, Ethernet and IEEE-488.2 interfaces.

A full color, backlit TFT liquid crystal display clearly indicates output current, voltage, limit settings, and system status. No other superconducting magnet power supply provides such complete information to the user on the front panel.

The Model 4G is available in several configurations to fit your application.

The Model 4G-100 is a single output model featuring a bipolar output of ± 100 amperes at up to 800 watts (± 10 volts up to 80 amperes, ± 8 volts at 100 amperes).

The Model 4G-150 is a single output model featuring a bipolar output of ± 150 amperes at up to 1200 watts (± 8 volts up to 150 amperes).

The Model 4G-200 is a single output model with output current up to ± 200 amperes at 1800 watts (± 10 volts up to 180 amperes, ± 8 volts at 200 amperes).

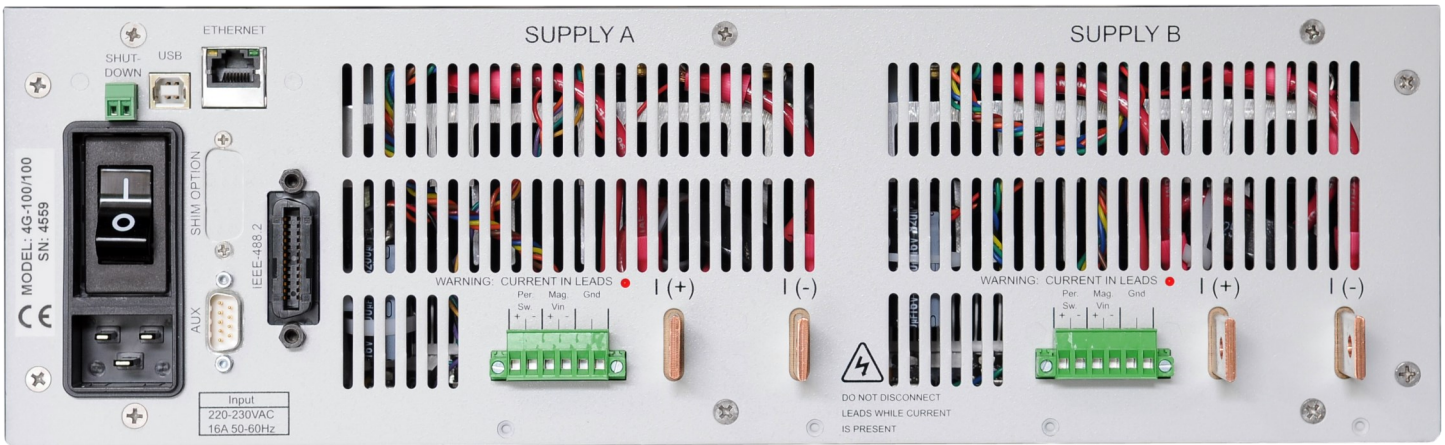
The Model 4G-Dual contains two independently operable ± 100 amperes at 800 watt power modules. The TFT LCD display will indicate output current and voltage of both supplies. Control of both supplies is easily accomplished via the front panel or via computer control.

The SHIM option provides the capability to charge/discharge a superconducting magnet and also charge/discharge superconducting shim coils as found on NMR and ICR systems. While charging the main coil, the power supply will automatically cycle each shim coil’s persistent switch heater to dump induced current.

Current settability with the Model 4G power supply is 0.1 milliamps with - an order of magnitude better than the previously offered Model CS4 power supply. Stability is $\pm 3\text{mA} / ^\circ\text{C}$.

PID-Controlled ramping allows for smooth sweeping between set points without the need for or dependence on voltage taps across the magnet.

A persistent switch heater (PSH) power supply is included in the Model 4G. Two PSH supplies are standard in the dual output model.



Rear Panel View of the Model 4G-Dual

Cryomagnetics has taken the popular programmable sweep rate range introduced in the Model CS4 power supplies and increased the ranges from three (3) to five (5). Versatile programmability allows the user to specify several different sweep rates for different current ranges of the magnet – making it possible to sweep a magnet slower in a particular range if it is more sensitive there without user intervention. A fast ramp capability up to 10 amperes/second is also included.

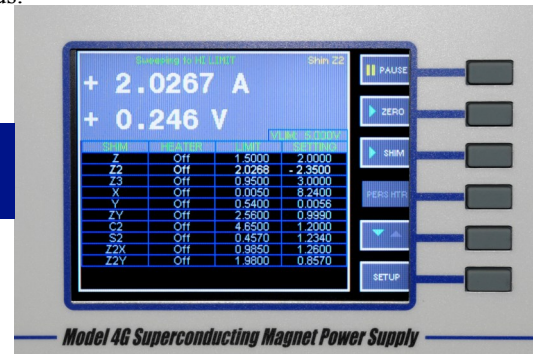
Safety features include magnet quench detection and protection, automated ramp down of current in case of an error, input power loss, and over temperature. Further, in the event of a loss of input power, the Model 4G converts to a “Power Fail” mode and will draw operating power from the magnet while safely discharging at low voltage. There are safety interlocks for persistent switch enable/disable and changing of important magnet parameters and limits. A visual confirmation of current present in leads will alert users to be mindful of safety when operating the power supply, even if line power is off. When used in conjunction with cryogen-free or recondensing style systems, automatic ramp down may be initiated in the event of failure of the mechanical cryocooler.

Input power is 220Vac ($\pm 10\%$), 50/60Hz.

Visit our website (www.cryomagnetics.com) for latest news on the Model 4G and all our products. Online ordering is available for our electronic products and cryogenic accessories such as current leads.

Contact us today!

Intuitive user interface



Contact us today for information on the following products!

Model LM-510 Liquid Cryogen Monitor

It is now possible to purchase a liquid cryogen monitor capable of simultaneously monitoring and displaying up to two LHe, LN₂, or other cryogenic liquid levels (requires appropriate sensors and 2-channel option). Available as the LM-510-13 option, the unit can be

configured to monitor and control liquid levels in recondensing dewar systems.

Model 612 and Model 614 Temperature Monitors

It is now possible to purchase an inexpensive temperature monitor for commonly used temperature sensors. The Model 612 features a 2-channel display while the Model 614 has



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