

SMS-SERIES SUPERCONDUCTING MAGNET POWER SOURCE WITH INTEGRAL CURRENT REVERSE



- **High Quality Performance**
 - Minimal null current
 - Integral current reverse
 - True 16 bit resolution
 - High output stability/Low voltage noise
- **User friendly and flexible**
 - Easy to use front panel with keypad
 - Menu driven manual operation
 - Quench detection software
 - Total control by external software
 - IEEE computer interface (RS232 option)
- **Complete Protection**
 - Internal thermal cutout
 - Internal energy absorber
 - Quench protection
 - Failsafe even with mains power failure
 - Low helium level automatic ramp-down
- **Superior Standard Features**
 - Interface to helium level gauge
 - Persistent mode switch heater
 - Auxiliary digital and analogue inputs
 - Wide range of current and voltage outputs

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"The Better Choice"

SMS SPECIFICATIONS

All quoted for the SMS120 unit after 20 mins warm-up at ambient temperature between 15 and 35 Celsius
(Specifications for other units in the SMS range are pro-rata with current and voltage)

Output Current		Output Voltage	
Setting Range	0 to rated current (120A)	Setting Range	0 to rated voltage (5V)
Setting Resolution	1.8mA	Setting Resolution	0.1V
Setting accuracy	1.8mA	Setting Accuracy	20mV
Hold stability	20ppm/hour	Switch Heater	
Readout resolution	0.001A (IEEE)	Setting Range	0 to 8.0 V
Digital Ramp		Setting Resolution	0.1V
Setting Range	10 to 100,000 secs Zero to full output in 65 logarithmic steps	Maximum current	100mA
Setting Accuracy	0.5% of ramp rate set	DVM Output	
Analogue Input		Range	2mV/A, calibrated 0.03%
	0 to 5V via IEEE (for helium level gauge)	Stability	15ppm per degree Celsius
		Source Resistance	300 Ohms, differential

The Cryogenic SMS Magnet Power Source provides all the facilities required to drive a superconducting magnet with complete safety. It can be operated from the front panel or from a computer with drive commands which are easy to understand and program.

A built-in, digitally derived, but smooth ramp is used to increase the current in a linear and precise way. There is a built-in energy dump which can absorb the stored energy from the magnet even when the mains power has failed. The energy of the magnet is used to drive the power source cooling fans. A built-in current and field reversing switch is offered as an optional item.

The SMS unit can drive one or more persistent mode switches and has facilities for linking to the HLG liquid helium level gauge. This allows the helium level to be read by the power supply and is a useful feature for remote or computer driven operation of a magnet system. With its numerous standard facilities, the SMS power source is still competitively priced, making it the most convenient of magnet power sources.

For most Superconducting Magnet Systems, the most practical method of

control and measurement of the magnetic field is to control and monitor the magnet current. For this reason, the SMS has a specially made current shunt with a very high quality differential amplifier. The shunt voltage is also directly available on the rear panel of the unit for monitoring with a high precision DVM.

Setting of the magnet current is by a 16 bit D to A converter in conjunction with the smoothed analogue/digital ramp. The ramp can be interrupted at any time

with a single command to freeze the current setting.

Considerable attention has been paid to the feedback loop to avoid instabilities with highly inductive loads (up to 150 Henry) and to ensure linearity of the output current over the whole range. An auxiliary low current source option is available for precise low field measurements.

The single module with reversing switch is 450W x 190H x 650D.

Rated Maximum	Model	V max	Input Power	No of Modules
10A	SMS10	±5V	200W	1
80A	SMS80	±5V	800W	1
80A	SMS80-H	+16/-12V	2000W	1
120A	SMS120	±5V	1200W	1
120A	SMS120-H	+10V/-8.2V	2100W	1
130A	SMS130	±5V	1300W	1
130A	SMS130-H	+10/-8.2V	1300W	1
150A	SMS150	+4.5V/-4V	1400W	1
160A	SMS160	±5V	1600W	2
160A	SMS160-H	+16V/-12V	4000W	2
240A	SMS240	±5V	2400W	2
240A	SMS240-H	+10V/-8.2V	2400W	2
300A	SMS300	+4.5V/-4V	2800W	2
360A	SMS360-H	+10V/-8.2V	6300W	2
450A	SMS450	+4.5V/-4V	4200W	2
480A	SMS480-H	+10V/-8.2	8400W	2
600A	SMS600	+4.5V/-4V	5600W	2

**For further information or a comprehensive quotation, please contact our Sales Department at:-
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