LABORATORY ELECTROMAGNET & POWER SUPPLIES

RESISTIVE/PULSE **MODEL: MHPEM**

Introduction: MHPEM series of high power electromagnets are available in more than 20 different model With power ranging from 10.0 to 5000.0 amps in various size and geometry with bipolar/quadru-polar Shape and pole diameter ranging from 20 -150 m.m./pole gap varying between 15-100 m.m. variable gap. High power electromagnets are water/oil cooled. These electromagnets find applications in Seismic, automobile, solid state physics experiments, nuclear physics, bio-medical, micro-electronics, /environmental/toxicology/polymers/heavy electrical engineering, MEMS, heat sink Paints/nuclear/power plant/process control & chemical engineering, packaging, semiconductor encapsulation, optics Clutch, damper, valve, special performance sensor actuators for linear/rotary motion control, magnets, metal casting;

Operating Principle: High current carrying air/water cooled multiple coils are placed around either soft iron/sintered composite/alloy pole. These magnetic materials have high saturation fied and low remenance. Magnetic field produced is governed by faraday lawa of magnetics i.e.……

B = amere.turn / reluctance x pole area

Company also offers pulse type electromagnets energized by pulse power supplies to achieve high peak magnetic field upto 9-10 tesla. These have different pole materials and needs better cooling provision and are to excite by harmonic free /high control speed power supplies to avoided early saturation of pole core, which otherwise derates electromagnets to as much as 100%.

MHPEM-024100

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MHPEM-024100

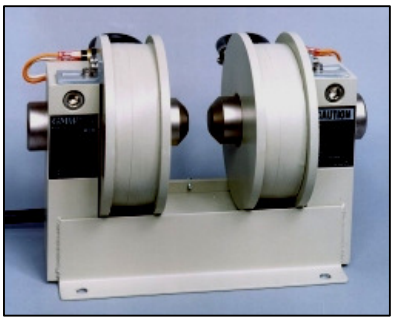
MHPEM-100100

SPECIFICATIONs OF RESISTIVE ELECTROMAGNETS **Power range<100.0 K.Watt**

Model	Pole dia m.m.	Pole gap m.m.	Frame size LxBxH	B_{max} Tesla	Watts	Volts	Amps	PULSE/ min	Cooling
MHPEM-025025	025	025	12X06C08	01.5	00500.0	25.0	010.00	800	Air
MHPEM-032050	032	050	12X06C08	01.5	00500.0	25.0	015.00	800	Air
MHPEM-050025	050	025	18X10X12	01`.5	0750.0	50.0	015.00	800	Air
MHPEM-050050	050	050	18X10X12	01.5	01250.0	50.0	025.0	800	Air
MHPEM-062062	062	062	12X06C08	01.5	02500.0	050.0	050.0	400	Air
MHPEM-075050	075	050	12X06C08	01.5	03750.0	075.0	050.0	400	Air
MHPEM-075050	075	050	12X06C08	03.0	05000.0	100.0	050.0	400	WATER
MHPEM-100050	100	050	12X06C08	03.0	10000.0	100.0	100.0	400	WATER
MHPEM-100075	100	075	12X06C08	03.0	15000.0	100.0	150.0	400	WATER
MHPEM-100100	100	100	12X06C08	03.0	20000.0	100.0	200.0	400	WATER
MHPEM-125100	125	100	12X06C08	03.0	40000.0	200.0	200.0	400	WATER
MHPEM-150100	150	125	12X06C08	03.0	80,000.0	200.0	400.0	400	WATER
MHPEM-150150	150	150	12X06C08	03.0	100,000.0	200.0	500.0	400	WATER
MHPEM-250200	250	200	12X06C08	03.0	2000,000.0	400.0	500.0	400	WATER

General Specification of High Power Electromagnets:

Operating voltage 220 volts, 1/3 phase, 40-60 Hz
Pole Gap: 10-200 m.m.
Pole Diameter: 20-200 m.m.
Max magnetics field: 3.0 tesla
Pole material: soft iron, composite, alloys
Pole material permeability@1.5T; approx 3000
Pole Dimensional profile: 15-25% taper
Percentage surface irregularities: 0.001%
Coil O.D. 100 – 2000 m.m.
Coil Length: 75- 800 m.m.
Coil inductance: 100- 2000 mili-henry (MEASURE AT LOW FREQUENCY)
Coil time constant: 10-100 mili-secs
Coil Voltage: 50-400 VOLT d.c.
Coil current: 50-500 amps d.c.
Duty cycle: 30 min on/30 min off
Frame size: 6x24 to 24x72"



MHPEM-025010

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LABORATORY ELECTROMAGNET & POWER SUPPLIES

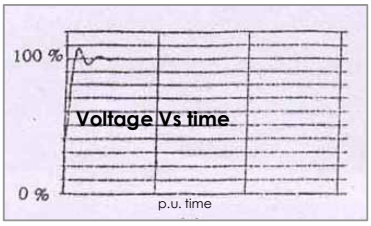
Programmable/Non-programmable **MHCLV-Series**

Introduction:

MHCLV series of high current/low voltages supplies are available in (15.0 to 1000 kilo watts), more than 50 different models working in constant voltage/current mode virtually offering solutions to electrochemical, corrosion, petrochemical industry, organic/inorganic chemical, heavy electrical/mechanical industries, machine tools, non-conventional energy, capacitor energy storage. solids state physics application and many uncountable defense/nuclear applications. Updated design topology ensures better controllability and efficiency with additional integrated power/voltage and frequency control/protection. These power supplies may operate in parallel to make it more redundant.
Company offers tailor made solution to custom requirement.

Operating Principle:

These high power supply current/low voltage are line commutated S.C.R. or force commutated high frequency I.G.B.T. controlled rectifier working in feedback cascade mode. Set voltage/current immediately settles to set point with consistent regulation over wide load range and without any hunting with fail proof protection against either over/under voltage. These power supplies may be operated in parallel along with
Facility of parallel port/serial port to enable it to interface with computer to achieve any real time voltage /current profile.



Time response of power supply

MHCLV-024100

MHCLV-024100

MHCLV-100100

SPECIFICATIONs OF SWITCHING TYPE HIGH CURRENT/LOW VOLTAGE POWER SUPPLIES (AC/DC) **Power range<100.0 K.Watts**

Model	Watts	Volts	current	Repition rate in case of pulse/sec x10	cooling	Model	Watts	Volts	Current	Repition rate in case of pulse/sec x 10	Cooling
MHCLV-003003	018.0	06.0	03.0	1200	Air	MHCLV-050075	50000.0	50.0	1000	800	Air
MHCLV-006050	300.0	06.0	50.0	1200	Air	MHCLV-050150	75000.0	50.0	1500	800	Air
MHCLV-012025	300.0	12.0	25.0	1200	Air	MHCLV-050200	10,000.0	50.0	2000	800	Air
MHCLV-012050	600.0	12.0	50.0	1200	Air	MHCLV-050400	20,000.0	50.0	4000	800	Air
MHCLV-012100	1200.0	12.0	100.0	1000	Air	MHCLV-100050	04000.0	100.0	050.0	400	Air
MHCLV-012200	2500.0	12.0	200.0	1000	Air	MHCLV-100050	10000.0	100.0	100.0	400	Air
MHCLV-200200	4000.0	20.0	200.0	1000	Air	MHCLV-100100	10000.0	100.0	100.0	400	Air
MHCLV-025025	625.0	25.0	25.0	1000	Air	MHCLV-100100	15000.0	100.0	150.0	400	Air
MHCLV-025050	1250.0	25.0	50.0	1000	Air	MHCLV-100300	30000.0	100.0	300.0	400	Air
MHCLV-025100	2500.0	25.0	100.0	800	Air	MHCLV-100400	40000.0	100.0	400.0	400	Air
MHCLV-025150	3750.0	25.0	150.0	800	Air	MHCLV-200400	10000.0	200.0	50.0	400	AIR
MHCLV-025200	5000.0	25.0	200.0	800	Air	MHCLV-200050	20,000.0	200.0	100.0	400	Air
MHCLV-050050	2500.0	50.0	50.0	800	Air	MHCLV-200100	20,000.0	200.0	200.0	400	Air
MHCLV-050100	5000.0	50.0	100.0	800	Air	MHCLV-400100	40,000.0	400.0	100.0	400	Air
MHCLV-050200	5000.0	50.0	200.0	800	Air	MHCLV-300100	30,000.0	600.0	750.0	400	Air
MHCLV-050400	5000.0	50.0	400.0	800	Air	MHCLV-600100	60,000.0	600.0	1500	400	Air

General Specification of High current/low voltage power supply:

Operating voltage 220 volts, 1/3 phase, 40-60 Hz
Output current/voltage 0-400 volts/400 amps (max)(pulse/D.C)/multioutput mode
Voltage/current control accuracy 99.9% of set point
Output impedence: compatible to load to ensure maximum possible power trasfer.
Resolution 0.1 volts/amps D.C.
Repeatability 100 percent
Response time 0.5 –1.1 mill-seconds
Voltage regulation: Line : ±0.05% (for ±10% of input change)/ Load: 0.05% (for 10 to 100% of load change)
Current regulation: Line : ±0.05% (For ±10% of input change)/Load: 0.05% (for 10 to 100% of load change)
Interface Signal 0.0-12.0 volts D.C. (proportional to process variable
Voltage control range 0.0-400 volts
Step down ratio 0-100%
Control options 1. Reverse polarity control 2. 1.cascade feedback control with soft start 2.Ratio control (option) 2. Contant voltage/current with external adjustment
Display Voltage/current/kilowatt/Jules in 3½ red glow LED display
Protection over voltage/short ckt.
Additional: Local: Constant voltage mode, by 10-turn potentiometer
Constant current mode, by 10-turn potentiometer
Remote: Constant voltage mode, by external voltage of 0 to 10Vdc*
NOTE: These power supplies are also offered in pulse mode.

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Programmable/Non-programmable **MHCLV-Series**

SPECIFICATIONs OF SWITCHING TYPE HIGH CURRENT/LOW VOLTAGE PULSE POWER SUPPLIES (AC/DC) Power range<100.0 K.Watts

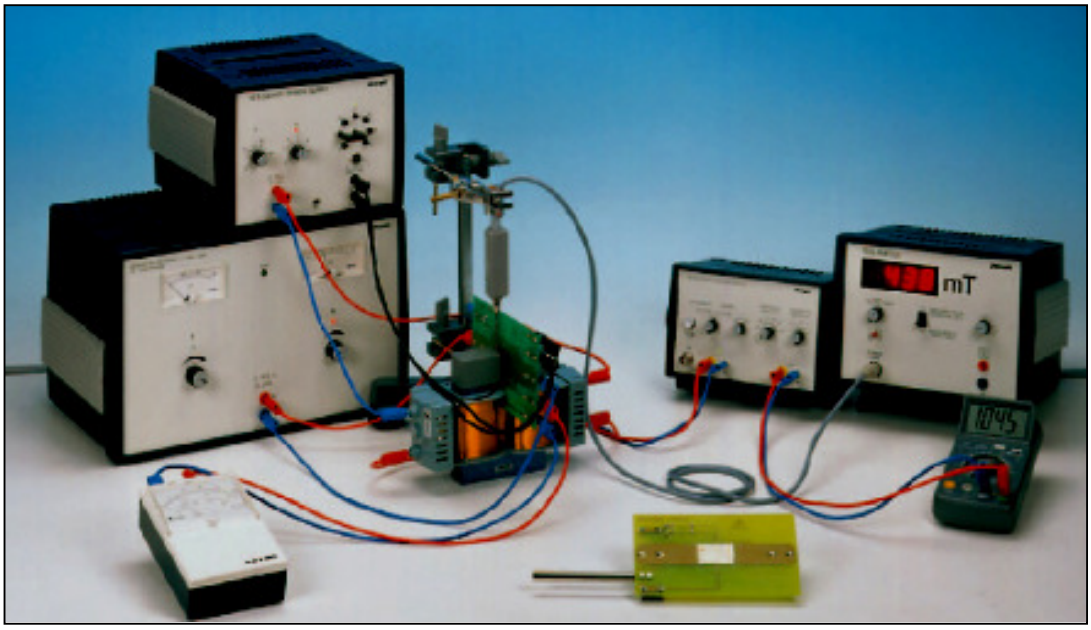
Model	Watt	Volts	current	Repition rate pulse/sec x10	Model	Watts	Volts	Current	Repition rate pulse/sec x 10
MHCLV-0100501	0050	010.0	050.0	10	MHCLV-0500501	0250	050.0	050.0	5
MHCLV-0101001	0100	010.0	100.0	10	MHCLV-0501001	0500	050.0	100.0	5
MHCLV-0101501	0150	010.0	150.0	10	MHCLV-0502001	1000	050.0	200.0	5
MHCLV-0200501	0100	020.0	050.0	10	MHCLV-0503001	1500	050.0	300.0	5
MHCLV-0211001	0200	020.0	100.0	10	MHCLV-0504001	2000	050.0	400.0	5
MHCLV-0201501	0300	020.0	150.0	10	MHCLV-0601001	0600	060.0	100.0	5
MHCLV-0202001	0400	020.0	200.0	10	MHCLV-0602001	1200	060.0	200.0	5
MHCLV-0300501	0150	030.0	050.0	10	MHCLV-0600501	0300	060.0	050.0	5
MHCLV-0301001	0300	030.0	100.0	10	MHCLV-0601001	0600	060.0	100.0	5
MHCLV-0400501	0200	040.0	050.0	10	MHCLV-0602001	1200	060.0	200.0	5
MHCLV-0401001	0400	040.0	100.0	10	MHCLV-0601001	0600	060.0	100.0	5

Three numerals after MHCLV indicates voltage of power supply and last three digit Indicates current. All dimensions are in inches

High Current low voltage power supplies dimension:

MHCLV-0100501	08X06X06	MHCLV-0500501	14x14x14	MHCLV-003003	14x14x14	MHCLV-050075	20x16x16
MHCLV-0101001	12x08x08	MHCLV-0501001	18x16x16	MHCLV-006050	18x16x16	MHCLV-050150	22x18x18
MHCLV-0101501	12x10x10	MHCLV-0502001	20x18x18	MHCLV-012025	20x18x18	MHCLV-050200	24x18x18
MHCLV-0200501	12x10x10	MHCLV-0503001	20x18x18	MHCLV-012050	20x18x18	MHCLV-050400	24x20x16
MHCLV-0211001	14x10x10	MHCLV-0504001	14x12x12	MHCLV-012100	14x12x12	MHCLV-100050	28x14x14
MHCLV-0201501	16x12x12	MHCLV-0601001	18x16x16	MHCLV-012200	18x16x16	MHCLV-100050	28x14x14
MHCLV-0202001	16x14x14	MHCLV-0602001	14x14x14	MHCLV-200200	14x14x14	MHCLV-100100	28x16x16
MHCLV-0300501	18x10x10	MHCLV-0600501	18x16x16	MHCLV-025025	18x16x16	MHCLV-100100	28x18x18
MHCLV-0301001	18x12x12	MHCLV-0601001	20x16x16	MHCLV-025050	20x16x16	MHCLV-100300	28x20x20
MHCLV-0400501	18x14x14	MHCLV-0602001	22x18x18	MHCLV-025100	22x18x18	MHCLV-100400	28x22x22
MHCLV-0401001	18x16x18	MHCLV-0601001	24x18x18	MHCLV-025150	24x18x18	MHCLV-200400	28x22x24
MHCLV-0100501	16x16x16	MHCLV-0500501	24x20x16	MHCLV-025200	24x20x16	MHCLV-200050	28x24x24

Three numerals after MHCLV indicates voltage x100 of power supply and last three digit Indicates amps. All dimensions are in inches.
Above models are in current range of production, however company undertake any tailor made specification power supply.



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