

SM3000 Series

LABORATORY POWER SUPPLY

FEATURES

- 3000W Laboratory Supply
- Ranges 0-15V to 0-300V and 0-10A to 0-200A
- Auto Ranging Models
- Designed for long life at full power
- Excellent dynamic response to load changes
- Protected against all overload and short circuit conditions
- EMC surpasses CE requirements - low emissions & high immunity
- Low audible noise - fans are temperature controlled
- Master/Slave parallel and series operation with voltage & current sharing
- High power system configuration from multiple units
- 19" rack mounting for for laboratory use (feet included)
- Stacking is allowed & space between units is not required

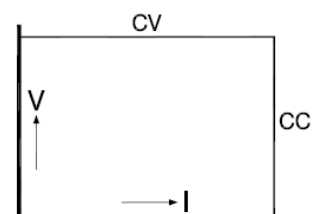


SPECIFICATIONS

INPUT	
Input voltages	342 - 457Vac 3Ph
Input Frequency	48 - 62Hz
Power Factor	0.88, with 100% load 0.78 with 50% load
Input Current	5.8A rms (400Vac 3ph)
Internal Fuse	16 AT
Standby input power	25W $V_o = 0$ 50W $V_o = \text{max}$
Efficiency	89% Typical
MTBF	500 000 hrs
Turn on delay	300ms (after mains switch on)
Hold-up time	6ms 100% load $V_{in}=3x380Vac$ 15ms 50% load $V_{in}=3x380Vac$
OUTPUT	
Output Voltage Range	0-15V to 0-300V Auto ranging models See Selection Table
Output Current Range	0-200A to 0-10A Auto ranging models See Selection Table
Output Power Range	0 to 3000W See Selection Table
ENVIRONMENTAL	
Operating Temperature	-20°C to +50°C (100% load) Derate output to 75% at 60°C
Temperature Coefficient	0.02%/°C
Storage Temperature	-40°C to 85°C.
Thermal Protection	Output shuts down in case of insufficient cooling
Humidity	max 95% RH, non condensing up to 40°C max 75% RH, non condensing up to 50°C

STANDARDS & APPROVALS	
Safety	EN60950 / EN61010
Power Supply Standard	EN61204-3 Emission residential light industrial environment CISP22 Class B Immunity - industrial environment
General Emission	EN61000-6-3 residential, light industrial environment EN55022B EN61000-6-2, industrial environment
MECHANICAL	
Mounting	Stacking of units allowed, air flow is from left to right.
Input Connector	Screw terminals for cable 1.5 - 4.0mm ² 3 phase + earth (no neutral required)
Output Terminals	0-15V, 0-30V, 0-45V: M10 bolts 0-70V, M8 bolts 0-120V, 7mm bind post 0-300V, 6mm bind post
Programming Connector	15 pole D-connector at rear panel (FEMALE)
Enclosure	IP20 Protection
Dimensions	158 x 443 x 416mm Behind front panel (feet removed) 128 x 483mm, Front panel (19" 3U)
Weight	15kg

Function



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PROGRAMMING	
Programming Inputs: CV	Input Range: 0 - 5V Accuracy: +/-0.2% Offset: -0.1...+1.3mV (on 5V) Temp. coeff. offset: 10uV/C Input Impedance: > 1Mohm
Programming Inputs: CC	Input Range: 0 - 5V Accuracy: +/-0.5% Offset: 0...+2.2mV (on 5V) Temp. coeff. offset: 50uV/C Input Impedance: > 1Mohm
Monitoring Outputs: CV	Input Range: 0 - 5V Accuracy: +/-0.2% Offset: -1.1..0mV (on 5V) Temp. coeff. offset: 3uV/C Output Impedance: > 2 ohm / max 4mA
Monitoring Outputs: CC	Input Range: 0 - 5V Accuracy: +/-0.5% Offset: -1.1..0mV (on 5V) Temp. coeff. offset: 60uV/C Output Impedance: > 2 ohm / max 4mA
Reference voltage	Vref: 5.114V +/-15mV (Ro = 2ohm, max 4mA) TC: 20ppm
+12V Output	Vo: 12V+/-0.23V Imax: 0.2A Ro: 3ohm

OPERATING	
Series Operation	Max total voltage 600V Master / Slave operation yes
Parallel Operation	Max total current - No limit Master / Slave operation - max 4 units (including master)
Remote Sensing	Max volt, drop per load lead: 2V
Potentiometers & Encoders	Standard: Front panel control with knobs Resolution: 0.03%
Screwdriver adjustment	Option P001
Digital encoders	Option P002
Indicators	Voltage meter, Amp meter, AC-Fail, DC-Fail, Over Temperature, Power Sink Overload, Remote Shutdown,, Remote-CV, Remote-CC, Output On,CV-limite, CV- and CC- mode
Controls	Mains on/off switch, CV and WV potmeter, CV and CC limit potmeter, Display Settings button, Display limits button, Remote/Local button, Output On/off button, Fron panel lock button
Relay Outputs	ACF: AC-Fail, both NOP and NC contact DCF: DC-Fail,both NO and NC contact output voltages +/-5% beyond set point
Status Outputs	CC operation: 5V = logic1, (Ro = 500 Ohm) CV or CC limit: 5V = logic1, (Ro = 500 Ohm) OT: Over Temp: 5V = logic1, (Ro = 500 Ohm) PSOL, Powersink Overload: 5V = logic1, (Ro = 500 Ohm) ACF, AC Fail: 5V = logice1, (Ro = 500 Ohm) DCF DC Fail 5V = logice1, (Ro = 500 Ohm)
Efficiency	87% Typical
Isolation	Input - Output: 3750Vrms(1 min) Creepage clearance; 8mm Input - Case: 2500Vrms Output - Case: 600VDC
MTBF	500,000hrs

SELECTION TABLE

OUTPUT	SM 15-200D	SM 30-100D	SM 45-70D	SM 70-45D	SM 120-25D	SM 300-10D
Output Voltage Range	0 - 15V	0 - 30V	0 - 45V	0 - 70V	0 - 120V	0 - 300V
Output Current Range	0 - 200A	0 - 100A	0 - 70A	0 - 45A	0 - 25A	0 - 10A
Meters	3.5 digit	3.5 digit	3.5 digit	3.5 digit	3.5 digit	3.5 digit
Scale voltage	0 - 15.00 V	0 - 30.0 V	0 - 45.0 V	0 - 70.0 V	0 - 120.0 V	0 - 300 V
Scale current	0 - 200 A	0 - 100.0 A	0 - 70.0 A	0 - 45.0 A	0 - 25.0 A	0 - 10.00 A
Accuracy	0.5% + 2 digit	0.5% + 2 digit	0.5% + 2 digit	0.5% + 2 digit	0.5% + 2 digit	0.5% + 2 digit
PROGRAMMING SPEED	SM 15-200 D	SM 30-100 D	SM 45-70 D	SM 70-45 D	SM120-25 D	SM300-10D
STANDARD VERSION	OPTION P104	OPTION P031	OPTION P1	OPTION P032	OPTION P106	OPTION P061
Rise time (10 - 90%)						
Output voltage step	0 - 15 V	0 - 30 V	0 - 45 V	0 - 70 V	0 - 120 V	0 - 300 V
Time, (100 % load)	7 ms	7 ms	7 ms	7 ms	7 ms	7 ms
Time, (10 % load)	7 ms	7 ms	7 ms	7 ms	7 ms	7 ms
Fall time (90 - 10%)						
Output voltage step	15 - 0 V	30 - 0 V	45 - 0 V	70 - 0 V	120 - 0 V	300 - 0 V
Time, (100 % load)	7 ms	7 ms	87 ms	8 ms	7 ms	11 ms
Time, (10 % load)	32 ms	58 ms	29 ms	82 ms	39 ms	91 ms
Programming bandwidth						
Small signal	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Large signal,(100 % load)	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Large signal,(10 % load)	5 Hz	5 Hz	5 Hz	5 Hz	5 Hz	5 Hz

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TECHNICAL ILLUSTRATIONS

