RPSu Series

Programmable DC Power Converters 750W - 12kW

Features

- Unipolar, bipolar option with polarity reversal switch
- Max current/voltage 300A / 60V
- Long term stabilty: 2ppm
- High resolution.
- 7 control modes including current, voltage and hybrid
- Real time ppm dynamic calculation
- Data base store 16GB > 30 years without erasing
- Active input filter and Power Factor 1
- Very low harmonic distortion
- Noise inmunity
- Zero thermal drift
- 94,5% efficiency
- Intelligent ground connection through control. Precision (nA) ground current monitoring for load ground insulation check. Ground fuse permanent check.
- Intelligent cooling control with maintenance warning
- User friendly local interface with 7 inch size display
- EPICS control
- MODBUS over TCP/IP control
- DCCT Technology
- Remote sensing input channels
- Small size and weight
- Centralized switch-on for a group of power sources

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DS RPSu 3.0.3-1121

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Specification

OUTPUT	RPSu models by Max Output Current	50A, 100A, 150A, 200A, 300A	
	RPSu models by Max Output Voltage	15V, 30V, 45V, 60V	
	Maximum Output power	12kW (3x400V input)	10kW (3x200V input)
	Polarity	Unipolar *Note 1	
	Current adjustment range	0,5 – 100%	
	Voltage adjustment range	0,5 – 100%	
	Ripple & Noise	≤ 10mVpp *Note 2	
	Switching Frequency	100Khz (200Khz Output)	
	Insulation	1000V	
INPUT	Input Voltage	110V …..480V *Note 3	
	Input Frequency	50….60Hz	
	Input Module	Vienna rectifier technology	
	Power Factor Correction	Active	
	Power Factor	1	
	Input Filter	Active	
	Harmonyc Distortion THD	3%	
	Efficiency	94.5%	
	MAX AC Current	32 Arms	
	Inrush Current	Soft Start, no Inrush current	
Precision CC mode	Long Term Stability (12h)	2 ppm	
	Accuracy	2 ppm	
	Setting Range	0,5% to 100%	
	Setting Resolution	22.5 bit (<100uA)	
	Readback Resolution	31 bit slow loop 24 bits fast loop	
	Line Regulation ±10% mains voltage	±5 ppm/FS	
	Load Regulation ±10% load change	±5 ppm/FS	
	Remote Sensing Compensation	> 3V	
	Thermal Drift	0 ppm/K Electronics Thermalized with Peltier ±0,1ºC	
NOTE	1 Bipolar option with polarity reversal switch. 2 Ripple & noise frequency 1Hz to 200kHz. 3 Power derating by safe operating area (SOA).		

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Control	**Programmable Ramp function**	0,001A/S to 3000A/S OR Step Response
	Control Modes	1 Constant current 2 Constant voltaje 3 Hybrid 4 Constant Power 5 Analog voltaje 6 Analog current 7 Function generator
	Loop adjustment	Open PIDs by software (Local or Remote)
	Closed loop bandwith	50 kHz (20µs)
	Precision Sensor	DCCT 2ppm
Ground connection	**Options**	Floating / Ground
	Selection	By software (Local or Remote)
	Ground Leaks Monitoring	From 20mA (accuracy 0,5%) to 40nA (accuracy 10%)
	Ground Insulation	1000V When floating
Local control	**Display**	7'' Touchscreen
	Operating System	Android (Linux)
Remote control	**Digital Protocols**	EPICS (Ethernet Driver) Ethernet 10/100/1000 TCP-IP (MODBUS)
	Analog Control by voltage	0-10V With Trigger (Auxiliar Digital Input)
Ports	**Type**	3 USB, 1 HDMI, 1 ETHERNET
Data Storage	**Data Storage period**	30 Years
Modularity	**Parallel Connection**	Yes in Current mode
	Series Connection	Yes in Voltage mode
General	**Dimension**	width ½ 19 "rack, height 4U 15Kg
	Operating temperature	0...40ºC
	MTBF	≥150,000 hrs
	Air Flow	Air flow gauge < 7 m/s show warning to clean the filter
	Freewheeling protection	Diode 300A
	Output Leads	Gold plated
	Applications	• Particle accelerator magnets supply • Test & Measurement systems • Medical Imaging and treatment systems • Semiconductor Processing

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Interlocks	**Input**	4 hardware (fast speed, not controlled by software) 1 External trigger (for analog control)
	Ouput	2 mechanical relay (slow speed) NO-NC 1 solid state (fast speed)
	Errors **(RPSu forces emergency stop)**	*Vienna Interlocks:* Overcurrent, Overvoltage, Voltage Symetry, Air flow, Communications, Temperature > 90ºC, Synchronization. *ZVS Interlocks:* Temperature > 90ºC, Primary Current, 4 Hardware Interlocks, watchdog, Overvoltage, Communications. *Control Interlocks:* ADC 31bits, ADC 24bits, DCCT, Peltier Temperature inside and outside > 60ºC, Software Overcurrent, Software Overvoltage, Current desviation, Voltage desviation, Power desviation, Loop oscillation, Communications.
	Warnings **(RPSu shows notification)**	*Vienna Warnings:* Phase lost, Underfrequency, Overfrequency, Relay softstard, Setpoint Bus, Temperature > 85ºC. *ZVS Warnings:* Temperature > 85ºC. *Control Warnings:* Fuse Ground, Peltier Temperature inside and outside > 55ºC, Current loop, Communications 8 Fans, Under Ground Impedance (Programmable), Failure 8 fans.
	Isolated	Yes, Optoisolated or Relay with 1000VDC
	Energy activation	All input and output interlocks have own floating power supply with 1000VDC isolation
Cooling	**Cooling**	Forced-air or water cooling
	Fans Speed	Regulable and Monitored
Extra features	**Input**	Waveform generator, standard curves or point-by-point
	Output	Real Time PPM in display All variables are shown in graphic display

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MODELS

CE

Model	Voltage (V)	Current (A)	Power (W)	Heigh (U)	Weigh (Kg)
RPSu 15-50	15	50	750	4	13
RPSu 15-100	15	100	1.500	4	13
RPSu 15-150	15	150	2.250	4	13
RPSu 15-200	15	200	3.000	4	13
RPSu 30-50	30	50	1.500	4	13
RPSu 30-100	30	100	3.000	4	13
RPSu 30-150	30	150	4.500	4	13
RPSu 30-200	30	200	6.000	4	13
RPSu 45-50	45	50	2.250	4	15
RPSu 45-100	45	100	4.500	4	15
RPSu 45-150	45	150	6.750	4	15
RPSu 45-200	45	200	9.000	4	15
RPSu 60-50	60	50	3.000	4	15
RPSu 60-100	60	100	6.000	4	15
RPSu 60-150	60	150	9.000	4	15
RPSu 60-200	60	200	12.000 *	4	15
RPSu 40-300	40	300	12.000 *	4	15

* 12kW available with 3x400V input. 10kW with 3x200 input

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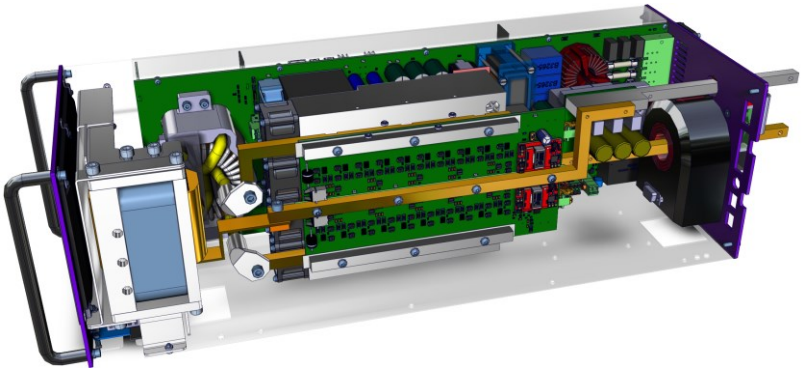

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