

LAB-DSP

HIGH DENSITY DC POWER SOURCE



POSITIVE PROBLEM SOLVING **+=**

The LAB-DSP product family has 45 models covering a range of 6V to 600V and 1A to 400A. Outputs are available at 750W, 1500W and 3000W.

All units operate from a single phase wide AC input with active PFC. Up to 5 identical units can be connected in parallel to provide up to 15kW output power. The required output current is actively shared when the units are connected in parallel via the optional master/slave card. For systems requiring high reliability the parallel feature provides redundancy as should one unit fail the others will continue to operate. Series operation of 2 units is also possible.

- + RS-485 and Analogue as Standard
- + 16 Bit Setting & Measurement
- + Configurable OCP and OVP
- + Adjustable Voltage Ramp
- + CV/CC Operating Modes
- + Active PFC of 0.99

FURTHER DETAILS

Over-voltage and over-current protection limits can be adjusted to help safeguard sensitive loads. Transient response times when operating in constant voltage are better than 2ms with some models <1ms. The actual voltage ramp up and ramp down times can be adjusted from the front panel. Settings up to 99.9 sec are possible.

Along with front panel control and display, RS-485 and analogue interfaces are built-in as standard. If isolated analogue control and monitoring is required, this can be achieved using the Isolated Analogue Programming Port, or ATI (all pins of the ATI are isolated from the negative output). This is a factory fitted option which basically enables both 5V and 10V isolated control and monitoring of the power supply.

An interlock function is provided enabling the connection of an external emergency stop or output off switch. In addition to the standard interfaces GPIB or LAN can also be optionally provided.

This series of power supplies can be found in a very wide range of market sectors and applications including: Aerospace, telecom, ATE, quality control, chemical processing, water purification, electroplating, sputtering and coating, semiconductor manufacture, burn-in along with general R&D.

HIGHLIGHTED FEATURES



CONFORMAL COATING

An additional coating of the PCB is possible for all LAB-DSP models. This ensures suitability in harsh environments by providing protection against moisture & high humidity.



MODIFICATIONS

Existing platforms can be modified by ETPS's design specialists to meet unusual test needs. Voltage or current outputs can be tailored to suit your requirements.



MASTER / SLAVE

Operation of several PSUs in series or parallel is possible. This allows users to retrospectively expand systems to meet ever changing power requirements.



INTERFACES

A variety of interfaces are available providing unrivalled flexibility for users. Each system can be configured with multiple interfaces.

SELECTION TABLE

Part Number	Max. Power	Voltage Range	Current Range	Ripple ¹		Line Regulation		Load Regulation		Response Time [s]		
				CV mV RMS	CC mA RMS	CV 0.05%+mV	CC 0.1%+mA	CV 0.05%+mV	CC 0.1%+mA	Full Load UP	Full Load DOWN	No Load DOWN
LAB-DSP 006-100	750W	0 - 6V	0 - 100A	10	180	2.8	11	2.8	23	0.08	0.05	0.6
LAB-DSP 008-090	750W	0 - 8V	0 - 90A	10	180	2.8	11	2.8	23	0.08	0.05	0.6
LAB-DSP 012.5-060	750W	0 - 12.5V	0 - 60A	10	120	4.0	8.5	4.0	18	0.08	0.05	0.8
LAB-DSP 020-038	750W	0 - 20V	0 - 38A	10	76	4.0	5.8	4.0	12.6	0.08	0.05	0.8
LAB-DSP 030-025	750W	0 - 30V	0 - 25A	10	63	5.0	4.5	5.0	10	0.08	0.08	0.9
LAB-DSP 040-019	750W	0 - 40V	0 - 19A	10	48	6.0	3.9	6.0	8.8	0.08	0.08	1.0
LAB-DSP 050-015	750W	0 - 50V	0 - 15A	10	43	8.0	3.6	8.0	8.2	0.08	0.08	1.1
LAB-DSP 060-12.5	750W	0 - 60V	0 - 12.5A	10	38	8.0	3.25	8.0	7.5	0.08	0.08	1.1
LAB-DSP 080-09.5	750W	0 - 80V	0 - 9.5A	10	29	10	2.95	10	6.9	0.15	0.15	1.2
LAB-DSP 100-07.5	750W	0 - 100V	0 - 7.5A	10	23	12	2.75	12	6.5	0.15	0.15	1.5
LAB-DSP 150-005	750W	0 - 150V	0 - 5A	16	18	17	2.5	17	6.0	0.15	0.15	2.0
LAB-DSP 300-02.5	750W	0 - 300V	0 - 2.5A	25	13	32	2.25	32	5.5	0.15	0.15	3.0
LAB-DSP 350-02.1	750W	0 - 350V	0 - 2.1A	17	18	18	2.5	18	6.0	0.15	0.15	3.0
LAB-DSP 450-01.7	750W	0 - 450V	0 - 1.7A	34	13	35	2.3	35	5.5	0.21	0.24	3.5
LAB-DSP 600-01.25	750W	0 - 600V	0 - 1.25A	75	8.0	62	2.13	62	5.26	0.25	0.30	4.0
LAB-DSP 006-200	1500W	0 - 6V	0 - 200A	15	360	2.8	18.5	2.8	38	0.08	0.05	0.6
LAB-DSP 008-180	1500W	0 - 8V	0 - 180A	15	360	2.8	18.5	2.8	38	0.08	0.05	0.6
LAB-DSP 012.5-120	1500W	0 - 12.5V	0 - 120A	15	248	3.4	14.5	4.0	28	0.08	0.05	0.8
LAB-DSP 020-076	1500W	0 - 20V	0 - 76A	15	152	4.0	9.6	4.0	20.2	0.08	0.05	0.8
LAB-DSP 030-050	1500W	0 - 30V	0 - 50A	15	125	5.0	7.0	5.0	15	0.08	0.08	0.9
LAB-DSP 040-038	1500W	0 - 40V	0 - 38A	15	95	6.0	5.8	6.0	12.6	0.08	0.08	1.0
LAB-DSP 050-030	1500W	0 - 50V	0 - 30A	15	85	7.0	5.2	7.0	11.4	0.08	0.08	1.1
LAB-DSP 060-025	1500W	0 - 60V	0 - 25A	15	75	8.0	4.5	8.0	10	0.08	0.08	1.1
LAB-DSP 080-019	1500W	0 - 80V	0 - 19A	15	57	10	3.9	10	8.8	0.15	0.15	1.2
LAB-DSP 100-015	1500W	0 - 100V	0 - 15A	15	45	12	3.5	12	8.0	0.15	0.15	1.5
LAB-DSP 150-010	1500W	0 - 150V	0 - 10A	24	45	12	3.5	12	8.0	0.15	0.15	2.0
LAB-DSP 300-005	1500W	0 - 300V	0 - 5A	38	25	32	2.5	32	6.0	0.15	0.15	3.0
LAB-DSP 350-04.2	1500W	0 - 350V	0 - 4.2A	38	25	32	2.5	32	6.0	0.15	0.15	3.0
LAB-DSP 450-03.4	1500W	0 - 450V	0 - 3.4A	68	18	35	2.5	32	5.8	0.21	0.24	3.5
LAB-DSP 600-02.5	1500W	0 - 600V	0 - 2.5A	113	15	62	2.26	62	5.5	0.25	0.30	4.0
LAB-DSP 006-400	3000W	0 - 6V	0 - 400A	23	1000	2.8	42	6.2	85	0.08	0.02	0.5
LAB-DSP 008-360	3000W	0 - 8V	0 - 360A	23	1000	2.8	42	6.2	85	0.08	0.02	0.5
LAB-DSP 012.5-240	3000W	0 - 12.5V	0 - 240A	23	800	3.2	29	7.1	60	0.08	0.1	0.8
LAB-DSP 020-150	3000W	0 - 20V	0 - 150A	23	600	4.0	18.5	8.0	38	0.08	0.1	0.8
LAB-DSP 030-100	3000W	0 - 30V	0 - 100A	23	310	5.0	13	9.5	27	0.08	0.16	0.9
LAB-DSP 040-076	3000W	0 - 40V	0 - 76A	23	250	6.0	10.5	11	22	0.08	0.16	1.0
LAB-DSP 050-060	3000W	0 - 50V	0 - 60A	23	200	7.0	9.0	13	19	0.08	0.16	1.1
LAB-DSP 060-050	3000W	0 - 60V	0 - 50A	23	150	8.0	7.5	14	16	0.08	0.16	1.1
LAB-DSP 080-038	3000W	0 - 80V	0 - 38A	23	110	10	6.2	17	13.4	0.15	0.3	1.2
LAB-DSP 100-030	3000W	0 - 100V	0 - 30A	23	90	12	5.3	20	11.6	0.15	0.3	1.5
LAB-DSP-150-020	3000W	0 - 150V	0 - 20A	36	90	17	4.2	27.5	9.4	0.15	0.3	2.0
LAB-DSP-300-010	3000W	0 - 300V	0 - 10A	57	50	32	3.1	50	7.2	0.15	0.3	3.5
LAB-DSP 350-08.4	3000W	0 - 350V	0 - 8.4A	57	50	32	3.1	50	7.2	0.15	0.3	3.5
LAB-DSP 450-06.8	3000W	0 - 450V	0 - 6.8A	134	42	43	2.8	84	6.7	0.25	0.5	4.0
LAB-DSP-600-005	3000W	0 - 600V	0 - 5A	170	50	62	2.55	95	6.1	0.25	0.5	4.0

¹ The ripple is measured over a bandwidth of 5Hz to 1MHz

Every effort is made to ensure that the information provided within this technical summary is accurate. However, ETPS Ltd must reserve the right to make changes to the published specifications without prior notice. Where certain operating parameters are critical for your application we advise that they be confirmed at the time of order. ETPS Ltd specialises in modifying its proven platforms to suit your needs. Please contact our office if your requirement is non-standard. Please note that your actual unit may differ from those shown.

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TECHNICAL DATA

GENERAL	
Input Voltage (750W and 1500W Models)	90 - 264VAC (full output power only available at at 115VAC upwards)
Input Voltage (3000W Models)	180 - 264VAC (full output power only available at at 230VAC upwards)
Input Frequency	47-63Hz
Input Current (750W Output)	4.1A [at 230VAC]
Input Current (1500W Output)	8.1A [at 230VAC]
Input Current (3000W Output)	15.6A [at 230VAC]
Insulation Resistance	>100MΩ
Power Factor	0.99
Efficiency Range	76-88% ^[a]
Command Response Time	55ms
Transient Response Time [0 - 20V] [CV]	≤1.5ms
Transient Response Time [30 - 100V] [CV]	≤1ms
Transient Response Time [150 - 600V] [CV]	≤2ms
Output Polarity	Floating
Output Ramp Up Time	0.1 - 99.9s
Output Ramp Down Time	0.1 - 99.9s ^[b]
Analog Setting Accuracy [0 - 10V] [CC & CV]	± 5%
Analog Monitor Accuracy [0 - 10V] [Voltage]	$V_{OUT} \pm 2.5\%$
Analog Monitor Accuracy [0 - 10V] [Current]	$I_{OUT} \pm 2.5\%$
Withstand Voltage [Input - Output]	2000VAC : 1 minute
Withstand Voltage [Input - Ground]	2000VAC : 1 minute
Noise	<70Db [A]
Temperature Coefficient	100PPM/°C of rated output ^[c]
CC Temperature Drift	0.05% rated V_{OUT} after 8hrs ^[d]
Front Panel Resolution	5 digits
Panel Setting Accuracy [V]	± 0.1% ± 3C at rated voltage
Panel Setting Accuracy [I]	± 0.5% ± 3C at rated current
Panel Display Accuracy [V]	± 0.2% reading ± 5 digits
Panel Display Accuracy [I]	± 0.5% reading ± 5 digits
Resolution [Set and Read]	16 bits
Command & DA Setting Accuracy [V]	± 0.1% ± 3C at rated voltage
Command & DA Setting Accuracy [I]	± 0.5% ± 3C at rated current
Command & AD Measurement Accuracy [V]	± 0.2% ± 2C at rated voltage
Command & AD Measurement Accuracy [I]	± 0.5% ± 3C at rated current
Protective Functions	Programmable overvoltage
Protective Functions	Programmable overcurrent
Protective Functions	Overtemperature & sense line loss
Operating Temperature	0 - 40°C [30 - 90%RH]
Storage Temperature	-20 - 70°C [10% - 90%RH]
Cooling	Temperature controlled fan
Weight [750W / 1.5kW / 3kW]	<5.1kgs / <9kgs / <15.1kgs
Height [750W / 1.5kW / 3kW]	1U (half rack) / 1U / 2U
Depth	470mm
Remote Sense Compensation	1V to 5V dependent on model

^[a] Actual efficiency depends on model and output. ^[b] Output ramp down time varies between models.

^[c] Measurements accurate following 30 minutes warm-up. ^[d] Measurements accurate following 30 minutes warm-up. Constant line, load & temperature.

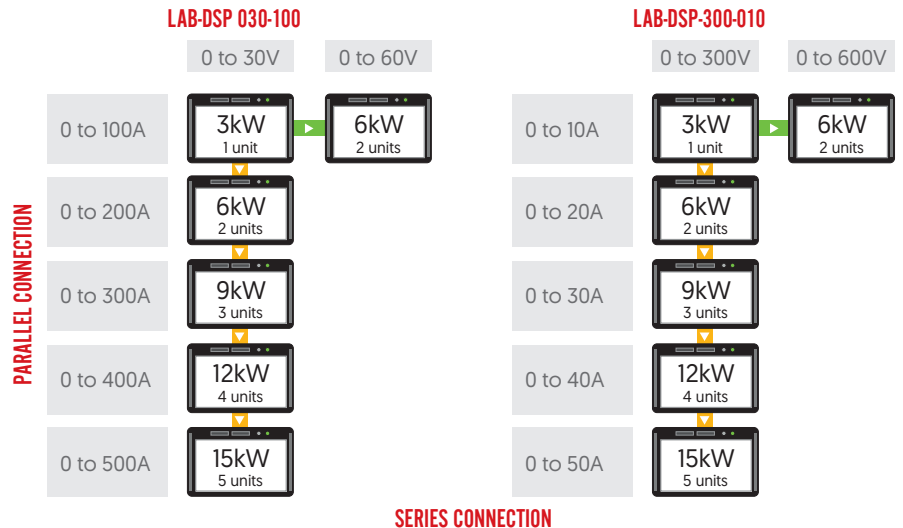


MASTER-SLAVE CAPABILITY

Up to 5 LAB-DSP systems can be arranged in parallel, or 2 in series connection (limited to 600V maximum output). Each PSU is able to operate independently, so that systems can be reconfigured, expanded or broken up as needs dictate.

The modular approach is useful for test houses and research labs who regularly test different sized power devices. Individual units can be used for the day to day testing of multiple small devices, then grouped together for larger projects.

The diagram shows the possible configurations with 30V and 300V 3kW systems.



CABINET OPTIONS

Units can be treated to a laboratory rack or flight case integration. Having a programmable power system mounted into a flight case on castors is often advantageous, especially when several departments or test cells share the same equipment.

Multiple power systems can be fitted into the same flight case. Door hangers are fitted for convenience. Existing ETPS systems can also be retrospectively integrated into new flight cases where requested.



OPTIONS

CODE	DESCRIPTION
/GPIB*	Integrated GPIB interface in addition to standard RS-485 and analogue
/CC	Conformal coating of PCBs to provide protection against moisture and high humidity
/LAN*	Integrated LAN interface in addition to standard RS-485 and analogue
/ATI*	Isolated 0-5V / 0-10V analogue interface for setting and measurement functions
/DSP-OPT-PAR	External parallel board to connect up to five units.
/DSP-OPT-SER	External serial board to connect two units
/19IUH	Blank panel to mount 750W [IUH] units into a 19" rack.
/19HU2	Rackmounting parts for 2 x 750W units
/AC2M	2m AC input cable for 1500W / 3000W units

*GPIB, LAN and ATI are only available as separate interfaces and can not be combined

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ETPS engineer electronic power supply and testing systems. Our problem solving skills provide the spark of innovation to some of the world's leading technology brands.



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