

LAB-DSPH

BENCHTOP DC POWER SUPPLY



POSITIVE PROBLEM SOLVING **+=**

The LAB-DSPH units are packaged in a convenient benchtop case with outputs of either 750W or 1.5kW. 15 different models are available at each power level.

All units operate from a single phase wide AC input with active PFC. Using the optional master/slave cards up to 5 identical units can be connected in parallel to provide up to 1000A and 7.5kW. The required output current is actively shared when the units are connected in parallel. Series operation of 2 units is also possible. Adjustable over-current and over-voltage protection help to ensure these units can be used with sensitive loads.

- + RS-485 & Analogue as Standard
- + 16 Bit Setting & Measurement
- + Configurable OCP and OVP
- + Adjustable Voltage Ramp
- + CV/CC Operating Modes
- + Low Ripple and Noise

FURTHER DETAILS

The LAB-DSPH allows the user to set the voltage ramp up and ramp down times via the front panel and computer interface. RS-485 and analogue interfaces are provided 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.

Excellent setting and measurement resolution is provided via the 16 bit processors. In addition to the standard interfaces GPIB or LAN can also be optionally provided.

Measuring only 215mm wide and less than 45mm or 90mm high these compact DC Power Supplies can find space on even the most crowded test bench.

HIGHLIGHTED FEATURES



CONFORMAL COATING

An additional coating of the PCB is possible for all LAB-DSPH 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-DSPH 006-100 | 750W | 0 - 6V | 0 - 100A | 10 | 180 | 2.8 | 11 | 2.8 | 23 | 0.08 | 0.05 | 0.6 |
| LAB-DSPH 008-090 | 750W | 0 - 8V | 0 - 90A | 10 | 180 | 2.8 | 11 | 2.8 | 23 | 0.08 | 0.05 | 0.6 |
| LAB-DSPH 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-DSPH 020-038 | 750W | 0 - 20V | 0 - 38A | 10 | 76 | 4.0 | 5.8 | 4.0 | 12.6 | 0.08 | 0.05 | 0.8 |
| LAB-DSPH 030-025 | 750W | 0 - 30V | 0 - 25A | 10 | 63 | 5.0 | 4.5 | 5.0 | 10 | 0.08 | 0.08 | 0.9 |
| LAB-DSPH 040-019 | 750W | 0 - 40V | 0 - 19A | 10 | 48 | 6.0 | 3.9 | 6.0 | 8.8 | 0.08 | 0.08 | 1.0 |
| LAB-DSPH 050-015 | 750W | 0 - 50V | 0 - 15A | 10 | 43 | 8.0 | 3.6 | 8.0 | 8.2 | 0.08 | 0.08 | 1.1 |
| LAB-DSPH 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-DSPH 080-09.5 | 750W | 0 - 80V | 0 - 9.5A | 10 | 29 | 10 | 2.95 | 10 | 6.9 | 0.15 | 0.15 | 1.2 |
| LAB-DSPH 100-07.5 | 750W | 0 - 100V | 0 - 7.5A | 10 | 23 | 12 | 2.75 | 12 | 6.5 | 0.15 | 0.15 | 1.5 |
| LAB-DSPH 150-005 | 750W | 0 - 150V | 0 - 5A | 16 | 18 | 17 | 2.5 | 17 | 6.0 | 0.15 | 0.15 | 2.0 |
| LAB-DSPH 300-02.5 | 750W | 0 - 300V | 0 - 2.5A | 25 | 13 | 32 | 2.25 | 32 | 5.5 | 0.15 | 0.15 | 3.0 |
| LAB-DSPH 350-02.1 | 750W | 0 - 350V | 0 - 2.1A | 17 | 18 | 18 | 2.5 | 18 | 6.0 | 0.15 | 0.15 | 3.0 |
| LAB-DSPH 450-01.7 | 750W | 0 - 450V | 0 - 1.7A | 34 | 13 | 35 | 2.3 | 35 | 5.5 | 0.21 | 0.24 | 3.5 |
| LAB-DSPH 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-DSPH 006-200 | 1500W | 0 - 6V | 0 - 200A | 15 | 360 | 2.8 | 18.5 | 2.8 | 38 | 0.08 | 0.05 | 0.6 |
| LAB-DSPH 008-180 | 1500W | 0 - 8V | 0 - 180A | 15 | 360 | 2.8 | 18.5 | 2.8 | 38 | 0.08 | 0.05 | 0.6 |
| LAB-DSPH 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-DSPH 020-076 | 1500W | 0 - 20V | 0 - 76A | 15 | 152 | 4.0 | 9.6 | 4.0 | 20.2 | 0.08 | 0.05 | 0.8 |
| LAB-DSPH 030-050 | 1500W | 0 - 30V | 0 - 50A | 15 | 125 | 5.0 | 7.0 | 5.0 | 15 | 0.08 | 0.08 | 0.9 |
| LAB-DSPH 040-038 | 1500W | 0 - 40V | 0 - 38A | 15 | 95 | 6.0 | 5.8 | 6.0 | 12.6 | 0.08 | 0.08 | 1.0 |
| LAB-DSPH 050-030 | 1500W | 0 - 50V | 0 - 30A | 15 | 85 | 7.0 | 5.2 | 7.0 | 11.4 | 0.08 | 0.08 | 1.1 |
| LAB-DSPH 060-025 | 1500W | 0 - 60V | 0 - 25A | 15 | 75 | 8.0 | 4.5 | 8.0 | 10 | 0.08 | 0.08 | 1.1 |
| LAB-DSPH 080-019 | 1500W | 0 - 80V | 0 - 19A | 15 | 57 | 10 | 3.9 | 10 | 8.8 | 0.15 | 0.15 | 1.2 |
| LAB-DSPH 100-015 | 1500W | 0 - 100V | 0 - 15A | 15 | 45 | 12 | 3.5 | 12 | 8.0 | 0.15 | 0.15 | 1.5 |
| LAB-DSPH 150-010 | 1500W | 0 - 150V | 0 - 10A | 24 | 45 | 12 | 3.5 | 12 | 8.0 | 0.15 | 0.15 | 2.0 |
| LAB-DSPH 300-005 | 1500W | 0 - 300V | 0 - 5A | 38 | 25 | 32 | 2.5 | 32 | 6.0 | 0.15 | 0.15 | 3.0 |
| LAB-DSPH 350-04.2 | 1500W | 0 - 350V | 0 - 4.2A | 38 | 25 | 32 | 2.5 | 32 | 6.0 | 0.15 | 0.15 | 3.0 |
| LAB-DSPH 450-03.4 | 1500W | 0 - 450V | 0 - 3.4A | 68 | 18 | 35 | 2.5 | 32 | 5.8 | 0.21 | 0.24 | 3.5 |
| LAB-DSPH 600-02.5 | 1500W | 0 - 600V | 0 - 2.5A | 113 | 15 | 62 | 2.26 | 62 | 5.5 | 0.25 | 0.30 | 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.



TECHNICAL DATA

| GENERAL | |
|---|---|
| Input Voltage | 90 - 264VAC (full output power only available at at 115VAC upwards) |
| Input Frequency | 47-63Hz |
| Input Current (750W Output) | 4.1A (at 230VAC) |
| Input Current (1500W Output) | 8.1A (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} ± 2.5% |
| Analog Monitor Accuracy [0 - 10V] [Current] | I _{OUT} ± 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) | <5.1kg / <8.2kg |
| Dimensions (750W) | 215 × 470 × 44½mm [W × D × H] |
| Dimensions (1.5kW) | 215 × 470 × 89mm [W × D × H] |
| 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.

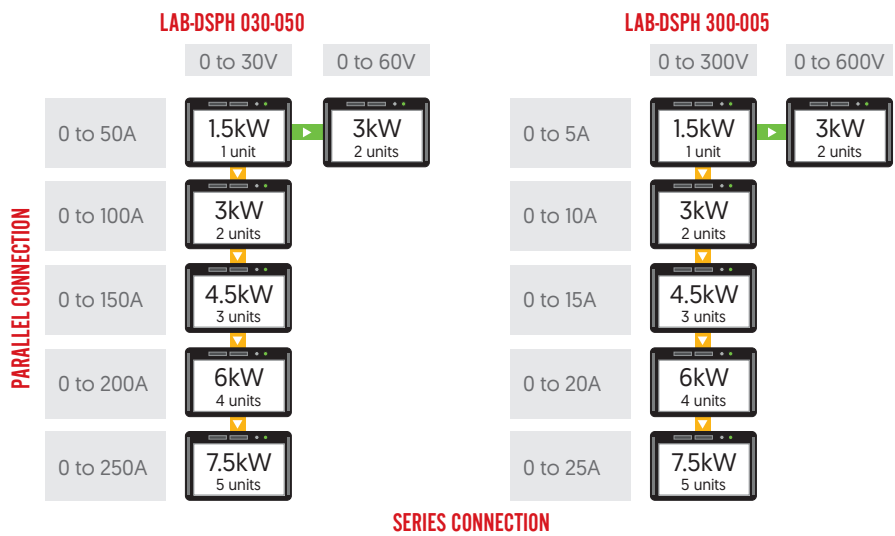


MASTER-SLAVE CAPABILITY

Up to 5 LAB-DSPH 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 1.5kW systems.



| OPTIONS | |
|--------------|--|
| CODE | DESCRIPTION |
| /GPIB* | Integrated GPIB interface in addition to standard RS485 and analogue |
| /LAN* | Integrated LAN interface in addition to standard RS485 and analogue |
| /CC | Conformal coating of PCBs to provide protection against moisture and high humidity |
| /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 [1UH] units into a 19" rack. |
| /19HU2 | Rackmounting parts for 2 × 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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POSITIVE **PROBLEM SOLVING**