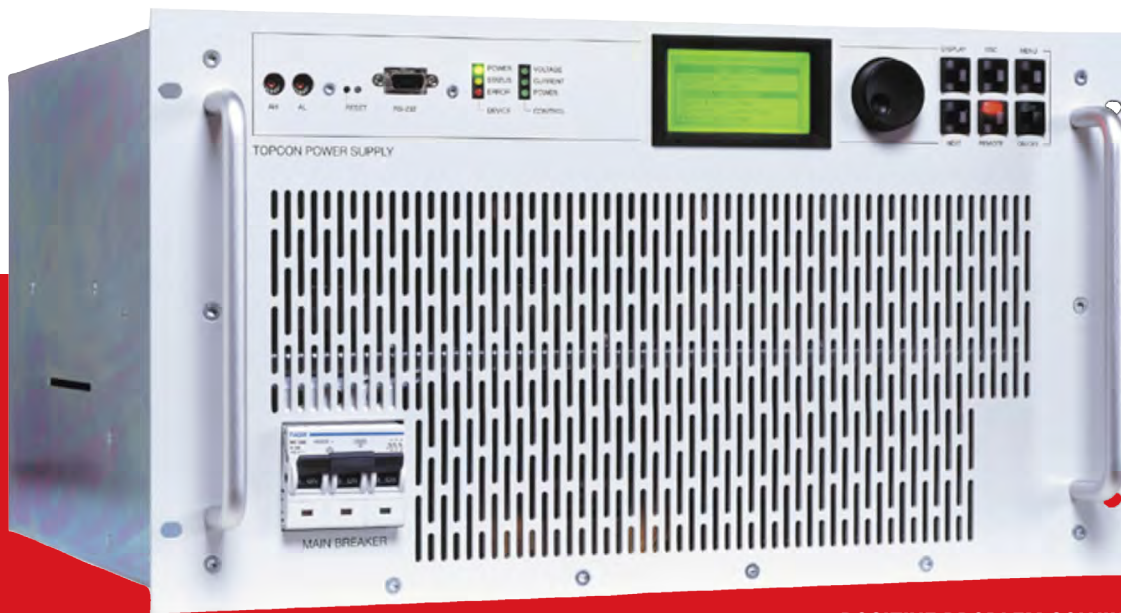


LAB-TC

ADVANCED HIGH POWER DC SOURCES



POSITIVE PROBLEM SOLVING **+ =**

The LAB-TC range is a highly advanced series of Programmable DC Power Supplies. The units are built into 19" racks and are available in 10kW, 16kW, 20kW and 32kW modules.

Constant voltage, current and power operating modes are provided. The internal resistance can be adjusted making the LAB-TC range ideal for battery simulation. Remote sense is provided to compensate for the voltage drop in the load lines. All regulation, monitoring and communication tasks are conducted by high performance micro-controllers and digital signal processors. This provides exceptional accuracy, reproducibility and long term stability.

- + Parallel, Series & Multi-load Operation
- + Can be Optimised for Individual Loads
- + Output Power from 10kW to 2MW+
- + Output Voltage from 50V to 2000V
- + Adjustable Internal Resistance
- + Full Digital Regulation

LAB-TC

ADVANCED HIGH POWER DC SOURCES



FURTHER DETAILS

These DC Sources can be fitted with front panel control and an LCD display. Analogue and RS-232 Interfaces are provided as standard. An easy to use, stand alone software program is also included. GPIB, CAN, RS-422 and USB are optionally available. LabVIEW and C/C++ is supported if required.

The PID parameters of the power supply's controllers can be configured to the needs of particular loads. A built in function generator option is offered with application area programming allowing the output to properly simulate actual devices such as solar panels, rotating generators, power stacks and fuel cells.

Bipolar and bidirectional functionality with mains recycling options can also be specified. By employing the latest IGBT technology and innovative nano crystalline transformers an excellent efficiency of up to 95% is achieved. A full cabinet integration service is available on request.

TECHNICAL DATA

GENERAL

Operating Modes	Constant Voltage [0 - 100% of V_{MAX}] Constant Current [0 - 100% of I_{MAX}] Constant Power [5 - 100% of P_{MAX}]
Input Voltage	3 × 360 - 440 VAC
Line Frequency	48 - 62Hz
Mains Connection Type	3L + PE (no neutral)
Internal Resistance Range	Adjustable $\Omega_{MAX} = [V_{NOM} / I_{NOM}]$
Interfaces	Analogue & RS-232
Remote Sense	0 - $V_{MAX} + 2\%$
Efficiency	Up to 95%
Load Regulation [CV, CC]	<± 0.1%
Line Regulation [CV, CC]	<± 0.1%
Response time [10-90%]	<2ms
Over Voltage Protection	0 - 110% of V_{MAX}
Over Current Protection	0 - 110% of I_{MAX}
Output Ripple [300Hz Vrms]	<0.4%
Output Noise [40kHz-1MHz]	<0.1 Vrms
Stability [CV, CC]	<± 0.05%
Operating Temperature	5 - 40°C
Temperature Coefficient [CV]	0.02% per °C
Temperature Coefficient [CC]	0.03% per °C
Temperature Coefficient [CV]	<0.02% of full scale value per°C
Temperature Coefficient [CC]	<0.03% of full scale value per°C
Dimensions [10kW & 16kW Modules]	19" × 6U × 495mm [W × H × D], a full cabinet integration service is available on request
Dimensions [20kW & 32kW Modules]	19" × 9U × 570mm [W × H × D], a full cabinet integration service is available on request
Weight [10kW & 16kW Modules]	44kg
Weight [20kW & 32kW Modules]	64kg
Individual unit specific technical summaries are available on request	

LAB-TC

ADVANCED HIGH POWER DC SOURCES



SELECTION TABLE

Part Number	Max. Power	Voltage Range	Current Range	Part Number	Max. Power	Voltage Range	Current Range
LAB-TC 10-52	10kW	0 - 52V	0 - 250A	LAB-TC 16-52	16kW	0 - 52V	0 - 400A
LAB-TC 10-65	10kW	0 - 65V	0 - 193A	LAB-TC 16-65	16kW	0 - 65V	0 - 308A
LAB-TC 10-100	10kW	0 - 100V	0 - 125A	LAB-TC 16-100	16kW	0 - 100V	0 - 200A
LAB-TC 10-130	10kW	0 - 130V	0 - 96A	LAB-TC 16-130	16kW	0 - 130V	0 - 153A
LAB-TC 10-200	10kW	0 - 200V	0 - 63A	LAB-TC 16-200	16kW	0 - 200V	0 - 100A
LAB-TC 10-400	10kW	0 - 400V	0 - 31A	LAB-TC 16-400	16kW	0 - 400V	0 - 50A
LAB-TC 10-500	10kW	0 - 500V	0 - 25A	LAB-TC 16-500	16kW	0 - 500V	0 - 40A
LAB-TC 10-600	10kW	0 - 600V	0 - 20A	LAB-TC 16-600	16kW	0 - 600V	0 - 32A
LAB-TC 10-800	10kW	0 - 800V	0 - 16A	LAB-TC 16-800	16kW	0 - 800V	0 - 25A
LAB-TC 10-1000	10kW	0 - 1000V	0 - 13A	LAB-TC 16-1000	16kW	0 - 1000V	0 - 20A
LAB-TC 20-52	20kW	0 - 52V	0 - 500A	LAB-TC 32-52	32kW	0 - 52V	0 - 700A
LAB-TC 20-65	20kW	0 - 65V	0 - 385A	LAB-TC 32-65	32kW	0 - 65V	0 - 600A
LAB-TC 20-100	20kW	0 - 100V	0 - 250A	LAB-TC 32-100	32kW	0 - 100V	0 - 400A
LAB-TC 20-130	20kW	0 - 130V	0 - 192A	LAB-TC 32-130	32kW	0 - 130V	0 - 308A
LAB-TC 20-200	20kW	0 - 200V	0 - 125A	LAB-TC 32-200	32kW	0 - 200V	0 - 200A
LAB-TC 20-320	20kW	0 - 320V	0 - 80A	LAB-TC 32-320	32kW	0 - 320V	0 - 125A
LAB-TC 20-400	20kW	0 - 400V	0 - 63A	LAB-TC 32-400	32kW	0 - 400V	0 - 100A
LAB-TC 20-500	20kW	0 - 500V	0 - 50A	LAB-TC 32-500	32kW	0 - 500V	0 - 80A
LAB-TC 20-600	20kW	0 - 600V	0 - 40A	LAB-TC 32-600	32kW	0 - 600V	0 - 64A
LAB-TC 20-800	20kW	0 - 800V	0 - 32A	LAB-TC 32-800	32kW	0 - 800V	0 - 50A
LAB-TC 20-1000	20kW	0 - 1000V	0 - 25A	LAB-TC 32-1000	32kW	0 - 1000V	0 - 40A
LAB-TC 20-1200	20kW	0 - 1200V	0 - 20A	LAB-TC 32-1200	32kW	0 - 1200V	0 - 33A

Different output ranges and application/user specific options are possible. Please contact ETPS Ltd. to discuss your requirements.



OPTIONS

CODE	DESCRIPTION
/4062	Ruggedisation specification for vehicle mount projects
/480	Input voltage range of $3 \times 432\text{-}528\text{Vac}$, 48-62Hz (for models $\geq 16\text{kW}$)
/WR	Wide input of $3 \times 360\text{-}528\text{Vac}$, 50/60Hz (only available for 1kV units at 20kW or 32kW)
/HMI	Front panel control and display
/LCAL	Integrated liquid cooling of the power stage
/ISR	Integrated safety relay for shutdown to EN954-1 Cat 3/4
/IRXTS	Maximum adjustable internal resistance range extended to 12,000m Ω
/TFE	Integrated function generating engine with application area (parametric) programming
/SAS	Solar array simulation GUI (includes TFE option)
/BATSIM	GUI simulating battery characteristics with adjustable parameters
/CAPSIM	GUI simulating the electrical characteristics of capacitors with adjustable parameters
/CANCABLE	Connecting cable for multi-unit operation
/RCU	Remote control unit with up to 40m of cable
/PACOB	Protection against accidental contact of output current bars
/RS232REAR	RS-232 on front and rear panel (time shared mode with RS-232 on front)
/RS422	Differential serial interface (time shared mode with RS-232)
/IEEE	Integrated IEEE488.2 (GPIB) interface. (RS-232 only possible on rear panel)
/CANOPEN	Integrated CAN/CANopen interface. (RS-232 only possible on rear panel)
/CANMP	Integrated CANmp interface. (RS-232 only possible on rear panel)
/OPTOLINK	Rear panel integrated fibre optic interface. (RS-232 only possible on rear panel)
/USB	Integrated USB interface. (RS-232 only possible on rear panel)
/ETH	Ethernet interface with listener and talker functions over a LAN (RS232REAR required)
/FILTER	Input air filter
/CAN+USB	Combined CAN and USB interface
/RPP	Protection against reverse polarity of the load
/RMB	Remote Measure Box for higher dynamics in multi-unit operation
/EMIFILTER	EMI filter for DC output

HIGHLIGHTED FEATURES

RUGGEDISED ADAPTATIONS

Ruggedisation of units to military standards is possible for shipborne & vehicle projects. This ensures suitability in harsh conditions by providing protection against shock, vibration & humidity.

FUNCTION GENERATOR

Complex DC waveforms can be implemented through an embedded function generator. Standard square, sawtooth, sine & user defined shapes can be plotted against time. V/I & V/W relationships can also be programmed.

CABINET INTEGRATIONS

Our design specialists will look to find elegant solutions to integrate systems into set cabinet dimensions. Flight case integrations are also possible to provide mobile power equipment.

INTERFACES

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

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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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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