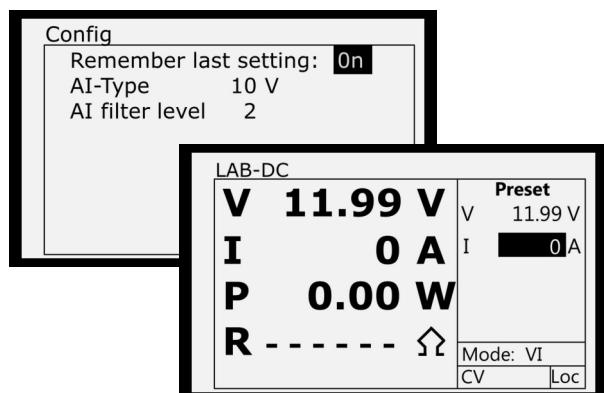
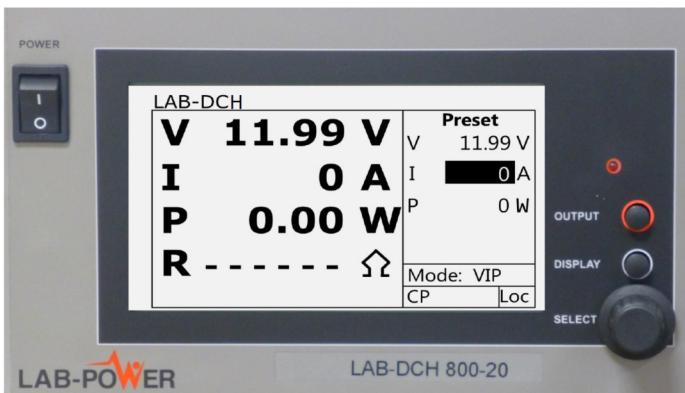


Overview

The Lab-Power LAB-DCH range of DC power supplies are a natural choice for any application requiring a compact, efficient, high performance power supply. A wide range of models offering just the voltage and current range you require. Switch mode technology combines with advanced digital control to give a cost effective solution.

Front Panel



Quality & Innovation

Whether we are producing a standard unit or creating one of our special models, we strive to maintain two core engineering values: refined quality and practical innovation. Our units are built using the best electronic components and are checked with painstaking accuracy. This ensures that only products of uncompromising quality are supplied to you, our customer.

We also regard the continued innovation of new and current products as crucial to our future success. This philosophy has always kept us more than the proverbial jump ahead of the competition. We continue to add new and original features to our product lines that you're unlikely to find elsewhere.

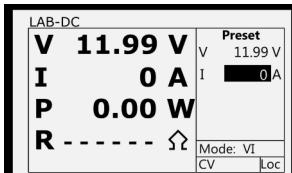
We also continue to lead the industry in achieving extraordinary power densities ensuring the most compact units possible. Efficient, compact and easy-to-use are important criteria today. These units have been designed to meet exacting standards and have proved highly effective in laboratories, test and production environments, indeed anywhere that reliable power is needed. Safety of valuable equipment is assured by an Over Voltage Protection feature: if either the operator of the power supply, or the device being powered exceeds the preset OVP value, the supply shuts down and will not automatically come back on line until it is manually (or remotely) reset.

- Compact design, up to 94% efficient
- Power range from 5kW to 60kW. More by paralleling several units
- Fast response to load changes
- Constant current/voltage/power /resistance simulation
- Over Voltage Protection – the output shuts down at the programmed level
- Voltage/Current Limit Configuration
- Short-circuit and overload proof
- RS232 & Digital/analogue control interfaces (Standard)
- Solar simulation software with Lab-View driver is available
- Temperature controlled fans, no unnecessary noise
- Air flow is front to back, no additional cooling needed in racked systems
- Master/Slave parallel and series configurations
- Output On for preset time, Volts/Amps per second slew, both user selectable
- Special versions on request. High slew rate option available
- Remember last settings feature
- Sensing



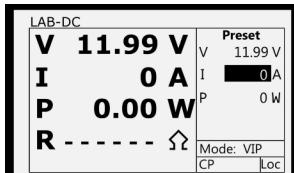
Operation Modes

VI



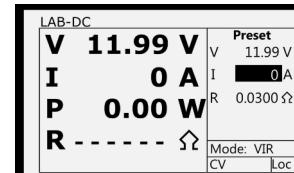
Constant V (CV)
Or
Constant I (CC)

VIP



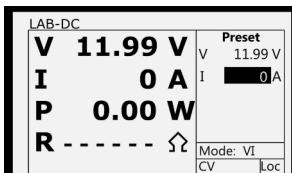
V Constant
I falls when
 V^*I

VIR



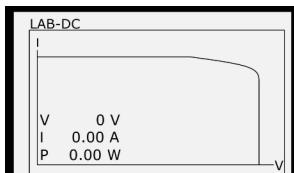
V sags to
emulate a
resistor of R
ohms

PV Sim

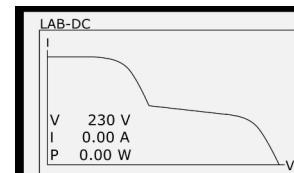


Constant V (CV)
Or
Constant I (CC)

IV Curve



IV Curve (Shaded)



In the Pvsim mode the characteristics of a PV generator can be simulated. Open-circuit voltage Vo and short-circuit current Ik.

Value for Vmpp may be in the range from 0.6 to 0.95 * V.

Value for Impf may be in the range from 0.6 to 0.95 * I.

See additional datasheet for more details

LAB-DCH 5-60kW

For the 5-60kW range please [click here](#)

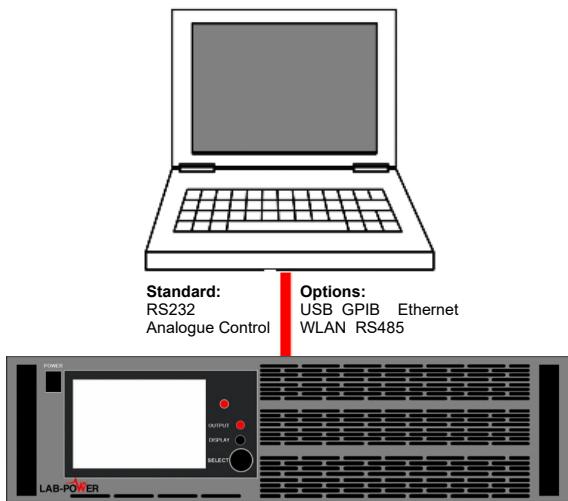
Model	Voltage	5KW	10KW	15KW	20KW	25KW	30KW
LAB-DCH20-XX	0-20V	0-250A	0-500A	0-750A	0-1000A	0-1250A	0-1500A
LAB-DCH40-XX	0-40V	0-125A	0-250A	0-375A	0-500A	0-625A	0-750A
LAB-DCH80-XX	0-80V	0-65A	0-130A	0-195A	0-260A	0-325A	0-390A
LAB-DCH100-XX	0-100V	0-50A	0-100A	0-150A	0-200A	0-250A	0-300A
LAB-DCH150-XX	0-150V	0-35A	0-70A	0-100A	0-140A	0-175A	0-200A
LAB-DCH200-XX	0-200V	0-25A	0-50A	0-75A	0-100A	0-125A	0-150A
LAB-DCH300-XX	0-300V	0-17A	0-34A	0-50A	0-68A	0-85A	0-100A
LAB-DCH450XX	0-450V	0-11A	0-22A	0-33A	0-44A	0-55A	0-66A
LAB-DCH600-XX	0-600V	0-8.5A	0-17A	0-25A	0-34A	0-42A	0-50A
LAB-DCH800-XX	0-800V	0-6.25A	0-13A	0-19A	0-26A	0-32A	0-38A
LAB-DCH1000-XX	0-1000V	0-5A	0-10A	0-15A	0-20A	0-25A	0-30A
LAB-DCH1200-XX	0-1200V	0-4A	0-8A	0-12A	0-16A	0-20A	0-24A
LAB-DCH1500-XX	0-1500V	0-3.4A	0-7A	0-10A	0-14A	0-17A	0-20A

Model	Voltage	35KW	40KW	45KW	50KW	55KW	60KW
LAB-DCH20-XX	0-20V	0-1750A	0-2000A	0-2250A	0-2500A	0-2750A	0-3000A
LAB-DCH40-XX	0-40V	0-875A	0-1000A	0-1125A	0-1250A	0-1375A	0-1500A
LAB-DCH80-XX	0-80V	0-450A	0-520A	0-585A	0-625A	0-700A	0-780A
LAB-DCH100-XX	0-100V	0-350A	0-400A	0-450A	0-500A	0-550A	0-600A
LAB-DCH150-XX	0-150V	0-235A	0-270A	0-300A	0-350A	0-375A	0-400A
LAB-DCH200-XX	0-200V	0-175A	0-200A	0-225A	0-250A	0-275A	0-300A
LAB-DCH300-XX	0-300V	0-117A	0-136A	0-150A	0-170A	0-185A	0-200A
LAB-DCH450X	0-450V	0-77A	0-88A	0-99A	0-110A	0-121A	0-132A
LAB-DCH600-XX	0-600V	0-59A	0-68A	0-75A	0-84A	0-92A	0-100A
LAB-DCH800-XX	0-800V	0-45A	0-52A	0-57A	0-64A	0-70A	0-76A
LAB-DCH1000-XX	0-1000V	0-35A	0-40A	0-45A	0-50A	0-55A	0-60A
LAB-DCH1200-XX	0-1200V	0-30A	0-34A	0-36A	0-40A	0-46A	0-50A
LAB-DCH1500-XX	0-1500V	0-24A	0-27A	0-34A	0-34A	0-37A	0-40A

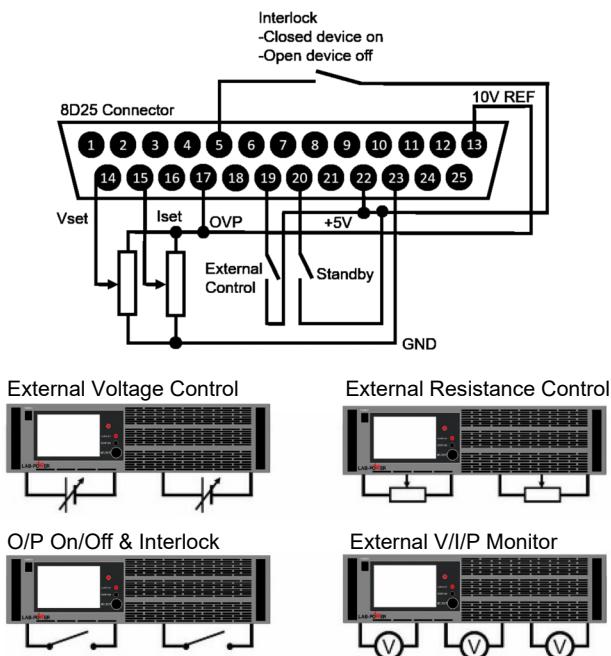


Multiple Interfaces

Isolated analogue control and RS-232 interfaces come as standard. Options are: Ethernet, GPIB bus, RS-485, USB, and WLAN.



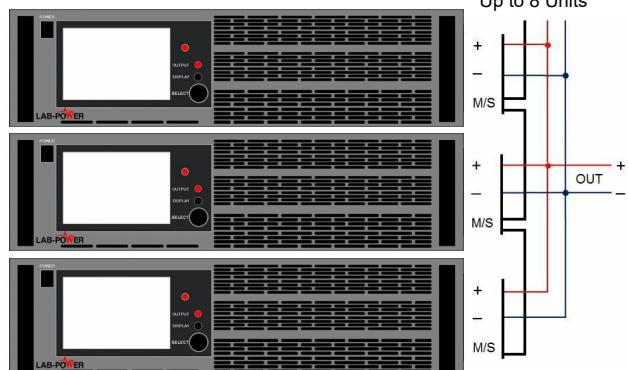
Isolated Analogue Control (Standard) 0-5 / 10V



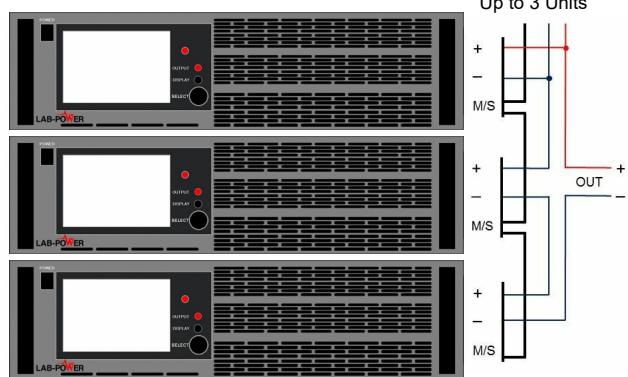
Master / Slave

The intelligent control senses that multiple units are connected in series / Parallel. Set points are respectively calculated. Displays will show the total voltage or Current

Parallel Mode

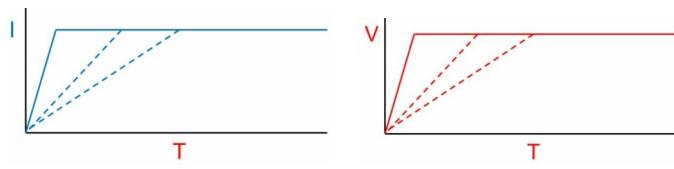


Series Mode



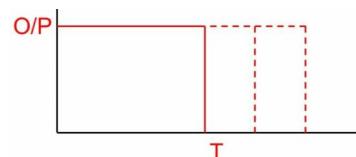
Soft Start

Adjustable rise time – Soft Start for voltage and current rise. Less stress on powered device.



Time Limit Output On

Output can be programmed to turn off automatically after a programmed number of seconds.



Remember Last Setting

If this feature enabled (**On**), selected parameters will be retained after a power-cycle. If this option is deactivated (**Off**), standard setting (0V/0A/VIMode) will be loaded after power cycle.

19 digital in Ext. Control Activates analog control
20 digital in Standby Activates standby
21 analogue out listmon Monitor output current
22 pwr + 5 V Output 5 V supply voltage
23 gnd -
24 digital out Error Signals shut down by OVP
25 gnd -
26 -nc- -

Specification - Output

Output Voltage / [V]	15	35	70	100	300	600	800	1000	1200	1500								
Output Current for 5kW Unit/ [A]	250 ⁴	142	72	50	17	8.5	6.25	5	4.2	3.3								
Static Regulation	$\pm 0.1\%$ of F.S.																	
Line Regulation	Voltage	$\pm 0.02\%$ F.S.																
	Current	$\pm 0.02\%$ F.S.																
Load Regulation	Voltage	$\pm 0.05\%$ F.S. $\pm 2\text{mV}$																
	Current	$\pm 0.05\%$ F.S. $\pm 20\text{mA}$																
Dynamic Response Time @ Load Step 10%-90%	< 3ms																	
Ripple and Noise	Voltage Ripple (mV rms) ⁵ 300kHz	10 ¹²	25 ¹²	40 ¹²	40 ¹²	300 ¹²	300 ¹²	300 ¹²	300	300	400							
	Voltage Ripple (mV rms) ⁵ 20MHz	15	35	60	60	400	400	400	400	400	500							
	Voltage Ripple (p-p) 300kHz	15 ¹²	35 ¹²	60 ¹²	60 ¹²	400 ¹²	400 ¹²	700 ¹²	800	1500	1500							
	Voltage Ripple (p-p) 20MHz	40	80	140	140	900	900	1000 ¹²	1200	2500	2500							
	Current Ripple (p-p)	<0.5 % of F.S.																
	Current Ripple (rms)	< 0.4% of F.S.																
Isolation	Primary / Secondary	3000VAC																
	DC-Output / Earth	500VDC					2000VDC											
	Primary / Earth	2150VDC																
Rise Time, Full load	6ms	12ms	20ms			40ms			6 ms ¹³									
Rise Time, No load	5ms	10ms					20ms			5 ms ¹³								
Fall Time, Full Load	15ms	20ms		40ms	50ms	60ms	80ms	100ms	25 ms ¹³									
Fall Time, No Load	5s to get below 50V																	
Relative Accuracy / [%] ⁷																		
Voltage / [V]	0.25	0.038	0.088	0.175	0.25	0.75	1.5	2	2.5	3	3.75							
Current / [A]	0.4	1	0.6	0.3	0.2	0.068	0.034	0.026	0.02	0.017	0.013							
Relative Accuracy for Remote Voltage Sensing Operation (worst case) ⁷ / [%]																		
Voltage / [V]	0.5	0.075	0.175	0.35	0.5	1.5	3	4	5	6	7.5							
Maximum Sensing Voltage Over Nominal Voltage	1% of F.S																	
Absolute Accuracy for Master-Slave Operation ⁷ / [%]																		
M/S-Parallel-Mode ^{7 8} N: number of parallel connected device; example N=3	Maximum Number of Parallel Units: 8																	
Voltage / [V]	0.25	0.038	0.088	0.175	0.25	0.75	1.5	2	2.5	3	3.75							
Current / [A]	0.4 x N	3	1.74	0.864	0.6	0.204	0.102	0.078	0.06	0.05	0.04							
M/S-Serial-Mode ^{7 8} N: number of serial connected device; example N=3	Maximum Number of Series Units: 3 Maximum Output Voltage to Earth: 2000V																	
Voltage / [V]	0.25 x N	0.113	0.263	0.525	0.75	0.525	0.75	2.25	4.5	6	7.5							
Current / [A]	0.4	1	0.58	0.288	0.2	0.288	0.2	0.068	0.034	0.026	0.02							
DISPLAY RESOLUTION																		
Resolution Voltage Display & Voltage Setting Resolution	15V - 99.99V				100V - 999.9V				1000V - 1500V									
	0.000				000.0				0000									
Resolution Current Display & Current Setting Resolution	0A - 9.999A		10A - 99.99A		100A - 999.9A				1000A - 9999A									
	0.000		00.00		000.0				0000									
DEVICE FUNCTION																		
OVP	Over Voltage Protection: is adjustable between 0 % and 120 % of Voltage full range																	
OCP	Over Current Protection: is implemented by the current set point, the output current can not go over the set output current																	
OTP	Over Temperature Protection: if the internal heat sink temperature goes above 90°C the device will automatically shut down																	

Specification Input

	LAB-DCHA										
	LAB-DCA										
Device Power	3kW	4kW	5kW	6kW	8kW	10kW	15kW	20kW	30kW	45kW	60kW
Connection	3 wire (1P+N+E) / 5 wire (3P+N+E)										
Input 1P/230	1 x 230 Vac (207-253 Vac 47-63Hz)										
Input 3P/200	3 x 208 Vac (180-220 Vac 47-63Hz)										
Input 3P/208	3 x 208 Vac (187-229 Vac 47-63Hz)										
Input 3P/400	3 x 400 Vac (360-440 Vac 47-63Hz)										
Input 3P/440	3 x 440 Vac (396-484 Vac 47-63Hz)										
Input 3P/480	3 x 480 Vac (432-528 Vac 47-63Hz)										
Max .allowed non symmetry (3P-System)	<3%										
Input Current 1P/230 model	22 Arms	28 Arms	33 Arms	x ¹⁴							
Input Current 3P/200 model	15 Arms	20 Arms	25 Arms	30 Arms	40 Arms	50 Arms	74 Arms	99 Arms	148 Arms	221 Arms	295 Arms
Input Current 3P/208 model	14 Arms	19 Arms	23 Arms	28 Arms	37 Arms	46 Arms	69 Arms	92 Arms	138 Arms	207 Arms	276 Arms
Input Current 3P/400 model ^{1 2}	7.5 Arms	10 Arms	11.5 Arms	15 Arms	20 Arms	22.9 Arms	34.4 Arms	45.8 Arms	68.7 Arms	103.1 Arms	137.5 Arms
Input Current 3P/440 model ^{1 2}	7 Arms	9 Arms	11 Arms	14 Arms	18 Arms	21 Arms	32.5 Arms	42 Arms	63.5 Arms	95 Arms	127 Arms
Input Current 3P/480 model ^{1 2}	6.5 Arms	8 Arms	10 Arms	12.5 Arms	16.5 Arms	19.5 Arms	30 Arms	39 Arms	58 Arms	87 Arms	117 Arms
Inrush Transient Current ²	< 25	< 25	< 25	< 51	< 51	< 51	< 76	< 102	< 153	< 229	< 305
Nominal Current Internal Fuse 3P/400 model	15A	15A	15A	30A	30A	30A	45A	60A	90A	135A	180A
Recommended Supply Breaker 3P/400 model (value and curve)	16 A Type D/K	16 A Type D/K	16 A Type D/K	32 A Type D/K	32 A Type D/K	32 A Type D/K	40 A Type D/K	63 A Type D/K	80 A Type D/K	120 A Type D/K	150 A Type D/K
Leakage Current	< 35 mA										
cos phi	> 0.7										
Harmonic Content ³	50Hz = 72% 100Hz = 2% 150Hz = 0.9% 200Hz = 0.1% 250Hz = 11% 350 Hz = 0.6%										
Efficiency Type	Up to 94%										

1: For nominal current and nominal voltage

2: For nominal input voltage

3: Total harmonic distortion input current ([%]/lin)

4: 250A is the maximum possible current for a 5kW Unit

5: If the ripple is not specified, the maximum allowed ripple is 0.2% of F.S.

6: The measurement of the peak to peak ripple is very dependent on the measurement setup

7: The quoted accuracy is also valid for all other interfaces

8: The relative accuracy will not change. Only the absolute value will change because the nominal Values of the "Unit" change.

9: All readings are typical values

10: The LAB-DCH unit can also build up at 30 kW, 45 kW, 60 kW, 75 kW and 90 kW units

11: The ripple measurement method of Lab-Power is specified at application note : Ripple-Spec

12: The ripple specification are reservation to change on the part of manufacturer

13: Device is currently only available with high speed output (Low output cap)

14: Standard unit not available

Ambient Conditions

Cooling	Fans
Operating temperature	0-50°C
Storage temperature	-20°C -70°C
Humidity	< 80%
Operating height	< 2000m
Vibration	10-55Hz / 1 min / 2G XYZ
Shock	< 20G
Weight-LAB-DC	3 - 5kW 18kg, 6 - 10kW 25kg
Weight-LAB-DCH	5kW 19kg, 10kW 26kg, 15kW 33kg



Interface

Analogue Interface	Digital outputs (CV, Standby, Error)	Output type: Open collector with pull-up resistor 10k to +5V Isink(max): 50mA Input resistance: 47kΩ Maximum input voltage: 50V High level: Vin > 2V Low Level: Vin < 0.8V
	Digital inputs (Ext. Control, standby)	Output resistance : 100Ω Minimum permissible load resistance : 2kΩ Minimum load resistance for 0.1% accuracy: 100kΩ
	Analogue outputs (Xmon)	Input resistance: 1MΩ Maximum premissible input voltage: 25V
	Analogue inputs (Xset)	Reference voltage Vref: 10V ± 10mV Output resistance: < 10Ω
	Reference voltage	Maximum output current: 10mA (not short-circuit-proof)
	5V - supply voltage	Output voltage: 5V ± 300mV Maximum output current: 50mA (not short-circuit-proof)
	Signal inputs (RxD,CTS)	Maximum input voltage: ± 25V Input resistance: 5kΩ (Type) Switching thresholds: VH < -3V , VL > +3V
	Signal outputs (TxD,RTS)	Output voltage (at RL > 3kΩ): min ± 5V, Type ± 9V, max ± 10V Output resistance: < 300Ω Short circuit current: Type ± 10mA
	RS 485	Maximum input voltage Input resistance Output current High level Low Level

Options list

USB - Interface	LAN - Interface	ATE - Only ATE mode, no front panel	LT - Interface IEEE488
PROT - Output Protection Diode	SD - SD Card Slot	FP - Front Panel Output	TC - Input/Output Terminal Covers

Distributed by:

TELONIC
 TEST INSTRUMENTS & POWER SUPPLIES
 Toutley Industrial Estate, Toutley Road,
 Wokingham, Berkshire, RG41 1QN.
 Tel: 0118 9786911 Email: info@telonic.co.uk
WWW.TELONIC.CO.UK

