



Overview

The Lab-Power LAB-DCA/DCHA 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.

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.

- Efficiency up to 94 %
- Compact design
 - LAB-DCA 3-10kW 2U
 - LAB-DCHA 5-15kW 3U, 20-30kW 6U, 35-45kW 9U, 50-60kW 12U
- Active parallel and serial connectable
- Simple front panel operation
- Constant current, constant voltage
- Digital interfaces IEEE488, RS485, USB and LAN (optional)
- Standard integrated ATI 5/10 galvanically isolated analogue interface: 0 – 5 V or 0 – 10 V (user selectable) and RS232
- 7-segment display
- Special version on request
- Vmax and Imax randomly selectable to limit maximum output voltage and current

LAB-DCA 3-10kW

3kW Range

Model	Voltage	Current
LAB-DCA15-200	0-15V	0-200A
LAB-DCA20-150	0-20V	0-150A
LAB-DCA25-120	0-25V	0-120A
LAB-DCA35-90	0-35V	0-90A
LAB-DCA45-70	0-45V	0-70A
LAB-DCA70-45	0-70V	0-45A
LAB-DCA100-30	0-100V	0-30A
LAB-DCA120-25	0-120V	0-25A
LAB-DCA150-20	0-150V	0-20A
LAB-DCA200-15	0-200V	0-15A
LAB-DCA250-12	0-250V	0-12A
LAB-DCA300-10	0-300V	0-10A
LAB-DCA400-7.5	0-400V	0-7.5A
LAB-DCA500-6	0-500V	0-6A
LAB-DCA600-5	0-600V	0-5A
LAB-DCA800-4	0-800V	0-4A
LAB-DCA1000-3	0-1000V	0-3A
LAB-DCA1200-2.6	0-1200V	0-2.6A
LAB-DCA1500-2	0-1500V	0-2A

4kW Range

Model	Voltage	Current
LAB-DCA20-200	0-20V	0-200A
LAB-DCA25-160	0-25V	0-160A
LAB-DCA35-115	0-35V	0-115A
LAB-DCA45-90	0-45V	0-90A
LAB-DCA70-60	0-70V	0-60A
LAB-DCA100-40	0-100V	0-40A
LAB-DCA120-33	0-120V	0-33A
LAB-DCA150-30	0-150V	0-30A
LAB-DCA200-20	0-200V	0-20A
LAB-DCA250-16	0-250V	0-16A
LAB-DCA300-15	0-300V	0-15A
LAB-DCA400-10	0-400V	0-10A
LAB-DCA500-10	0-500V	0-8A
LAB-DCA600-7	0-600V	0-7A
LAB-DCA800-5	0-800V	0-5A
LAB-DCA1000-4	0-1000V	0-4A
LAB-DCA1200-3.4	0-1200V	0-3.4A
LAB-DCA1500-2.7	0-1500V	0-2.7A

5kW Range

Model	Voltage	Current
LAB-DCA25-200	0-25V	0-200A
LAB-DCA35-150	0-35V	0-150A
LAB-DCA45-120	0-45V	0-120A
LAB-DCA70-75	0-70V	0-75A
LAB-DCA100-50	0-100V	0-50A
LAB-DCA120-41	0-120V	0-41A
LAB-DCA150-35	0-150V	0-35A
LAB-DCA200-25	0-200V	0-25A
LAB-DCA250-20	0-250V	0-20A
LAB-DCA300-17	0-300V	0-17A
LAB-DCA400-12.5	0-400V	0-12.5A
LAB-DCA500-10	0-500V	0-10A
LAB-DCA600-8.5	0-600V	0-8.5A
LAB-DCA800-6.25	0-800V	0-6.25A
LAB-DCA1000-5	0-1000V	0-5A
LAB-DCA1200-4.2	0-1200V	0-4.2A
LAB-DCA1500-3.4	0-1500V	0-3.4A



6kW Range

Model	Voltage	Current
LAB-DCA15-400	0-15V	0-400A
LAB-DCA20-300	0-20V	0-300A
LAB-DCA25-240	0-25V	0-240A
LAB-DCA35-175	0-35V	0-175A
LAB-DCA45-140	0-45V	0-140A
LAB-DCA70-90	0-70V	0-90A
LAB-DCA100-60	0-100V	0-60A
LAB-DCA120-50	0-120V	0-50A
LAB-DCA150-40	0-150V	0-40A
LAB-DCA200-30	0-200V	0-30A
LAB-DCA250-24	0-250V	0-24A
LAB-DCA300-20	0-300V	0-20A
LAB-DCA400-15	0-400V	0-15A
LAB-DCA500-12	0-500V	0-12A
LAB-DCA600-10	0-600V	0-10A
LAB-DCA800-7.5	0-800V	0-7.5A
LAB-DCA1000-6	0-1000V	0-6A
LAB-DCA1200-5	0-1200V	0-5A
LAB-DCA1500-4	0-1500V	0-4A

8kW Range

Model	Voltage	Current
LAB-DCA15-500	0-15V	0-500A
LAB-DCA20-440	0-20V	0-440A
LAB-DCA25-320	0-25V	0-320A
LAB-DCA35-230	0-35V	0-230A
LAB-DCA45-180	0-45V	0-180A
LAB-DCA70-115	0-70V	0-115A
LAB-DCA100-80	0-100V	0-80A
LAB-DCA120-66	0-120V	0-66A
LAB-DCA150-55	0-150V	0-55A
LAB-DCA200-40	0-200V	0-40A
LAB-DCA250-32	0-250V	0-32A
LAB-DCA300-30	0-300V	0-30A
LAB-DCA400-20	0-400V	0-20A
LAB-DCA500-16	0-500V	0-16A
LAB-DCA600-15	0-600V	0-15A
LAB-DCA800-10	0-800V	0-10A
LAB-DCA1000-8	0-1000V	0-8A
LAB-DCA1200-6.7	0-1200V	0-6.7A
LAB-DCA1500-5.4	0-1500V	0-5.4A

10kW Range

Model	Voltage	Current
LAB-DCA20-500	0-20V	0-500A
LAB-DCA25-400	0-25V	0-400A
LAB-DCA35-350	0-35V	0-350A
LAB-DCA45-250	0-45V	0-250A
LAB-DCA70-175	0-70V	0-175A
LAB-DCA100-100	0-100V	0-100A
LAB-DCA120-83	0-120V	0-83A
LAB-DCA150-75	0-150V	0-75A
LAB-DCA200-50	0-200V	0-50A
LAB-DCA250-40	0-250V	0-40A
LAB-DCA300-40	0-300V	0-40A
LAB-DCA400-25	0-400V	0-25A
LAB-DCA500-20	0-500V	0-20A
LAB-DCA600-17	0-600V	0-17A
LAB-DCA800-13	0-800V	0-13A
LAB-DCA1000-10	0-1000V	0-10A
LAB-DCA1200-8.4	0-1200V	0-8.4A
LAB-DCA1500-7	0-1500V	0-7A

LAB-DCHA 5-60kW

Model	Voltage	5KW	10KW	15KW	20KW	25KW	30KW
LAB-DCHA20-XX	0-20V	0-250A	0-500A	0-750A	0-1000A	0-1250A	0-1500A
LAB-DCHA40-XX	0-40V	0-125A	0-250A	0-375A	0-500A	0-625A	0-750A
LAB-DCHA80-XX	0-80V	0-65A	0-130A	0-195A	0-260A	0-325A	0-390A
LAB-DCHA100-XX	0-100V	0-50A	0-100A	0-150A	0-200A	0-250A	0-300A
LAB-DCHA150-XX	0-150V	0-35A	0-70A	0-100A	0-140A	0-175A	0-200A
LAB-DCHA200-XX	0-200V	0-25A	0-50A	0-75A	0-100A	0-125A	0-150A
LAB-DCHA300-XX	0-300V	0-17A	0-34A	0-50A	0-68A	0-85A	0-100A
LAB-DCHA450XX	0-450V	0-11A	0-22A	0-33A	0-44A	0-55A	0-66A
LAB-DCHA600-XX	0-600V	0-8.5A	0-17A	0-25A	0-34A	0-42A	0-50A
LAB-DCHA800-XX	0-800V	0-6.25A	0-13A	0-19A	0-26A	0-32A	0-38A
LAB-DCHA1000-XX	0-1000V	0-5A	0-10A	0-15A	0-20A	0-25A	0-30A
LAB-DCHA1200-XX	0-1200V	0-4A	0-8A	0-12A	0-16A	0-20A	0-24A
LAB-DCHA1500-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-DCHA20-XX	0-20V	0-1750A	0-2000A	0-2250A	0-2500A	0-2750A	0-3000A
LAB-DCHA40-XX	0-40V	0-875A	0-1000A	0-1125A	0-1250A	0-1375A	0-1500A
LAB-DCHA80-XX	0-80V	0-450A	0-520A	0-585A	0-625A	0-700A	0-780A
LAB-DCHA100-XX	0-100V	0-350A	0-400A	0-450A	0-500A	0-550A	0-600A
LAB-DCHA150-XX	0-150V	0-235A	0-270A	0-300A	0-350A	0-375A	0-400A
LAB-DCHA200-XX	0-200V	0-175A	0-200A	0-225A	0-250A	0-275A	0-300A
LAB-DCHA300-XX	0-300V	0-117A	0-136A	0-150A	0-170A	0-185A	0-200A
LAB-DCHA450X	0-450V	0-77A	0-88A	0-99A	0-110A	0-121A	0-132A
LAB-DCHA600-XX	0-600V	0-59A	0-68A	0-75A	0-84A	0-92A	0-100A
LAB-DCHA800-XX	0-800V	0-45A	0-52A	0-57A	0-64A	0-70A	0-76A
LAB-DCHA1000-XX	0-1000V	0-35A	0-40A	0-45A	0-50A	0-55A	0-60A
LAB-DCHA1200-XX	0-1200V	0-30A	0-34A	0-36A	0-40A	0-46A	0-50A
LAB-DCHA1500-XX	0-1500V	0-24A	0-27A	0-34A	0-34A	0-37A	0-40A

Specification - Output

Output Voltage / [V]		15	35	70	100	300	600	800	1000	1200	1500
Output Current for 5kW Unit/ [A]		250 ⁴	145	72	50	17	8.5	6.5	5	4.2	3.3
Static Regulation		± 0.1% of F.S.									
Line Regulation	Voltage	±0.02% F.S.									
	Current	±0.02% F.S.									
Load Regulation	Voltage	±0.05% F.S. ± 2mV									
	Current	±0.05% F.S. ± 20mA									
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 20kHz	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) 20kHz	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	0.58	0.288	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									
DISPLAY RESOLUTION											
Resolution Voltage Display & Voltage Setting Resolution		15V - 99.99V			100V - 999.9V			1000V - 1500V			
		00.00			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 (187-229 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	x ¹⁴	x ¹⁴	x ¹⁴	x ¹⁴	x ¹⁴	x ¹⁴	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-DCHA 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

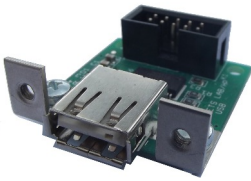
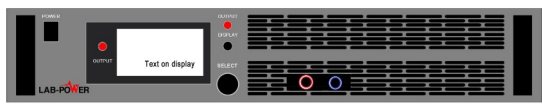
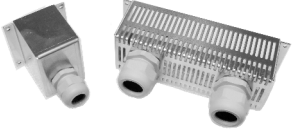
Ambient Conditions

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-DCA	3 - 5kW 18kg, 6 - 10kW 25kg
Weight-LAB-DCHA	5kW 19kg, 10kW 26kg, 15kW 33kg

Interface

Analogue Interface	Digital outputs (CV, Standby, Error)	Output type: Open collector with pull-up resistor 10kΩ to +5V Isink(max): 50mA
	Digital inputs (Ext. Control, standby)	Input resistance: 47kΩ
		Maximum input voltage: 50V
		High level: Vin > 2V
	Analogue outputs (Xmon)	Low Level: Vin < 0.8V
		Output resistance : 100Ω
		Minimum permissible load resistance : 2kΩ
	Analogue inputs (Xset)	Minimum load resistance for 0.1% accuracy: 100kΩ
		Input resistance: 1MΩ
		Maximum permissible input voltage: 25V
RS 232	Reference voltage	Reference voltage Vref: 10V ± 10mV
		Output resistance: < 10Ω
		Maximum output current: 10mA (not short-circuit-proof)
	5V - supply voltage	Output voltage: 5V ± 300mV
		Maximum output current: 50mA (not short-circuit-proof)
		Maximum input voltage: ± 25V
	Signal inputs (Rx,D,CTS)	Input resistance: 5kΩ (Type)
		Switching thresholds: VH < -3V , VL > +3V
		Output voltage (at RL > 3kΩ): min ± 5V, Type ± 9V, max ± 10V
RS 485	Signal outputs (Tx,D,RTS)	Output resistance: < 300Ω
		Short circuit current: Type ± 10mA
		± 5V
	Maximum input voltage	> 12 kΩ
	Input resistance	± 60 mA Max
	Output current	Vd > 0.2V
	High level	Vd < -0.2V
	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

