

LPC series

Programmable
DC Power Supplies
850/1500/1700 Watts

The LPC series programmable DC power supplies provide stable, variable output voltage and current for a broad range of development and system requirements.

Design features include:

- Universal AC input
- High power density, with up to 850 Watts from a half rack 1U chassis
- Scalable Analogue Programming
- RS232, RS485, USB 2.0, together with Isolated & non-isolated Analogue programming facilities (with optional Ethernet & GPIB)
- Auxiliary 5V / 15V outputs
- Output voltages up to 600Vdc



GLASSMAN
europe 

www.glassman europe.co.uk

Introduction

The **Glassman Europe** LPC 850, 1500 and 1700 Watt series of well regulated, programmable dc power supplies, offer industry leading design features including unrivalled power density, Auto Start mode, (for automatic recovery from power outage or following a PC failure or reboot) sleep mode, (1700W only) to save power in the event of the unit having been left idle, and programmable fold-back protection, for control flexibility or indeed for particularly sensitive loads. All of these features combine for reliable and effective operation within a broad range of applications, including: Automotive Electronics, Avionics, ATE systems, battery charging, Material Sciences, vacuum processing applications and many more.



LPC Series General Specifications

AC Input Specifications		
Operational AC Input Voltage / Frequency	85-265 Vac continuous, 47-63 Hz, single phase	
Input Current (at 100 / 200 VAC)	11.5/6 A (850W), 23/12 A (1500W/1700W)	
Inrush Current (100 / 200 VAC)	Less than: 25 A (850W), 50 A (1500W/1700W)	
Power Factor	0.99@100 / 200 Vac, rated output power	
Output Performance Specifications		
Temperature Coefficient	100 PPM/°C from rated output voltage, after a 30 minute warm-up	
Drift (8 hours)	0.05% of rated output voltage & current over an 8 hour interval with constant line, load & temperature, after 30 minute warm-up	
Hold-up Time	Typical 20 ms at any rated input line	
Transient Response Time ¹	Less than 1 ms for 6 V to 60 V models. Less than 2 ms for 80 V to 600 V models	
Meter Accuracy	0.5% ± 1 count	
Environmental Specifications (Indoor use)		
Operating Temperature Range	0°C to 50°C, 100% load (32°F to 122°F)	
Storage Temperature Range	-20°C to 70°C (-4°F to 158°F)	
Operating Humidity Range	30-90% RH (no condensation)	
Storage Humidity Range	10-95% RH (no condensation)	
Operating Altitude	Up to 2,000 m (6,500 feet)	
Protection		
Foldback Mode	Output will disable when a transition is made from CV to CC mode or from CC to CV mode	
Foldback Mode Delay	Programmable time delay of 0.5s to 50s over which the mode transition must remain to trigger the Fold Mode to activate	
Under Voltage Protection (UVP)	Adjustable from 0 V to Vset - 5%	
Over-Temperature Protection Lock (OTP)	Disables the output in the event of an over temperature alarm. Can be set to auto recover or to latch off	
Local Lockout	Allows the front panel controls to be locked out	
External Shutdown	Allows the user to shutdown the output through a TTL or CMOS logic signal	
Interlock	Enables or disables the output via dry contact type switch	
Remote Programming		
	Scalable Analogue & Scalable Isolated Analogue	Digital
Voltage and Current Programming Resolution		0.012% of full scale
Voltage and Current Readback Resolution		0.012% of full scale
Parallel Operation	Up to 4 units in master / slave mode	
Series Operation	Up to 2 units (with external diodes)	
Constant Voltage (CV)/Constant Current (CC) Indicator	CV: TTL High (4-5 V) CC: TTL Low (0-0.6 V)	
Output Voltage and Current Programming	0-100%, 2 V up to 10 V programmable (or up to 10kΩ resistive)	
Output Voltage and Current Monitor	0-100%, 2 V up to 10 V, programmable (or up to 10kΩ resistive)	
On / Off Control	TTL level ²	
AUX On / Off Control	TTL level or dry contact	
Power Supply Status Signal	TTL high: ok ² TTL low: fail ²	
Mechanical Specifications		
LPC 850 Watt (WxHxD)	8.4 x 1.7 x 19.0 inch (214 x 43.6 x 483 mm)	
LPC 1500 / 1700 Watt (WxHxD)	16.8 x 1.7 x 19.0 inch (429 x 43.6 x 483 mm without rack mount ears)	
Weight	LPC 850 Watt: 11lb (5kg) LPC 1500 / 1700 Watt: 22lb (10kg) LPC 1700 Watt: 22lb (10kg)	
Regulatory Approvals		
Safety	CSA 22.2 No. 61010-1 and UL61010-1. Marked with CSAus, CE EN61010-1	
EMC	Complies with EN55022, Class B, FCC Part 15B for conducted emissions Complies with EN55022, Class A, FCC Part 15A for radiated emissions Complies with EN61000-4 series of standards for immunity	
Warranty	3 years	

1. Time for the output voltage to recover within 0.5% at its rated output for a load change 10-90% of rated output current. Output set point 10-100%

2. Isolated Analogue Programming only

LPC 850 Watt Series Electrical Specifications - 6 V to 600 V Models

Models	6-110	8-100	12-70	20-42	33-25	40-21	60-14	80-10.5	100-8.5	150-5.6	300-2.8	600-1.4
Output Ratings												
Output Voltage ¹	6 V	8 V	12 V	20 V	33 V	40 V	60 V	80 V	100 V	150 V	300 V	600 V
Output Current ²	110 A	100 A	70 A	42 A	25 A	21 A	14 A	10.5 A	8.5 A	5.6 A	2.8 A	1.4 A
Output Power ³	670 W	810 W	850 W	850 W	835 W	850 W	850 W	850 W	860 W	850 W	850 W	850 W
Line Regulation												
Voltage (0.005% of rated output voltage +2 mV) ⁴	2.3 mV	2.4 mV	2.6 mV	3.0 mV	3.7 mV	4 mV	5 mV	6 mV	7 mV	9.5 mV	17 mV	32 mV
Current (0.01% of rated output current +2 mA) ⁵	13 mA	12 mA	9 mA	6.2 mA	4.5 mA	4.1 mA	3.4 mA	3.1 mA	2.9 mA	2.6 mA	2.3 mA	2.1 mA
Load Regulation												
Voltage (0.005% of rated output voltage +2 mV) ⁶	2.3 mV	2.4 mV	2.6 mV	3.0 mV	3.7 mV	4 mV	5 mV	6 mV	7 mV	9.5 mV	17 mV	32 mV
Current (0.02% of rated output current +5 mA) ⁷	27 mA	25 mA	19 mA	13.4 mA	10 mA	9.2 mA	7.8 mA	7.1 mA	6.7 mA	6.1 mA	5.6 mA	5.3 mA
Output Noise (rms, 300 kHz)												
Voltage	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	10 mV	25 mV	50 mV
Current ⁸	200 mA	180 mA	120 mA	75 mA	60 mA	45 mA	35 mA	25 mA	20 mA	16 mA	10 mA	6 mA
Output Ripple (p-p, 20 MHz)												
Voltage	50 mV	50 mV	50 mV	50 mV	50 mV	50 mV	50 mV	80 mV	80 mV	100 mV	150 mV	250 mV
Maximum Recommended Remote Sense Line Drop Compensation per Line ⁹	1 V	1 V	1 V	1.5 V	2 V	2 V	3 V	5 V	5 V	5 V	5 V	5 V
Up-prog. Response Time, 0-Vmax ¹⁰	60 ms	60 ms	60 ms	60 ms	60 ms	60 ms	60 ms	100 ms	100 ms	100 ms	150 ms	250 ms
Down-prog. Response Time: Full Load	50 ms	50 ms	50 ms	50 ms	50 ms	50 ms	50 ms	80 ms	100 ms	150 ms	150 ms	250 ms
Down-prog. Response Time: No Load	300 ms	400 ms	500 ms	600 ms	700 ms	800 ms	900 ms	1000 ms	1200 ms	1800 ms	2200 ms	3500 ms
Over-Voltage Trip Point	0.5-7.5 V	0.5-10 V	1-15 V	1-24 V	2-39 V	2-44 V	3-66 V	3-95 V	3-125 V	3-180 V	5-330 V	5-660 V
Efficiency ¹¹	75/77%	77/80%	81/84%	82/85%	83/86%	83/87%	83/87%	83/87%	83/87%	83/87%	83/87%	83/87%

LPC 1500 Watt Series Electrical Specifications - 6 V to 600 V Models

Models	8-187.5	12.5-120	20-76	30-50	40-38	60-25	80-19	100-15	150-10	300-5	600-2.6
Output Ratings											
Output Voltage ¹	8 V	12.5 V	20 V	30 V	40 V	60 V	80 V	100 V	150 V	300 V	600 V
Output Current ²	187.5 A	120 A	76 A	50 A	38 A	25 A	19 A	15 A	10 A	5 A	2.6 A
Output Power ³	1500 W	1500 W	1520 W	1500 W	1520 W	1500 W	1520 W	1500 W	1500 W	1500 W	1560 W
Line Regulation											
Voltage (0.005% of rated output voltage +2 mV) ⁴	2.4 mV	2.62 mV	3.0 mV	3.5 mV	4 mV	5 mV	6 mV	7 mV	9.5 mV	17 mV	32 mV
Current (0.01% of rated output current +2 mA) ⁵	20.7 mA	14 mA	9.6 mA	7 mA	5.8 mA	4.5 mA	3.9 mA	3.5 mA	3.0 mA	2.5 mA	2.26 mA
Load Regulation											
Voltage (0.005% of rated output voltage +2 mV) ⁶	2.4 mV	2.62 mV	3.0 mV	3.5 mV	4 mV	5 mV	6 mV	7 mV	9.5 mV	17 mV	32 mV
Current (0.02% of rated output current +5 mA) ⁷	42.5 mA	29 mA	20.2 mA	15 mA	12.6 mA	10 mA	8.8 mA	8 mA	7 mA	6 mA	5.5 mA
Output Noise (rms, 300 kHz)											
Voltage	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	10 mV	25 mV	50 mV
Current ⁸	319 mA	206 mA	136 mA	120 mA	81 mA	63 mA	45 mA	35 mA	29 mA	18 mA	11 mA
Output Ripple (p-p, 20 MHz)											
Voltage	50 mV	50 mV	50 mV	50 mV	50 mV	50 mV	80 mV	80 mV	100 mV	150 mV	250 mV
Maximum Recommended Remote Sense Line Drop Compensation per Line ⁹	1 V	1 V	1.5 V	2 V	2 V	3 V	5 V	5 V	5 V	5 V	5 V
Up-prog. Response Time, 0-Vmax ¹⁰	60 ms	60 ms	60 ms	60 ms	60 ms	60 ms	100 ms	100 ms	100 ms	150 ms	250 ms
Down-prog. Response Time: Full Load	50 ms	50 ms	50 ms	50 ms	50 ms	50 ms	80 ms	100 ms	150 ms	150 ms	250 ms
Down-prog. Response Time: No Load	400 ms	500 ms	600 ms	700 ms	800 ms	900 ms	1000 ms	1200 ms	1800 ms	2200 ms	3500 ms
Over-Voltage Trip Point	0.5-10 V	1-15 V	1-24 V	2-36 V	2-44 V	5-66 V	5-88 V	5-110V	5-165 V	5-330 V	5-660 V
Efficiency ¹¹	77/79%	81/84%	82/85%	83/86%	84/88%	84/88%	84/88%	84/88%	84/88%	84/88%	84/88%

LPC 1700 Watt Series Electrical Specifications - 6 V to 600 V Models

Models	6-220	8-200	12-140	20-84	33-50	40-42	60-28	80-21	100-17	150-11.2	300-5.6	600-2.8
Output Ratings												
Output Voltage ¹	6 V	8 V	12 V	20 V	33 V	40 V	60 V	80 V	100 V	150 V	300 V	600 V
Output Current ²	220 A	200 A	140 A	84 A	50 A	42 A	28 A	21 A	17 A	11.2 A	5.6 A	2.8 A
Output Power ³	1330 W	1610 W	1690 W	1690 W	1660 W	1690 W	1690 W	1690 W	1710 W	1690 W	1690 W	1690 W
Line Regulation												
Voltage (0.005% of rated output voltage +2 mV) ⁴	2.3 mV	2.4 mV	2.6 mV	3.0 mV	3.7 mV	4 mV	5 mV	6 mV	7 mV	9.5 mV	17 mV	32 mV
Current (0.01% of rated output current +2 mA) ⁵	13 mA	12 mA	9 mA	6.2 mA	4.5 mA	4.1 mA	3.4 mA	3.1 mA	2.9 mA	2.6 mA	2.3 mA	2.1 mA
Load Regulation												
Voltage (0.005% of rated output voltage +2 mV) ⁶	2.3 mV	2.4 mV	2.6 mV	3.0 mV	3.7 mV	4 mV	5 mV	6 mV	7 mV	9.5 mV	17 mV	32 mV
Current (0.02% of rated output current +5 mA) ⁷	49 mA	45 mA	33 mA	22 mA	15 mA	13 mA	10.6 mA	9.21 mA	8.4 mA	7.2 mA	6.1 mA	5.6 mA
Output Ripple (rms, 300 kHz)												
Voltage	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV	10 mV	25 mV	50 mV
Current ⁸	200 mA	180 mA	120 mA	75 mA	60 mA	45 mA	35 mA	25 mA	20 mA	16 mA	10 mA	6 mA
Output Ripple (p-p, 20 MHz)												
Voltage	50 mV	50 mV	50 mV	50 mV	50 mV	50 mV	50 mV	80 mV	80 mV	100 mV	150 mV	250 mV
Maximum Recommended Remote Sense Line Drop Compensation per Line ⁹	1 V	1 V	1 V	1.5 V	2 V	2 V	3 V	5 V	5 V	5 V	5 V	5 V
Up-prog. Response Time, 0-Vmax ¹⁰	60 ms	60 ms	60 ms	60 ms	60 ms	60 ms	60 ms	100 ms	100 ms	100 ms	150 ms	250 ms
Down-prog. Response Time: Full Load	50 ms	50 ms	50 ms	50 ms	50 ms	50 ms	50 ms	80 ms	100 ms	150 ms	150 ms	250 ms
Down-prog. Response Time: No Load	300 ms	400 ms	500 ms	600 ms	700 ms	800 ms	900 ms	1000 ms	1200 ms	1800 ms	2200 ms	3500 ms
Over-Voltage Trip Point	0.5-7.5 V	0.5-10 V	1-15 V	1-24 V	2-39 V	2-44 V	3-66 V	3-95 V	3-125 V	3-180 V	5-330 V	5-660 V
Efficiency ¹¹	76/78%	77/79%	81/84%	82/85%	83/86%	83/87%	84/88%	84/88%	84/88%	84/88%	84/88%	84/88%

1. Minimum voltage is guaranteed to maximum 0.2% of the rated output voltage

2. Minimum current is guaranteed to maximum 0.4% of the rated output current

3. Total output power is also based on AUX1 Output Voltage (5 V) and AUX1 Output Current (0.5 A) and AUX2 Output Voltage (15 V) and AUX2 Output Current (0.5 A)

4. From 85-132 Vac or 170-265 Vac, constant load

5. From 85-132 Vac or 170-265 Vac, constant load

6. From no load to full load, constant input voltage

7. For load voltage change, equal to the unit voltage rating, constant input voltage

8. For 6 V models the ripple is measured at 2-6 V output voltage and full output current. For other models, the ripple is measured at 10-100% output voltage and full output current

9. When using remote sense, the total of the load voltage and the load line drops must not exceed the rated output of the power supply. For example, for an LPC 6-110 in an application with 1 V of the load loss

(0.5 V/Line), the maximum available load voltage would be 6-1=5 V. Note: The unit may operate at higher output voltages than this, but there is no guarantee that the power supply will meet performance specifications. Ultimately, the upper limit of the output voltage will be determined by internal circuitry of the power supply (non-adjustable).

10. With rated, resistive load

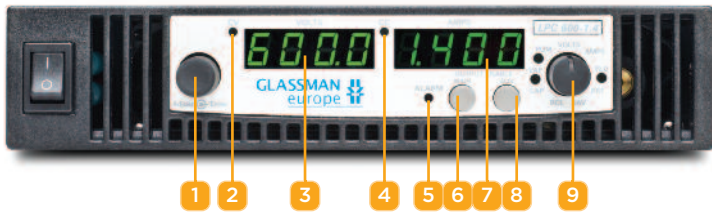
11. At 100/200 Vac input voltage and maximum output powers

Applies to all footnotes.: Programming and Readback: RS-232, RS-485, USB built in, GPIB, Ethernet optional.

Specifications are guaranteed from 1% to 100% of the rated output voltage, current and power

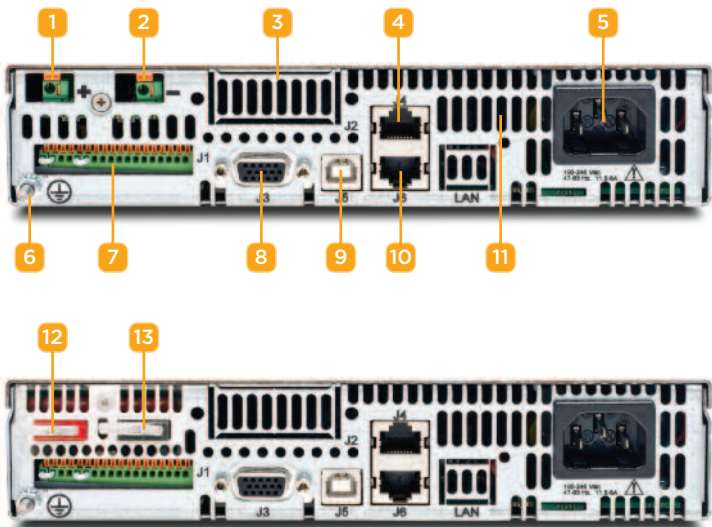
Panel Interface Features

Front Panel Display and Control: 850 / 1500 / 1700 Watt



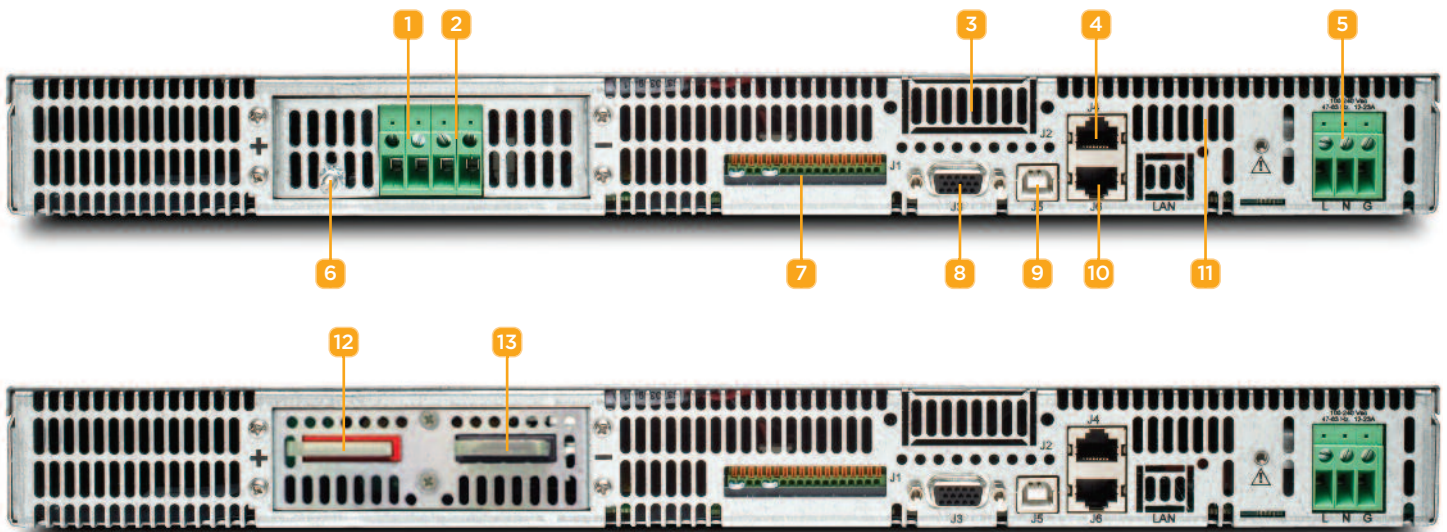
Item	Description
1	Rotary Knob / ENTER button
2	Voltage mode LED (green)
3	Voltage meter
4	Current mode LED (green)
5	Alarm indicator LED (red)
6	Output ON/OFF button
7	Current meter
8	Auxiliary ON/OFF button
9	Rotary selection knob

Rear Panel Connectors: 850 Watt Series



Item	Description
1	DC output connector positive (60-600 V)
2	DC output connector negative (60-600 V)
3	LAN or GPIB connector (optional)
4	RS-232/RS485 Connector in port
5	AC input
6	Chassis ground screw
7	Control connector
8	Auxiliary output & isolated control connector
9	USB connector
10	RS-485 connector out port
11	Fan exhaust vents
12	DC output bus bar positive (6-40 V)
13	DC output bus bar negative (6-40 V)

Rear Panel Connectors: 1500 / 1700 Watt Series



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