

DLTG600

600 W DC POWER SUPPLY



FEATURES

- Designed for long life at full power
- Excellent dynamic response to load changes
- Protected against all overload and short circuit conditions
- EMC surpasses CE requirements: low emission & high immunity
- Low audible noise: fans are temperature controlled
- Available options: High Speed Programming, Interfaces, Extra Isolation, Sequencer, Digital Encoders, Power Sink etc.

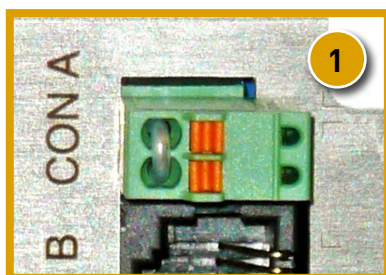
FUNCTIONALITIES

- Master/Slave parallel and series operation with voltage and current sharing
- Stacking is allowed, space between units is not required
- High power system configuration from multiple units
- 19" rack mounting or for laboratory use (feet included)
- Remote sensing
- Interlock

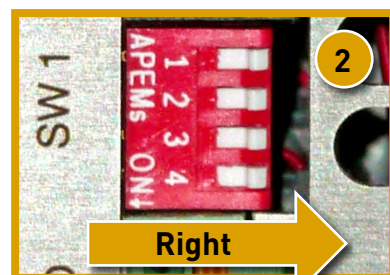
OPERATING INSTRUCTIONS

The DLTG600 is already pre-configured for soft-LED Integrated Dimming Solutions usage.

- After the main power-supply-cord is connected to the grid the following LEDs must be on:
 - Remote CV
 - Remote CC
 - Output ON
- Connect the DMX-Interface to the 15-pin SUB-D Connector (CON E)
The Dimming-Driver will now act in correspondence with the interface.
- If the 3 LEDs mentioned above are not on duty – check the rear side according to the following instructions:



Make sure the 2 inputs of the interlock connector are connected together to turn on the output of the unit.



Make sure all 4 dip-switches are switched to the right position.

		DLTG600
Output voltage current AUTORANGING (2 ranges) max. output current / voltage		0 - 400 V 0 - 4 A yes 4 A / 0-200 V 2 A / 200-400 V
Input AC single phase, 48 - 62 Hz <i>Power Derating vs input:</i> 90 V : P _{out max} (W), I _{in} (A) 100 V : P _{out max} (W), I _{in} (A) 110 V : P _{out max} (W), I _{in} (A) 230 V : P_{out max} (W), I_{in} (A) power factor, 100%, 50%load internal fuses standby input power (V _o =I _o =0) standby input power (V _o =V _{max})		90 - 265 V 750, 10 800, 9.5 800, 8.5 800, 4 0.99, 0.98 12.5 AT 14 W 26 W
		200 V / 400 V
Efficiency AC 230 V input, full load AC 115 V input, max. load		89 % 86 %
Regulation		
Load 0 - 100% CV Line 120 - 265 V AC CV (measured on sense block)		10 mV 2 mV
Load 0 - 100% CC Line 120 - 265 V AC CC (internal voltage sense)		0.5 mA 0.2 mA
Ripple + noise rms (BW=300 kHz) CV p-p (BW=20 MHz) CV rms (BW=300 kHz) CC p-p (BW=20 MHz) CC <i>CC-ripple at full load</i>		15 mV 80 mV 0.8 / 0.5 mA 3 / 1.5 mA
Front panel connection		
Load Regulation: Load 0 - 100% CV Ripple + noise rms (BW=300 kHz) CV p-p (BW=20 MHz) CV		15 mV 18 mV 150 mV
Temp. coeff., per °C CV CC		35.10 ⁻⁶ 60.10 ⁻⁶
Stability after 1 hr warm-up during 8 hrs CV CC t _{amb} = 25 ± 1 °C, V _{in} = 230 V AC (int. voltage sensing for CC-stab.)		6.10 ⁻⁵ 9.10 ⁻⁵

		CV	CC
Analog Programming			
Programming inputs input range accuracy offset temp. coeff. offset input impedance		0 - 5 V ± 0.2% - 0.1 ... +1.3 mV (on 5V) 10 ∝V / °C > 1 MOhm	0 - 5 V ± 0.5% 0 ... +2.2 mV (on 5V) 50 ∝V / °C > 1 MOhm
Monitoring output output range accuracy offset temp. coeff. offset output impedance		0 - 5 V ± 0.2% - 1... 0 mV (on 5V) 3 ∝V / °C 2 Ohm / max. 4 mA	0 - 5 V ± 0.5% - 1.1... 0 mV (on 5V) 60 ∝V / °C 2 Ohm / max. 4 mA
Reference voltage on prog. connector V _{ref} TC		5.114 V ± 15 mV (R _o = 2 Ohm, max. 4 mA) 20 ppm	
+12 V output on prog. Connector V _o I _{max} R _o		12 V ± 0.2 V 0.2 A 3 Ohm	

Relay Outputs ACF DCF	AC - Fail DC - Fail ¹⁾	both NO and NC contact both NO and NC contact	¹⁾ output voltage \pm 5% beyond set point
Status outputs CC - status LIM- status OT - status PSOL - status ACF - status DCF - status	CC - operation CV- or CC-limit Over Temperature Power Sink Overload AC - Fail DC - Fail ²⁾	5 V = logic 1 (R _o = 500 Ohm) 5 V = logic 1 (R _o = 500 Ohm) 5 V = logic 1 (R _o = 500 Ohm) 5 V = logic 1 (R _o = 500 Ohm) 5 V = logic 1 (R _o = 500 Ohm) 5 V = logic 1 (R _o = 500 Ohm)	²⁾ output voltage \pm 5% beyond set point
Remote ShutDown	with + 5V, 1 mA or relay contact		
Interlock	contact at rear panel, see photo of rear panel on page 1-6		
Indicators (front panel)	Voltage meter, Ampere meter, AC-Fail, DC-Fail, Over Temperature, Power Sink Overload, Remote-ShutDown, Remote-CV, Remote-CC, Output On, CV-limit, CC-limit, CV- and CC- mode		
Controls (front panel)	Mains on/off switch, CV-and CC-potmeter, CV- and CC-limit-potmeter, Display-Settings button, Display-Limits button, Remote/Local button, Output On/Off button, Front panel Lock buttons.		

Programming speed <i>Standard Version</i>	
Rise time (10 - 90%) output voltage step time, (100 % load) time, (10 % load)	0 → 200 V 4 ms 2 ms
output voltage step time, (100 % load) time, (10 % load)	0 → 400 V 8 ms 5 ms
Fall time (90 - 10%) output voltage step time, (100 % load) time, (10 % load)	200 → 0 V 4 ms 42 ms
output voltage step time, (100 % load) time, (10 % load)	400 → 0 V 15 ms 155 ms
Programming speed <i>High speed Version</i>	
Rise time (10 - 90%) output voltage step time, (100 % load) time, (10 % load)	0 → 200 V 0.4 ms 0.3 ms
output voltage step time, (100 % load) time, (10 % load)	0 → 400 V 0.82 ms 0.55 ms
Fall time (90 - 10%) output voltage step time, (100 % load) time, (10 % load)	200 → 0 V 0.42 ms 4.6 ms
output voltage step time, (100 % load) time, (10 % load)	400 → 0 V 1.7 ms 20 ms
Ripple @full load (rms/pp)	200 V / 4 A 35 / 200 mV
@full load (rms/pp)	400 V / 2 A 30 / 160 mV
Output capacitance	4 μ F
<i>Notes: All specifications regarding programming speed are typical and measured on a resistive load.</i>	

Recovery time recovery within di/dt of load step output voltage time, @ 50 - 100% load step max. deviation @ 230 V AC input voltage	200 V / 400 V 1 / 0.5 V 0.1 / 0.05 A/ ∞ s 185 / 370 V 100 μ s 2 / 1.5 V
Output impedance CV, 0-1 kHz CV, 1-100 kHz	< 0.18 Ω < 2 Ω
Pulsating load max. tolerable AC component of load current f > 1 kHz f < 1 kHz	0.4 Arms 2 / 4 Apeak

Insulation input / output creepage / clearance	3750 Vrms (1 min.) 8 mm
input / case output / case	2500 Vrms 600 V DC
Safety	EN 60950 / EN 61010
EMC Power Supply Standard	EN 61204-3 , Emission: residential, light industrial environment (CISPR22-Class B) Immunity: industrial environment
Generic Emission Generic Immunity	EN 61000-6-3 , residential, light industrial environment (EN 55022 B) EN 61000-6-2 , industrial environment
Operating Temperature at full load	- 20 to + 50 °C derate output to 75% at 60 °C
Humidity	max. 95% RH, non condensing, up to 40 °C max. 75% RH, non condensing, up to 50 °C
Storage temperature	- 40 to + 85 °C
Thermal protection	Output shuts down in case of insufficient cooling
MTBF	500 000 hrs

Hold-Up time $V_{out} = 100\%$, $P_{out} \leq 840 W$ $V_{out} = 85\%$, $I_{out} = 100\%$ $V_{out} = 100\%$, $I_{out} = 50\%$ @ 230 V AC input	16 ms 20 ms 36 ms (time till DC-fail = 1)
Turn on delay after mains switch on	600 ms @ 230 V AC, 900 ms @ 115 V AC
Inrush current	24 A@115 V AC, 22 A@230 V AC

Series operation max. total voltage Master / Slave operation	600 V yes
Parallel operation max. total current Master / Slave operation	no limit max. 4 units (including master)
Remote sensing max. volt. drop per load lead	2 V
Limits Voltage adjust range Current adjust range	0 - 102% 0 - 102%
Potentiometers & Encoders front panel control with knobs resolution screwdriver adjustment digital encoders	standard 0.03 % Option P001 (at front panel) Option P236
Meters scale voltage scale current accuracy read output read limit setting (d = digit)	3.5 digit 0 - 400 V 0 - 4.00 A 0.5% + 2 d 2% + 2 d

Mounting	Stacking of units allowed, air flow is from rear to the sides.
Input Connector	IEC320/C14, EN 60320/C14
Output Terminals	M5 bolts
Programming connector	15 pole D-connector at rear panel (FEMALE)
Cooling audio noise level airflow	Low noise blower, fan speed adapts to temperature of internal heatsink. ca. 45 dBA at full load, 25 °C ambient temperature, 1 m distance ca. 50 dBA at full load, 50 °C ambient temperature, 1 m distance from rear to sides
Enclosure degree of protection	IP20
Dimensions behind front panel: h x w x d front panel: h x w	86 x 221 x 406 mm (feet removed) 88.1 x 222 mm (1/2 19", 2 U)
Weight	5.4 kg