



DLTG1500

1500 W DC POWER SUPPLY



FEATURES

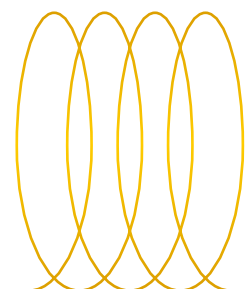
- cTUVus safety approval
- Designed for long life at full power
- Excellent dynamic response to load changes
- Protected against all overload and short circuit conditions
- EMC surpasses CE requirements: low emission & high immunity
- Low audible noise: fans are temperature controlled
- Available options: 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

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		DTLG1500
Output		
voltage		0 - 300 V
current		0 - 5 A
AUTORANGING (2 ranges)		no
max. output current / voltage		-
Input		
AC single phase, 48 - 62 Hz		90 - 265 V
rated voltage range		100 - 240 V
rated frequency		50 / 60 Hz
<i>Power Derating vs input:</i>		
90 V : P _{out max} (W), I _{in} (A)		1200, 16
100 V : P _{out max} (W), I _{in} (A)		1350, 16
110 V : P _{out max} (W), I _{in} (A)		1500, 16
230 V : P_{out max} (W), I_{in} (A)		1500, 7.4
power factor, 100%, 50%load		0.99, 0.98
internal fuses		25 AT
standby input power (V _o =I _o =0)		12 W
standby input power (V _o =V _{max})		22 W
Efficiency		
AC 230 V input, full load		91 %
AC 115 V input, max. load		86 %
Regulation		
Load 0 - 100% CV		10 mV
Line 120 - 265 V AC CV (measured on sense block)		3 mV
Load 0 - 100% CC		0.5 mA
Line 120 - 265 V AC CC (internal voltage sense)		0.1 mA
Ripple + noise		
rms (BW=300 kHz) CV		7 mV
p-p (BW=20 MHz) CV		50 mV
rms (BW=300 kHz) CC		0.5 mA
p-p (BW=20 MHz) CC		4 mA
<i>CC-ripple at full load</i>		
Temp. coeff., per °C	CV	35.10 ⁻⁶
	CC	60.10 ⁻⁶
Stability		
after 1 hr warm-up		
during 8 hrs CV		6.10 ⁻⁵
CC		9.10 ⁻⁵
t _{amb} = 25 ± 1 °C, V _{in} = 230 V AC (int. voltage sensing for CC-stab.)		

Analog Programming	CV	CC
Programming inputs		
input range	0 - 5 V	0 - 5 V
accuracy	± 0.2%	± 0.5%
offset	- 0.1 ... +1.3 mV (on 5V)	0 ... +2.2 mV (on 5V)
temp. coeff. offset	10 μV / °C	50 μV / °C
input impedance	> 1 MOhm	> 1 MOhm
Monitoring output		
output range	0 - 5 V	0 - 5 V
accuracy	± 0.2%	± 0.5%
offset	- 1... 0 mV (on 5V)	- 1.1... 0 mV (on 5V)
temp. coeff. offset	3 μV / °C	60 μV / °C
output impedance	2 Ohm / max. 4 mA	2 Ohm / max. 4 mA

Reference voltage		
on prog. connector	V _{ref} TC	5.114 V ± 15 mV (Ro = 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	AC - Fail	both NO and NC contact
DCF	DC - Fail ¹⁾	both NO and NC contact ¹⁾ output voltage ± 5% beyond set point

Status outputs	CC - operation 5 V = logic 1 (R _o = 500 Ohm)
CC - status	5 V = logic 1 (R _o = 500 Ohm)
LIM- status	Over Temperature 5 V = logic 1 (R _o = 500 Ohm)
OT - status	Power Sink Overload 5 V = logic 1 (R _o = 500 Ohm)
PSOL - status	AC - Fail 5 V = logic 1 (R _o = 500 Ohm)
ACF - status	DC - Fail ²⁾ 5 V = logic 1 (R _o = 500 Ohm) ²⁾ output voltage ± 5% beyond set point
DCF - status	
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 button.

Programming speed <i>Standard Version</i>	
Rise time (10 - 90%) output voltage step time, (100 % load) time, (10 % load)	0 → 300 V 9 ms 3.9 ms
Fall time (90 - 10%) output voltage step time, (100 % load) time, (10 % load)	300 → 0 V 9 ms 90 ms
Programming speed <i>High Speed Version</i>	
Rise time (10 - 90%) output voltage step time, (100 % load) time, (10 % load)	0 → 300 V 1.0 ms 0.51 ms
Fall time (90 - 10%) output voltage step time, (100 % load) time, (10 % load)	300 → 0 V 1.40 ms 13 ms
Ripple @full load (rms/pp)	25/115 mV
Output capacitance	10 µF
<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	1.0 V 0.1 A/µs 280 V 100 µs 1.5 V
Output impedance CV, 0-1 kHz CV, 1-100 kHz	< 125 mΩ < 1 Ω
Pulsating load max. tolerable AC component of load current f > 1 kHz f < 1 kHz	1.2 Arms 5 Apeak

Insulation 1 input / output creepage / clearance	3750 Vrms (1 min.) 8 mm
input / case output / case	2500 Vrms 600 V DC
Safety	cTUVus / 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%, I _{out} = 100% 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	480 ms @ 230 V AC, 700 ms @ 115 V AC
Inrush current	27 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	standard 0.03 %
screwdriver adjustment digital encoders	Option P001 (at front panel) Option P220
Meters scale voltage scale current accuracy read output read limit setting (d = digit)	3.5 digit 0 - 300 V 0 - 5.00 A 0.5% + 2 d 2% + 2 d

Mounting	Stacking of units allowed, air flow is from left to right.
Input Connector	IEC320/C20, EN 60320/C20
Output Terminals	M8 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 left to right
Enclosure degree of protection	IP20
Dimensions behind front panel: h x w x d front panel: h x w	89 x 442 x 365 mm (feet removed) 89 x 483 mm (19", 2 U)
Weight	9.9 kg