

## DLTG150

# 150 W DC POWER SUPPLY



### FEATURES

- Very low output ripple and spikes
- EMC surpasses CE requirements: low emission & high immunity
- High programming speed
- Excellent dynamic response to load changes
- Protected against all overload and short circuit conditions
- Designed for a long life at full power

### FUNCTIONALITIES

- Master/Slave parallel and series operation with voltage and current sharing
- Voltage and current control with 10 turn potentiometers
- 19" rack mounting or for laboratory use (feet included)
- Remote sensing
- Convection cooling

		DLTG150
<b>Output</b> voltage current		0 - 300 V 0 - 450 mA
<b>Input</b> <b>AC</b> single phase, 48 - 62 Hz rated voltage range rated frequency  Input current @ 230 VAC power factor, 110 / 230 VAC full load  <b>DC</b>  internal fuses  standby input power (Vo=Io=0) standby input power (Vo=Vmax)		90 - 265 V 100 - 240 V 50 / 60 Hz  1 A 0.99 / 0.83  contact factory  4 AT  6 W 11 W
<b>Efficiency</b> AC 230 V input, full load AC 110 V input, full load		84 % 81 %
<b>Regulation</b>		
Load 0 - 100% internal sensing optional external sensing	<b>CV</b>	10 mV 10 mV
Line 90 - 265 V AC	<b>CV</b>	3 mV
Load 0 - 100% Line 90 - 265 V AC (internal voltage sensing)	<b>CC</b> <b>CC</b>	0.3 mA 0.05 mA
<b>Ripple + noise</b> (full load) rms (BW=300 kHz) p-p (BW=20 MHz)	<b>CV</b> <b>CV</b>	7 mV 50 mV (typical 30 mV)
rms (BW=300 kHz) p-p (BW=20 MHz)	<b>CC</b> <b>CC</b>	0.03 mA 0.2 mA
<b>Temp. coeff., per °C</b>	<b>CV</b> <b>CC</b>	$5 \cdot 10^{-5}$ $10 \cdot 10^{-5}$
<b>Stability</b> after 1 hr warm-up during 8 hrs  tamb = 25 ± 1 °C, Vin = 230 VAC (internal voltage sensing for CC-stab.)	<b>CV</b> <b>CC</b>	$10 \cdot 10^{-5}$ $12 \cdot 10^{-5}$

Analog Programming	CV	CC
<b>Programming inputs</b> input range accuracy offset temp. coeff. offset input impedance	0 - 5 V ± 0.2% 0 ... + 3 mV (on 5 V) 10 µV / °C 1 MOhm	0 - 5 V ± 0.8% 0 ... + 10 mV (on 5 V) 60 µV / °C 1 MOhm
<b>Monitoring output</b> output range accuracy offset temp. coeff. offset output impedance	0 - 5 V ± 0.2% - 1 ... + 1 mV (on 5 V) 10 µV / °C 2 Ohm / max. 4 mA	0 - 5 V ± 0.8% - 10 ... 0 mV (on 5 V) 60 µV / °C 2 Ohm / max. 4 mA

<b>Reference voltage</b> on prog. connector TC	Vref	5.137 ± 10 mV (Ro = 2 Ohm, max. 4 mA) 50 ppm
<b>+12 V output</b> on prog. Connector	Vo Ro	12 V ± 0.5 V 100 Ohm

<b>Status output</b> CC - status	CC - operation	5 V / 5 mA = logic 1
<b>Remote shutdown</b>	with + 5 V, 1 mA or relay contact	
<b>Indicators</b> (front panel)	CV-mode, CC-mode	
<b>Controls</b> (front panel)	Mains on/off, CV- and CC-potmeter	

<b>Programming speed</b> (resistive load)		
<b>Rise time (10 - 90%)</b> output voltage step time, (100% load) time, (10% load)	0 → 300 V 10 ms 4 ms	
<b>Fall time (90 - 10%)</b> output voltage step time, (100% load) time, (10% load)	300 → 0 V 10 ms 100 ms	

<b>Recovery time</b> recovery within di/dt of load step time, @ 50 - 100% load step max. deviation @ 230 VAC input voltage	200 mV 6 mA/μs 130 μs 700 mV	
<b>Output impedance</b> CV, 0-100 kHz	< 5 Ohm	
<b>Pulsating load</b> max. tolerable AC component of load current f > 1 kHz f < 1 kHz	2 A rms 0.45 A peak	

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

<b>Hold-Up time</b> (230 VAC input) Vout = 100% , Iout = 100% Vout = 85% , Iout = 100% Vout = 100% , Iout = 50%	25 ms 40 ms 60 ms
<b>Turn on delay</b> (230 VAC input) after mains switch on	250 ms
<b>Inrush current</b>	10 A with NTC resistor 30 Ohms cold resistance

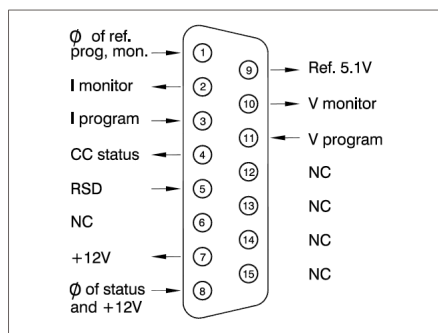
<b>Series operation</b> max. total voltage Master / Slave operation	600 V with optional external Master/Slave Adapter
<b>Parallel operation</b> max. total current Master / Slave operation	no limit max. 4 units
<b>Remote sensing</b> (optional)	option P122
max. voltage drop per load lead	2 V <i>Note: voltage drop across load leads will subtract from max. available output voltage</i>
<b>Over Voltage Limit</b> (fixed)	max. 330 V
<b>Potentiometers</b> front panel control with knobs resolution screwdriver adjustment at front panel	standard 0.03% option P001
<b>Meters</b> scale voltage scale current accuracy V-meter accuracy A-meter	3.5 digit 0 - 300 V 0 - 450 mA 0.5% + 2 digits 1% + 2 digits

<b>Input Connector</b>	Euro-connector at rear panel 10 Amp / 65 °C IEC320/C14, EN60320/C14
<b>Output Terminals</b>	Standard: 4 mm safety sockets at front-panel Option: screw terminals (0.2-4 mm <sup>2</sup> ) at rear-panel (sockets at front removed) only combined with remote sensing, see remote sensing for option numbers (P119 - 122)
<b>Programming connector</b>	15 pole D-connector at rear panel (FEMALE)
<b>Cooling</b>	Convection cooling
<b>Enclosure</b> degree of protection	IP20
<b>Dimensions</b> (h x w x d)	52 x 222 x 202 mm
<b>Weight</b>	1.7 kg

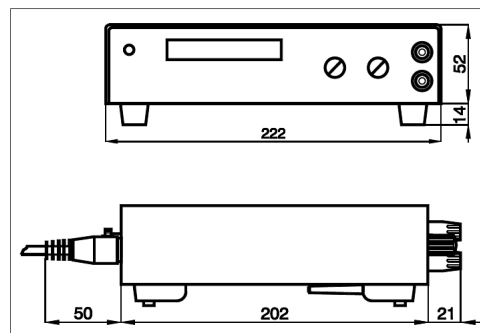
CV= Constant Voltage  
CC= Constant Current

OVL= Over Voltage Limit

Specifications measured at  $t_{amb} = 25 \pm 5^\circ C$  and  
 $V_{in} = 230 VAC, 50 Hz$  unless otherwise noted.



Connections programming connector



Dimensions