

# TDK-Lambda

# ZUP Series

## Zero up programmable power supplies

### Features

- ◆ Constant Voltage / Constant Current
- ◆ Last Setting Memory
- ◆ Digital Meters
- ◆ Built-in RS232 & RS485 Interface w/ GPIB optional
- ◆ Bench or Rack Mount
- ◆ Embedded Microprocessor Controller
- ◆ Voltage up to 120V, Current up to 132A



### Key Market Segments & Applications



Specifications								
Model		ZUP6	ZUP10	ZUP20	ZUP36	ZUP60	ZUP80	ZUP120
Load Regulation	-	2mV + 0.005% over 0 - 100% load change						
Line Regulation	-	1mV + 0.005% over 85 - 132 or 170 - 265VAC line change						
Recovery Time (1)	ms	1ms	0.5ms	0.2ms				
Temperature Coefficient	-	30ppm/°C following 30 minute warm up						
Temperature Drift(2)	-	0.01% + 2mV change in output						
Up programming response time	ms	50 - 60ms					80ms	120ms
Down prog. resp. time (CV)	ms	50ms (70ms ZUP60-14)						
Down prog. resp. time (CV)	ms	250ms	350ms	400ms	500ms	750ms	600ms	800ms
Load Regulation	-	0.01% + 5mA on 200W and 400W models, 0.07% + 10mA on 800W models						
Line Regulation	-	0.01% + 2mA on 200W and 400W models, 0.01% + 5mA on 800W models						
Temperature Coefficient	-	100ppm/°C from rated current after 30 minute warm up time						
Temperature Drift(2)	-	0.02% + 5mA, 200W and 400W models, 0.05% + 10mA 800W models						
Prog Voltage resolution	-	Better than 0.028% of rated voltage						
Prog Voltage accuracy	mV	.02%+5mV	.02%+8mV	.02%+12mV	.02%+20mV	.02%+35mV	.02%+50mV	.02%+70mV
Prog Current resolution	-	Better than 0.03% of rated voltage						
Prog Current accuracy	-	0.4% + 40mA						
Overvoltage Shutdown	V	0 - 7.5	0 - 13	0 - 24	0 - 40	0 - 66	0 - 88	0 - 132
Thermal Protection	-	Over temperature protected						
Display - Voltage	-	3 digits (6, 20, 36, 60, 80V models), 3.5 digits (10, 120V models). Accuracy 0.2% ± 2 digits						
Display - Current	-	3 digits, (3.5 digits 132A model). Accuracy 0.5% ± 3 digits						
Display - Status	-	CV / CC, Alarm, Foldback, Local/Remote, On/Off						
Remote On/Off	-	TTL signal or dry contact relay						
Output Good	-	Open Collector						
Voltage & Current Programming	-	By either Voltage (0-4V) or Resistance (0-4k)						
Remote Sense	-	Up to 0.5V compensation per output cable						
Communication Interface	-	RS232 & RS485 standard, IEEE488 optional						
Series & Parallel Operation	-	Series: Up to two units; Parallel: Up to five units in master-slave configuration						
AC Input Voltage range	VAC	85-265VAC (47-63Hz)						
Inrush Current (100/200VAC)(3)	A	15/30A, 200W models, 15A, 400W models, 30A, 800W models						
Hold Up Time (Typ) at 100VAC	ms	20						
Power Factor Correction	-	Complies with EN61000-3 Class A (0.99 typ)						
Temperature Range	-	Operating: 0 - 50°C; Storage: -20 to +70°C						
Humidity (non condensing)	-	Operating: 30 - 90% RH, Storage 10 - 95%RH						
Cooling	-	Internal fan						
Withstand Voltage	-	Input to Ground 2kVAC, Input to Output 3kVAC, Output to Ground 500VAC for 1 min.						
Isolation Resistance	-	>100M at 25°C & 70%RH						
Vibration & Shock (non-op.)	-	Vibration:10-55Hz(1 min.) 2G constant X, Y, Z, when correctly mounted; Shock: <20G						
Safety Agency Approvals	-	UL3111-1, EN61010-1, CE Mark						
Conducted & Radiated EMI	-	EN55022-B conducted, A radiated, FCC Class B conducted, A radiated, VCCI-2 conducted, -1 radiated						
Warranty	yrs	Three Years						

Notes: (1) Recovery to within +/-50mV after load change of 50-100% (2) Over 8 hour period following 30 minute warm up time  
(3) 25°C ambient (cold start)

Model Selector								
Model	Voltage Adjust Range	Current Adjust Range	Max Power	Ripple 5Hz-1MHz mV	Noise 20MHz BW mV	Ripple 5Hz-1MHz mA	Efficiency % (100/200VAC)	Weight kg
ZUP6-33/U	0-6	0-33	198	5	50	50	69 / 72	2.9
ZUP6-66/U	0-6	0-66	396	5	50	100	74 / 77	3.2
ZUP6-132/U	0-6	0-132	792	8	100	200	74 / 77	5.8
ZUP10-20/U	0-10	0-20	200	5	50	25	73 / 77	2.9
ZUP10-40/U	0-10	0-40	400	5	50	50	79 / 82	3.2
ZUP10-80/U	0-10	0-80	800	8	90	100	77 / 81	5.8
ZUP20-10/U	0-20	0-10	200	5	50	15	74 / 78	2.9
ZUP20-20/U	0-20	0-20	400	5	50	30	79 / 83	3.2
ZUP20-40/U	0-20	0-40	800	5	80	60	79 / 82	5.8
ZUP36-6/U	0-36	0-6	216	5	50	7.5	76 / 80	2.9
ZUP36-12/U	0-36	0-12	432	5	50	15	80 / 84	3.2
ZUP36-24/U	0-36	0-24	864	5	70	30	80 / 84	5.8
ZUP60-3.5/U	0-60	0-3.5	210	5	50	5	75 / 79	2.9
ZUP60-7/U	0-60	0-7	420	5	50	10	80 / 84	3.2
ZUP60-14/U	0-60	0-14	840	5	60	20	80 / 84	5.8
ZUP80-2.5/U	0-80	0-2.5	200	30	80	5	77 / 82	2.9
ZUP80-5/U	0-80	0-5	400	30	80	10	83 / 87	3.2
ZUP120-1.8/U	0-120	0-1.8	216	30	80	5	77 / 82	2.9
ZUP120-3.6/U	0-120	0-3.6	432	30	80	10	83 / 87	3.2

Options & Accessories		
Option	Model Suffix	Part Number
Front panel terminals (20A max) <sup>5</sup>	/L <sup>4</sup>	ZUP200/400/L <sup>4</sup>
Front panel terminals (20A max) <sup>6</sup>	/L <sup>4</sup>	ZUP800/L <sup>4</sup>
IEC320 cable USA plug	/U	ZUP/U
Serial link cable RJ-45	/W	ZUP/W
GPIO Controller		GP485A*
Dual Unit Assembly (accepts 200W or 400W models)		NL200*
19" 3U rack (accepts up to 6 200/400W models)		NL100*
Blanking panels for NL100 (19 in. rack)		NL101*
RS232 Communications Cable DB-9		ZUP/NC401
RS232 Communications Cable DB-25		ZUP/NC403
RS485 Communications Cable DB-9		ZUP/NC402
RS485 Communications Cable DB-25		ZUP/NC404
User Manual		NL102

\* (See website for more details)  
<sup>4</sup> Not available with ZUP80 or ZUP120 models.  
<sup>5</sup> 200W and 400W models  
<sup>6</sup> 800W models



For Additional Information, please visit [www.tdk-lambda.com/lp/products/zup.htm](http://www.tdk-lambda.com/lp/products/zup.htm)

