



100W Configurable ac-dc power supply.

Features	Benefits
• High Efficiency	Minimises heat in system
• Low Profile	Fits 1U Applications
• Single output connector	Simple and error free connection
• 4 outputs	Eliminates additional power supplies
• 3 Year Warranty	Low cost of ownership



Input			
Input Voltage	90-264Vac	Input Frequency	45 - 63Hz (440Hz with reduced PFC - consult factory)
Input Harmonics	EN61000-3-2 compliant	Power Factor	0.97 typical
Input Fuse	Time delay (not user accessible)	Inrush Current	<40A at 25°C and 264Vac (cold start)
Earth Leakage Current	123µA at 120Vac (60Hz), 257µA max at 240Vac (60Hz)		

Isolation			
Input to Output	4.3kVdc		
Input to Earth	1.5kVac, 2.3kVdc	Output to Earth	200Vdc

QUICK SELECTOR - example configurations					Additional variants available, see "How to Create a Product Description"
Model	Ch1	Ch2	Ch3	Ch4	
NVA1-453TT	5V / 10A	3.3V / 8A	12V / 3A	-12V / 1A	
NVA1-453FF	5V / 10A	3.3V / 8A	15V / 3A	-15V / 1A	
NVA1-4G5TT	24V / 4A	5V / 5A	12V / 3A	-12V / 1A	
NVA1-4G5FF	24V / 4A	5V / 5A	15V / 3A	-15V / 1A	

How To Create A Product Description

Confirm availability of created product with TDK-Lambda

Number of outputs

Letter / number from 'Available Ch1 - Ch4 Outputs' table to represent output voltage

NVA1-

#o/p

Ch1

Ch2

Ch3

Ch4₁

Case Option

Blank no case
-C U chassis + cover
-U U chassis

1. For positive output channel 4, follow chosen letter by 'P'. For example, TP channel 4 = +12V / 1A.

Available Outputs

Other output options are available, please contact factory with your requirements

Channel 1	Adjustment Range	Channel 2	Adjustment Range	Channel 3	Adjustment Range	Channel 4 ₂	Adjustment Range
5 5V / 10A ₁	4.75 - 5.25V	3 3.3V / 8A	3.14 - 3.46V	T 12V / 3A F 15V / 3A G 24V / 1.5A	Fixed Fixed Fixed	T -12V / 1A ₃ F -15V / 1A ₃	Fixed Fixed
G 24V / 4A	23 - 25V	5 5V / 5A	3.3 - 5.5V	T 12V / 3A F 15V / 3A	Fixed Fixed	T -12V / 1A F -15V / 1A	Fixed Fixed

1. Total power of 5V ch1 + 3.3V ch2 must not exceed 60W 2. Follow characters in red by 'P' for positive output channel 4. 3. If channel 3 = 24V (G), channel 4 must be 'P'

Output Specification

Turn on time	1.5s max	at 90Vac and 100% rated output power
Efficiency	up to 90%	configuration dependent
Hold up	16ms min	at 90Vac
Ripple and Noise	<1%	(or 50mV if higher) pk-pk, using EIAJ test method & 20MHz bandwidth 1.5% on channel 4 for 5V channel 1 configs.
Voltage Accuracy	±1%	±5% for Channels 3 & 4 (with Ch1 set to nominal voltage)
Remote Sense	Yes	Channels 1 & 2. Max 0.5V total line drop
Minimum Load	No	on any output. (For models with 12V or 15V ch3, a load ≥1A is required on ch3 to keep it in full regulation when Ch1 + Ch2 power ≥50W)
Total Regulation	1%	Including Line (for 90-264Vac input change), Load (for 0-100% load change) and Cross (for 0-100% load change on any other output) regulation. (5% for channels 3 & 4)
Transient Response	<4%	of set voltage for 50% load change (in 50µs within the range 25-100% load)
Recovery	500µs	for recovery to 1% of set voltage
Over Voltage Protection	Yes	See Application Notes for details
Short Circuit Protection	Yes	
Over Temperature Protection	Yes	
Total Output Power	100W	
Ch1 Good Signal	Optional	Contact factory for details

Environment

Temperature	0°C to 50°C operational, -40°C to 85°C storage (max 12 months). Full load, with 2m/s air blown from input to output (approximately 10CFM)	
Convection Rating	50W at 50°C. Max 50% output current on any output. See Application Notes for details	
Derating	50°C to 70°C derate each output by 2.5% per °C	
Low Temp Startup	-20°C	
Humidity	5 - 95% RH non condensing	
Shock	±3 x 30g shocks in each plane, total 18 shocks 30g shock = 11ms (+/-0.5msec), half sine Conforms to EN60068-2-27, EN60068-2-47, IEC68-2-27, IEC68-2-47, JIS C0041-1987. Conforms to MIL-STD-810E/F, Method 516.5, Pro I, IV, VI	
Vibration	Single axis 10 - 500 Hz at 2g (sweep and endurance at resonance) in all 3 planes Conforms to EN60068-2-6, IEC68-2-6 Conforms to MIL-STD-810E, Method 514.4, Pro I, Cat 1,9	
Altitude	-200 to 3000 metres operational (-200 to 5000m storage/transportation)	
Pollution	Degree 2, Material group IIIb	

Immunity EN61000-6-2:2005, EN60601-1-2:2001

Criteria

Electrostatic Discharge	EN61000-4-2	Level 4	Air discharge 15kV, Contact discharge 8kV. Not applicable to open frame units	A
Electromagnetic Field	EN61000-4-3	Level 3	12V/m	A
Fast / Burst Transient	EN61000-4-4	Level 3	ac input tested to 2.2kV dc output tested to 1.1kV	A
Surge Immunity	EN61000-4-5	Level 3	Common mode - 2.2kV, Differential - 1.1kV	A
Conducted RF Immunity	EN61000-4-6	Level 3	12V	A
Power Frequency Magnetic Field	EN61000-4-8	Level 4	30A/m	A
Voltage Dips, Variations, Interruptions	EN61000-4-11	Class 3	Criteria B for 5 sec interruption	A

Emissions EN61000-6-3:2007, EN60601-1-2:2001

Radiated Electric Field	EN55011, EN55022	(as per CISPR.11/22) Class B, FCC47 part 15 subpart B see application note for details.
Conducted Emissions	EN55011, EN55022	(as per CISPR.11/22) Class B, FCC47 part 15 subpart B
Conducted Harmonics	EN61000-3-2	Class A
Flicker	EN61000-3-3	Compliant - d _{max} only

Safety Approvals

IEC/EN 60950-1, UL60950-1 / CSA 22.2 No 60950-1

CE Mark (EN60950-1)

CB certificate and Report available on request

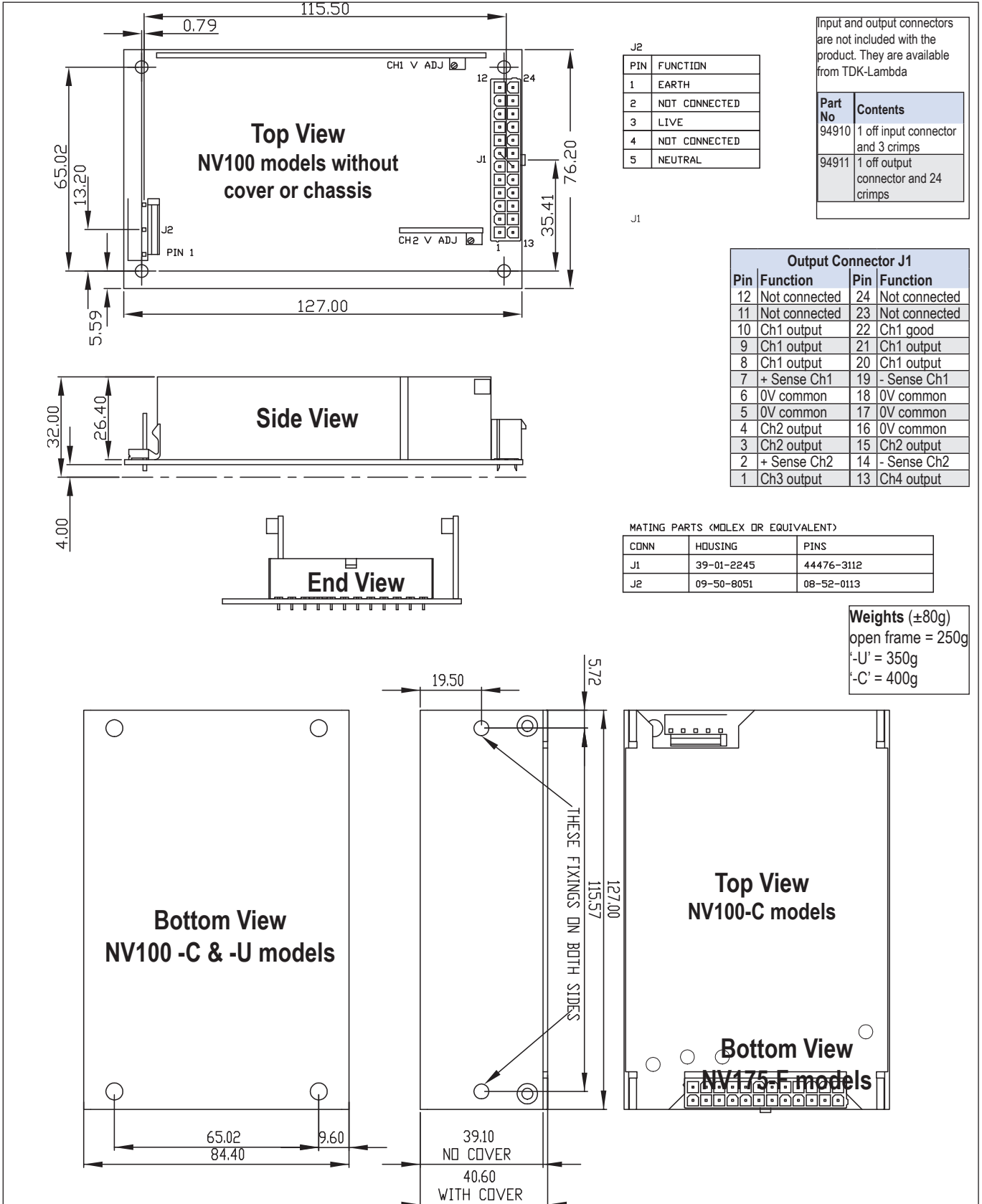
Notes

File E135494

LV Directive 2006/95/EC

Please check with technical sales for status of approvals

Outline & Connection Drawings



TDK-LAMBDA EMEA

www.emea.tdk-lambda.com



TDK-Lambda France SAS

ZAC des Delaches
CS 41077
9 rue Thuillere
91978 Villebon Courtaboeuf
France
Tel: +33 1 60 12 71 65
Fax: +33 1 60 12 71 66
france@fr.tdk-lambda.com
www.fr.tdk-lambda.com



Italy Sales Office

Via dei Lavoratori 128/130
20092 Cinisello Balsamo (MI)
Italy
Tel: +39 02 61 29 38 63
Fax: +39 02 61 29 09 00
info.italia@it.tdk-lambda.com
www.it.tdk-lambda.com



TDK-Lambda Germany GmbH

Karl-Bold-Strasse 40
77855 Achern
Germany
Tel: +49 7841 666 0
Fax: +49 7841 5000
info.germany@de.tdk-lambda.com
www.de.tdk-lambda.com



Austria Sales Office

Aredstrasse 22
2544 Leobersdorf
Austria
Tel: +43 2256 655 84
Fax: +43 2256 645 12
info.germany@de.tdk-lambda.com
www.de.tdk-lambda.com



TDK-Lambda UK Ltd.

Kingsley Avenue
Ilfracombe
Devon EX34 8ES
United Kingdom
Tel: +44 (0) 12 71 85 66 66
Fax: +44 (0) 12 71 86 48 94
powersolutions@uk.tdk-lambda.com
www.uk.tdk-lambda.com



TDK-Lambda Ltd.

Kibbutz
Givat Hashlosha 48800
Israel
Tel: +9 723 902 4333
Fax: +9 723 902 4777
info@tdk-lambda.co.il
www.tdk-lambda.co.il



Russia

Technical Support:
St Petersburg
Tel: +7 (812) 6580463
Sales:
Moscow
Tel: +7 (499) 7557732
info@tdk-lambda.ru
www.tdk-lambda.ru

Local Distribution

