

350W to 1150W Modular Power Supplies

Features

- ◆ 1U Form Factor
- ◆ Up to 90% Efficient
- ◆ Active Power Factor Correction
- ◆ Universal Input (90 - 264VAC)
- ◆ Up to 8 Outputs (6 for the NV350)
- ◆ No Minimum Loads
- ◆ Medical Certifications
- ◆ Peak power rating of up to 1450W

Key Market Segments & Applications



Specifications

Model		NV3	NV7
Output Power	W	350W (660W >180VAC input)	700W (1150W >150VAC input)
Peak Power (Up to 10s)	W	520W (740W >180VAC input)	850W (1450W >150VAC input)
Input Voltage range	VAC	90 - 264VAC (47 - 63Hz, 440Hz with reduced PFC)	
Inrush Current (25°C, Cold Start)	A	<15	<40
Power Factor Harmonics	-	EN61000-3-2 Compliant	
Line Regulation	-	< 0.1% for 90-264VAC input change	
Load Regulation (0-100% change)	-	B, BH Modules: < 1%, DB modules output 2: <2%, DA Modules: <3%	
Cross Regulation	-	< 0.1% for 100% load change on any output, (DA module CH1<0.2%, CH2<3%)	
Ripple & Noise	mV	1% or 50mV, whichever is greater	
Efficiency	-	Up to 90%, configuration dependant	
Minimum Load	A	None	
Overcurrent Protection	-	110 - 150%, hiccup mode (Primary limited)	
Overvoltage Protection	V	Yes	
Overtemperature Protection	-	Yes, recycle AC to reset	
Hold Up Time (Typ at 90VAC Input)	ms	>16ms (12ms for NV700 with >700W output power)	
Leakage Current ⁽¹⁾	µA	130µA 120VAC, 60Hz, 260µA 240VAC 60Hz	
Remote Sense	-	Standard on single output modules and output 1 on DB module only	
Module Good	-	Open collector, on indicates output is good (N/A on DA modules)	
Module Inhibit	-	TTL logic level high inhibits the module (both outputs on DB outputs) ⁽²⁾	
AC Fail (Specify as option)	-	High on fail	
Operating Temperature	-	0 to +70°C. Derate linearly to 50% load from 50°C to 70°C ⁽³⁾	
Storage Temperature	-	-40 to +85°C	
Humidity (non condensing)	-	5 - 95% RH	
Cooling	-	Internal fan or 1m/s with system supplied air (NV3 only)	
Isolation	-	Input to Output 4.3kVAC, 5.7kVDC ⁽⁵⁾⁽⁷⁾ , (2 x MOPPs (3rd edition 60601)), Input to Output 4.3kVDC ⁽⁶⁾ , (2 x MOOPs (3rd edition 60601)), Input to Ground 2.3kVDC, Output to Ground 200VDC ⁽⁸⁾	
Vibration (non operating)	-	2G, 10-500Hz (sweep & endurance at resonance) in all 3 planes	
Shock	-	30G per IEC68-2-27	
Safety Agency Certifications	-	UL/CSA/IEC/EN 60950-1, UL/CSA/IEC/EN 60601-1, ANSI/AAMI ES60601-1; IEC/EN 61010-1; CE Mark	
Immunity	-	EN50082-2: EN61000-4-2, -3, -4, -5, -6, -8, -11	
Conducted Emissions and Flicker	-	EN55011, EN55022 Class B (per CISPR.22), EN61000-3-3	
Radiated Emissions	-	EN55011, EN55022 Class B (per CISPR.22) ⁽⁴⁾	
Weight (Typ)	g	800	1160
Size	in	1.6 x 3.75 x 10.8"	1.6 x 4.92 x 10.8
Warranty	yrs	Three Years	

(1) Worse case: <300µA 264VAC, 63Hz (normal condition, <500µA single fault condition)

(2) Output 2 remote on/off inhibits just Output 2 of DB module

(3) -20°C cold start, derate from 45C for NV7 when input voltage < 100VAC

(4) See application note for Class B

(5) C, CC, CM modules only

(6) Units with any other module or primary option fitted

(7) Type tested to 4kVAC (equivalent to 5.7VDC), production tested to 4.3 kVDC

(8) CM modules are rated 500VAC output to ground.

1. Configuration Guide

You can create your own NV350 or NV700 configuration online at www.nv-power.com. This method checks your configuration and offers the optimum solution. Alternatively, you can do this manually by using the guide below. Calculate total output power to ensure power requirements within 350W or 1150W, then select required Cooling, Connection and Controls/Signals from the following tables:

Output Power	NV3 NV7	350W / 660W 700W / 1150W	250W with reverse air	NV3	S	S	S	EN5V
Cooling	S R C V	Standard air - forward Reverse air ⁴ Customer air - no fan ¹ Variable speed fan (Std on NV700)						
Input Connection	S I	Screw IEC320 ²						
Primary Option ²	ES5V ES12V IS5V IS12V EN5V EN12V IN5V IN12V	AC good, PSU enable, 5V/2A standby AC good, PSU enable, 12V/1A standby AC good, PSU inhibit, 5V/2A standby AC good, PSU inhibit, 12V/1A standby AC good, PSU enable, 5V/2A standby, global module good AC good, PSU enable, 12V/1A standby, global module good AC good, PSU inhibit, 5V/2A standby, global module good AC good, PSU inhibit, 12V/1A standby, global module good						

1 - Thermocoupled sample recommended to ensure adequate cooling - consult sales
2 - Not with customer air cooling

3 - The Primary Option uses 1 slot
4 - Not with NV7

2. Output Section

Select Output Modules from the Module Tables below ensuring that no more that 6 slots (NV-350) or 8 slots (NV-700) in total are used.

Example - if you require 5.2V 40A :-

- Select B as closest match for voltage & current and prefix with voltage eg 5.2B
- Repeat for other outputs.

This will create a complete product description eg **NV3SSSES5V 5.2B 12/15DB** which represents a three output NV350 with

Forward air cooling, Screw input terminals, 300µA Leakage, ac good, PSU enable and 5V/2A aux supply

- Output 1 = 5.2V / 40A
- Output 2 = 12V / 13A with screw terminals
- Output 3 = 15V / 4A with screw terminals
- Max 350W continuous output power

Contact Lambda to validate configuration or visit the NV webpage to validate part number. (www.nv-power.com)

Single Output Modules

Voltage Range	Curr.	Peak Curr.	#/slots	Mod. Code
3.2V - 3.6V	40A	-	2	B
4.75 - 5.5V	40A ⁽¹⁾	-	2	B
7 - 9V	22.5A ⁽⁶⁾	-	2	B
12 - 15.5V	20A ⁽²⁾	-	2	BH
24 - 28V	10A ⁽³⁾	-	2	BH
12 - 13.2V	37.5A ⁽⁷⁾	50A ⁽⁷⁾	3	C
15 - 16.5V	30A ⁽⁷⁾	37.5A ⁽⁷⁾	3	C
24 - 26.4V	18.75A ⁽⁷⁾	25A ⁽⁷⁾	3	C
27 - 32V	16.6A ⁽⁷⁾	19.7A ⁽⁷⁾	3	C
24 - 26.4V	18.75A ⁽⁷⁾	25A ⁽⁷⁾	3	CM
48 - 52.8V	18.75A	25A	6	CC
54 - 64V	16.6A	19.7A	6	CC

- NV3: 5.2-5.5V, derate linearly from 40A to 36A
NV7: 5-5.5V, derate linearly from 40A to 36A
- NV3: 13.2-15.5V, derate linearly from 20A to 16.5A
NV7: 12.5-15.5V, derate linearly from 20A to 15.5A
- NV3: 25.7-28V, derate linearly from 10A to 8.5A
NV7: 24-28V, derate linearly from 10A to 8.5A
- 12.5-15V, derate linearly from 13A to 10A
- 25-28V, derate linearly from 7A to 6A
- 8-9V derate linearly from 22.5A to 20A
- NV3: 400W max (to be confirmed)
NV7: 450W average, 600W peak for 10s
- One DA module per power supply
- For NV3: Limited by total output power

Dual Output Module (Common 0V)(1 Slot)⁽⁸⁾

Output 1	Output 2	Module Code
+12V 3A	-12V 1A	DA

Dual Output Modules (2 Slots each)

Module Code = DB				
Output 1		Output 2		
Voltage Range	Current	Voltage Range	Current	Max Power
3.2 - 3.6V	25A	3.3 - 5.5V	10A	55W
		7 - 15V	5A	60W
		24 - 32V	2A	50W
4.75 - 5.5V	25A	3.3 - 5.5V	10A	55W
		7 - 15V	5A	60W
		24 - 32V	2A	50W
5.5 - 6.5V	25A	3.3 - 5.5V	10A	55W
		7 - 15V	5A	60W
12 - 15V	13A ⁽⁴⁾	24 - 32V	2A	50W
		3.3 - 5.5V	10A	55W
24 - 28V	7A ⁽⁵⁾	7 - 15V	5A	60W
		24 - 32V	2A	50W
		3.3 - 5.5V	10A	55W

For Additional Information, please visit us.tdk-lambda.com/lp/products/nv-series.htm

