

- Reinforced Input to Output Isolation for IEC60601
- Very low Earth Leakage and Class B EMC
- Below 1W standby power
- Medical Approval (Designed for BF applications)
- 5" x 3" footprint
- Standby supply and remote on/off
- High Efficiency & High Power Density (9.3W/in³)
- No minimum load
- Fits 1U applications
- 3 Year Warranty

NV-Power Medical

180 Watts medical power supply for BF applications

Key Market Segments & Applications

Medical	Security
Lifesciences/Laboratory	Network Servers and Routers
Instrumentation	Broadcast
Automation	ATE

Features and Benefits

Features

- Very low Earth Leakage and Class B EMC
- Dual Fusing
- Designed for BF medical applications

Benefits

- Meets medical leakage specs and achieves curve B EMC
- Simplifies system design, reduces cost
- Simplifies system design

INPUT			
Input Voltage	90 - 264Vac (100 - 240Vac nominal)	Input Frequency	45 - 63Hz
Input Harmonics	EN61000-3-2 compliant	Inrush Current	<40A at 25°C and 264Vac, (cold start)
Input Fuse	Dual Fused, Fast acting (not user accessible)	Power Factor	0.97 typical
Earth Leakage Current	80µA max at 120Vac (60Hz), 170µA max at 240Vac (60Hz). Worst case leakage current is less than 200µA at 264Vac, 63Hz (normal condition, =330µA Single Fault Condition)		

HOW TO CREATE A PRODUCT CODE

T = 12V / 15A
G = 24V / 7.5A

-C = U Chassis + Cover
-U = U Chassis

-S1 = 12V / 0.2A standby, Power good, logic level low enables main output.
-S2 = 12V / 0.2A standby, Power good, logic level high enables main output.

(Blank = standard, vertical connector)
-R = Right angled connector (see handbook for 'R' connection and mechanical details)

Product Code Structure: NVM1-1 | Vout | 000 | Global Signal | Case Option | Connector Option

Confirm availability of created product code with the factory

SAFETY APPROVALS

Approval	Date	Amendments
EN 60950-1	2006	
UL 60950-1	2007	
CSA 22.2 No 60950-1	2003	
IEC 60950-1*	2005	
CE Mark	LV Directive 2006/95/EC (EN60950-1)	
IEC 60601-1*	1988	A1, A2
EN 60601-1	1990	A1, A2, A13
UL 60601-1	2003	with revisions 2006

* CB certificate and Report available on request
Check with factory for status of approvals

QUICK SELECTOR

Model	CH1	Standby	Remote On/Off
NVM1-1T000-S1	12V/15A	12V/0.2A	TTL high / OC to inhibit
NVM1-1G000-S1	24V/7.5A		

ISOLATION

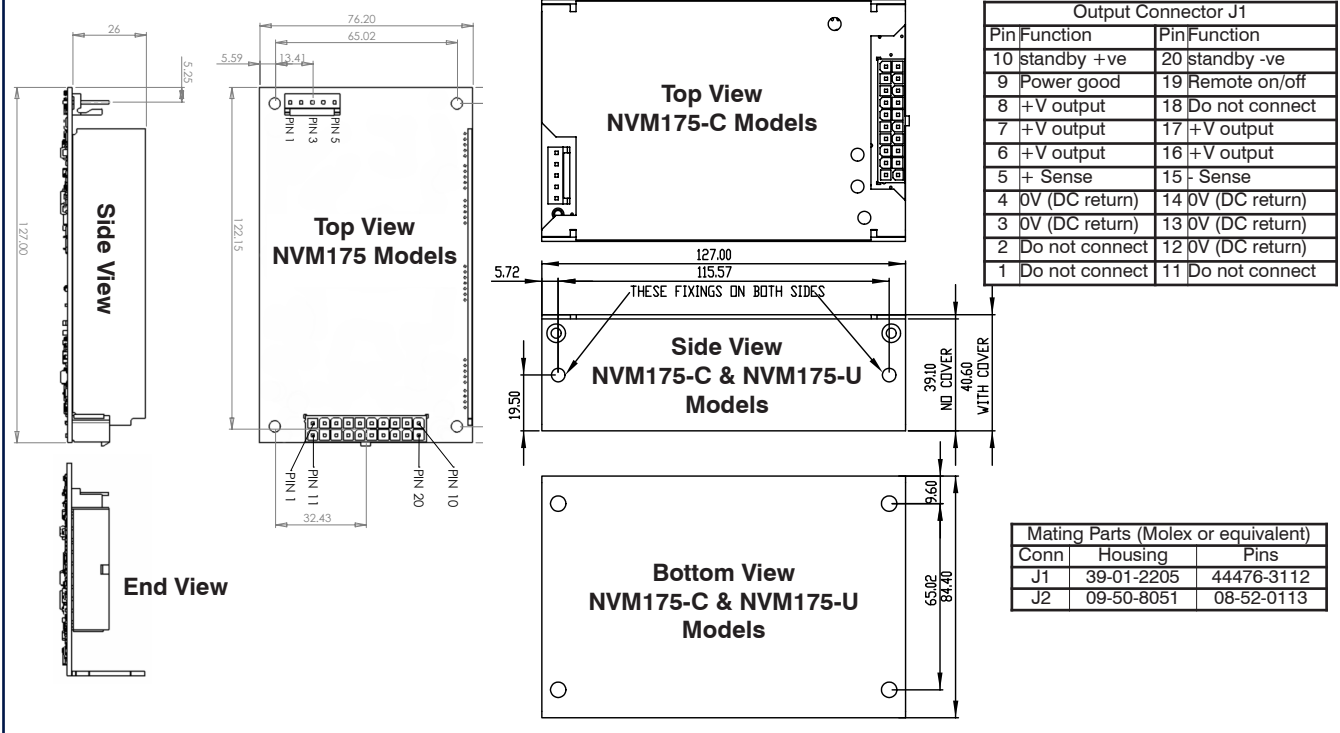
Input to Output	Reinforced	4.5kV (ac) type tested to 4.5kVac (equivalent to 6.3kVdc), production tested to 4.3kV (dc)
Input to Earth	Basic	1.5 kV (ac), 2.3 kV (dc)
Output to Earth		1.5 kV (ac)

IMMUNITY EN61000-6-2:2001				Criteria	EMISSIONS EN61000-6-3:2001, EN60601-1-2:2001		
Electrostatic Discharge	EN61000-4-2	Level 4	Air discharge 15kV Contact discharge 8kV Not applicable to open frame units	A	Radiated Electric Field	EN55011, EN55022	(as per CISPR.11/22) Class B, FCC47 part 15 subpart B (2005) see application note for details
Electromagnetic Field	EN61000-4-3	Level 3	(12V/m)	A	Conducted Emissions	EN55011, EN55022	(as per CISPR.11/22) Class B, FCC47 part 15 subpart B (2005)
Fast / Burst Transient	EN61000-4-4	Level 4	(tested to 4.4kV)	A	Conducted Harmonics	EN61000-3-2	Class A
Surge Immunity	EN61000-4-5	Level 3	Common mode - 2.2kV Differential - 1.1kV	A	Flicker	EN61000-3-3	Compliant - d _{max} only
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			



OUTPUT SPECIFICATION			ENVIRONMENT	
Remote Sense	Yes	Channel 1 - Max 0.5V total line drop.	Temperature	0° to 50°C operational, -40°C to 85°C storage (max 12 months).
Total Regulation	1%	Including Line (for 90-264Vac input change) and Load (for 0-100% load change)	Convection Rating	See Application note for details
Ripple & Noise	1%	(or 50mV if higher) pk-pk, using EIAJ test method & 20MHz bandwidth	Derating	50° to 70°C derate each output by 2.5% per °C with 2.0m/s air blown from input to output.
Voltage Accuracy	±1%		Low Temp Startup	-20°C
Turn on Time	1.5s max	at 90 Vac & 100% rated output power	Humidity	5 - 95% RH non condensing
Efficiency	up to 90%		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
Hold up	16ms min	at 90 Vac		
Min Load	None	on any output		
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	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
Short circuit protection	Yes			
Over Temperature protection	Yes			
Over Voltage Protection	Yes	120-135% of Vout. Remove ac for 10 seconds then reapply to restart unit.	Altitude	5,000metres operational (3,000 metres for IEC/EN/UL60601-1)
Power good signal (J1, pin 12)	Yes	'S1' and 'S2' type global signals. Logic 'High' signal indicates ac supply is good and output 1 is within regulation. Provides minimum 4ms ac fail warning.	Pollution	Degree 2, Material group IIIb

OUTLINE & CONNECTION DRAWINGS



Notes 1. All customer fixings M3 2. Maximum Penetration 4.5mm 3. Maximum torque 0.9Nm 4. All tolerances +/-0.5mm





TDK-LAMBDA EMEA

www.emea-tdk-lambda.com



TDK-Lambda France SAS

ZAC des Delaches
BP 1077-Gometz-le-Chatel
91940 Les Ulis
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



Nemic Lambda Ltd.

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

