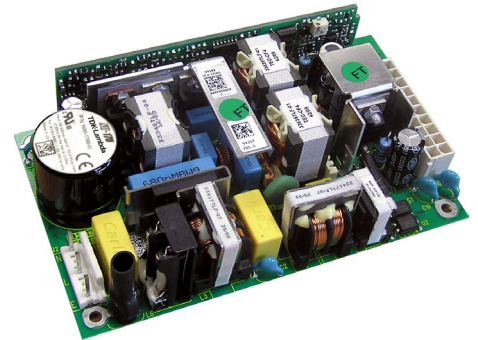
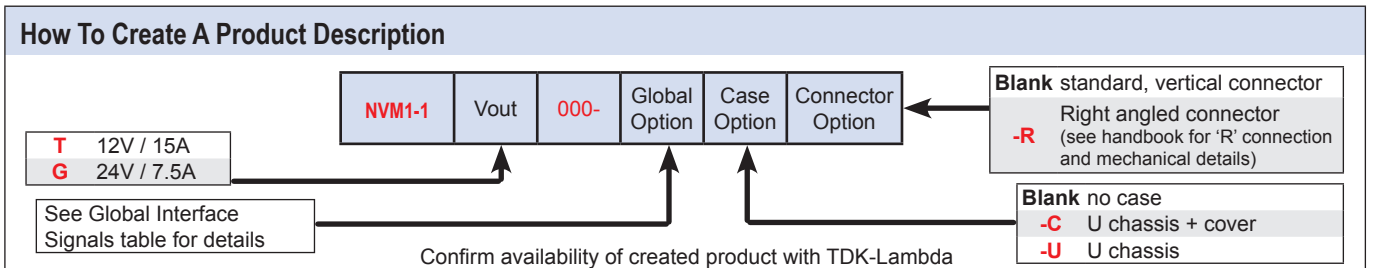


180W Configurable Medical power supply.

Features	Benefits
• High Efficiency	Minimises heat in system
• Low Profile	Fits 1U Applications
• Dual Fusing	Simplifies system design, reduces cost
• 2 x MOPPs isolation	Simplifies system design
• 3 Year Warranty	Low cost of ownership



Input			
Input Voltage	90-264Vac (100 - 240Vac nominal)	Input Frequency	45 - 63Hz
Input Harmonics	EN61000-3-2 compliant	Power Factor	0.97 typical
Input Fuse	Dual fused, Fast acting (not user accessible)	Inrush Current	<40A at 25°C and 230Vac (cold start)
Earth Leakage Current	80µA at 120Vac (60Hz), 170µA max at 240Vac (60Hz) Worst case leakage current is less than 200µA at 264Vac, 63Hz (normal condition, 0.33mA Single Fault Condition)		



QUICK SELECTOR - example configurations

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	12V / 0.2A	TTL high / OC to inhibit

Output Specification

Turn on time	2s max	at 90Vac and 100% rated output power
Efficiency	up to 90%	
Hold up	16ms min	at 90Vac
Ripple and Noise	<1%	(or 50mV if higher) pk-pk, using EIAJ test method & 20MHz bandwidth
Voltage Accuracy	±1%	
Remote Sense	Yes	Channel 1. Max 0.5V total line drop
Minimum Load	No	on any output
Total Regulation	1%	Including Line (for 90-264Vac input change) and Load (for 0-100% load change)
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	120-135% of Vout. Remove ac for 10 seconds then reapply to restart unit
Short Circuit Protection	Yes	
Over Temperature Protection	Yes	
Output Power	180W	

Isolation			
Input to Output	Reinforced	2 x MOPPs (3rd edition 60601) 4.5kVac	type tested to 4.5kVac (equivalent to 6.3kVdc), production tested to 4.3kVdc
Input to Earth	Basic	1.5kVac, 2.3kVdc	
Output to Earth		1.5kVac	

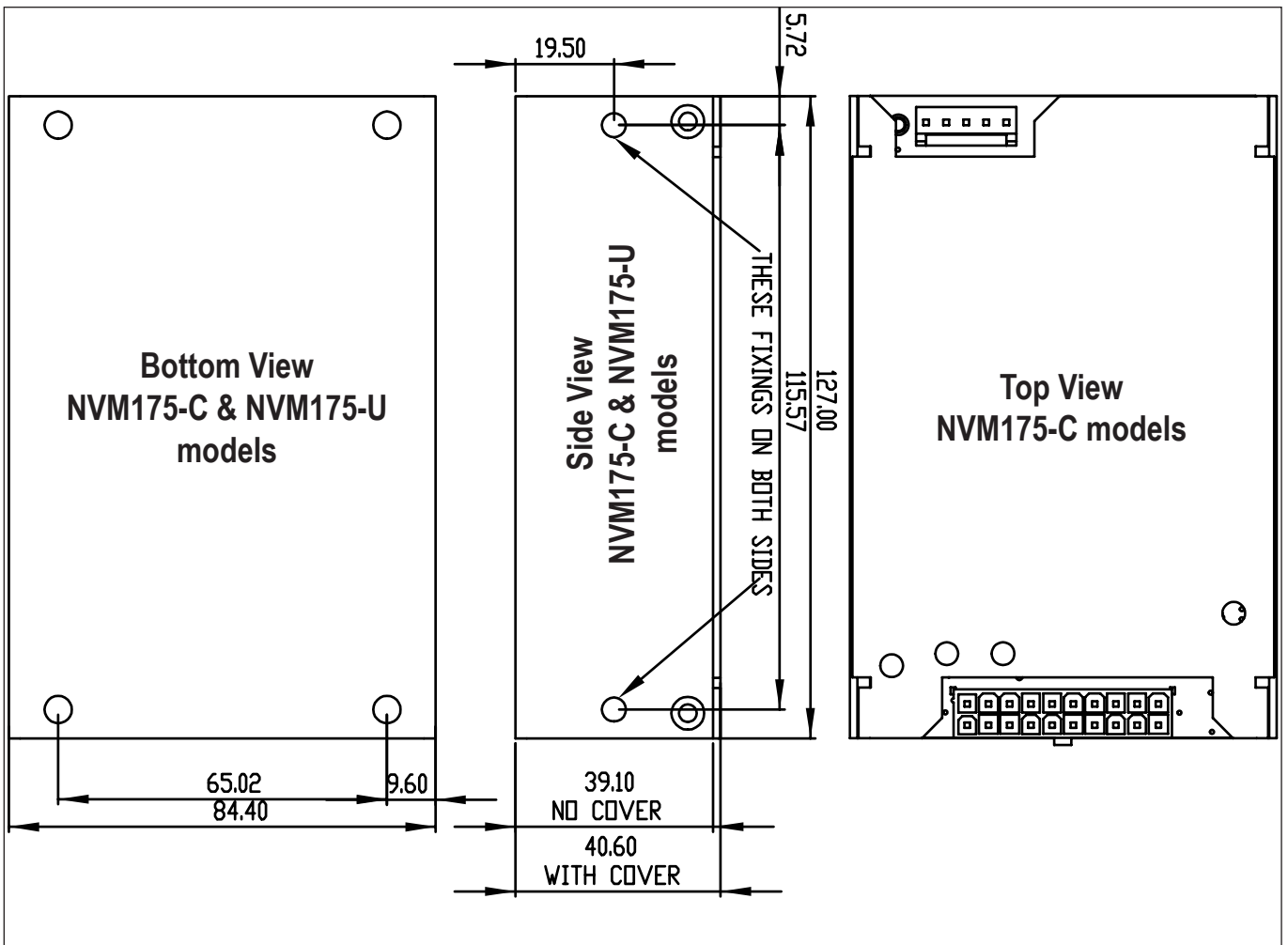
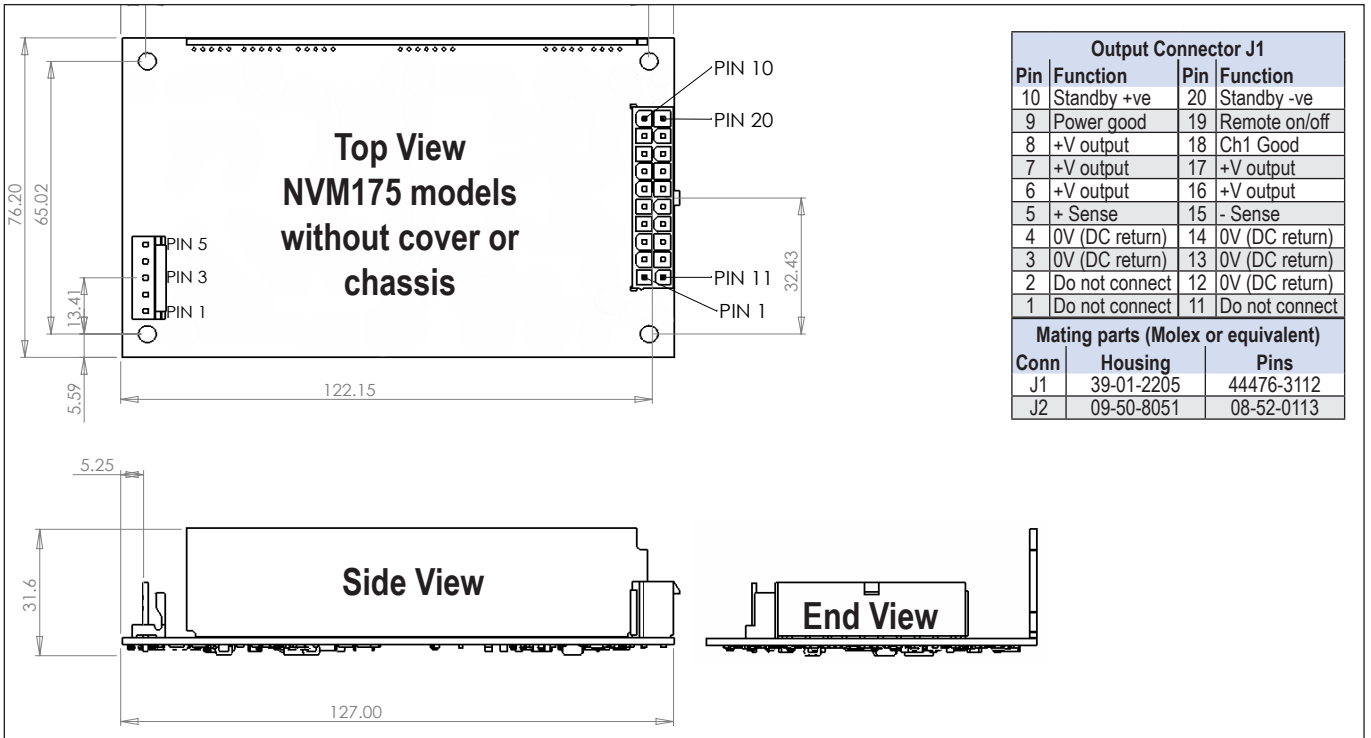
Environment	
Temperature	0°C to 50°C operational, -40°C to 85°C storage (max 12 months). Full load, with 2m/s air blown from input to output (approximately 10CFM)
Derating	50°C to 70°C derate each output by 2.5% per °C with 2m/s air blown from input to output
Low Temp Startup	-20°C
Humidity	5 - 95% RH 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	5000 metres operational (3000 metres for medical approval)
Pollution	Degree 2, Material group IIIb

Global Interface Signals				
	Standby	PSU good signal	Logic level to enable main output	
S	12V / 0.2A	Power good	High	Power good = logic low signal to indicate when ac supply is good and output 1 is within regulation
S1	12V / 0.2A	Power good	Low	
S2	12V / 0.2A	Channel 1 good	High	Channel 1 good = logic low signal to indicate when output 1 is within regulation
S3	12V / 0.2A	Channel 1 good	Low	
S5	5V / 0.5A	Power good	Low	

Approvals / Accreditations	
IEC/EN 60950-1, UL60950-1 / CSA 22.2 No 60950-1	File E135494
IEC/EN 60601-1, UL/CSA 60601-1, ANSI/AAMI ES60601-1 CAN/CSA-C22.2 No 60601-1-08	File E349607
CE Mark (EN60950-1)	LV Directive 2006/95/EC
CB certificate and Report available on request	<i>Please check with technical sales for status of approvals</i>
Designed and manufactured under the control of ISO9001 and ISO13485 (including risk management).	

Immunity EN61000-6-2:2005, EN60601-1-2:2007				Criteria
Electrostatic Discharge	EN61000-4-2	Level 3	Air discharge 8kV, Contact discharge 6kV. Not applicable to open frame units	A
Electromagnetic Field	EN61000-4-3	Level 3	12V/m	A
Fast / Burst Transient	EN61000-4-4	Level 4	ac input tested to 4.4kV dc output tested to 2.2kV	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 and dips to 40% for 5 cycles below 154Vac nominal input	A

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



Notes:

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

Input and output connectors are not included with the product. They are available from TDK-Lambda

1 off input connector and 3 crimps part number is 94910.
1 off output connector and 20 crimps part number is 94668



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



Netherlands

info@tdk-lambda.nl
www.tdk-lambda.nl



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



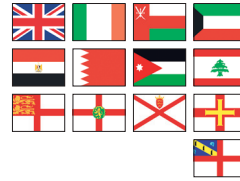
Scandinavia Sales Office

Valdemarsgade 7
4100 Ringsted
Denmark
Tel: +45 24 63 95 65
Fax: +45 69 80 44 99
info@de.tdk-lambda.com
www.emea.tdk-lambda.com



Switzerland Sales Office

Bahnhofstrasse 50
8305 Dietlikon
Switzerland
Tel: +41 44 850 53 53
Fax: +41 44 850 53 50
info@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



C.I.S.

Commercial Support:
Tel: +7 (495) 665 2627
Technical Support:
Tel: +7 (812) 658 0463
info@tdk-lambda.ru
www.tdk-lambda.ru

Local Distribution

