



5"x3"x1.61"

Small

450W

Powerful

600g

Light



The NEVO+600ML modular configurable medical power supply is the smallest in its class and the ultimate solution for demanding medical applications where size, power density, weight and low noise matter. Its tiny footprint of 5" x 3" x 1.61" weighs only 600 grams and delivers an incredible 450 Watts with a minimum of audible noise.

The input module can accommodate up to four isolated output modules which can be configured into a high power 5"x 3" single output power supply or a multiple output power supply with up to 8 isolated outputs.

Standard features include intelligent fan control providing optimised airflow for various load and temperature conditions, wide output voltage adjust, parallel and series connection of modules and an isolated 5V 200mA bias supply. The low noise fan option allows you to use this innovative power supply in even the quietest of environments.

The series is approved to latest medical standards and features market leading specifications and design in application support.

## MAIN FEATURES

- 450 Watts in 3" x 5" x 1.61"
- Low noise operation (~18dBA reduction from M version)
- Intelligent fan control
- Efficiency up to 89%
- Up to 8 isolated outputs
- User and field configurable
- Parallel and series connection of modules
- Wide output voltage adjust range
- Remote current / voltage programming
- Accurate current sharing
- Standard 5V 200mA bias supply
- UL60601 Ed. 3 (Immunity to Ed. 4)
- 3 Year warranty

# SPECIFICATIONS

INPUT ELECTRICAL					
Parameter	Details	Min	Typ	Max	Units
AC input voltage	Nominal range is 100Vrms to 240Vrms	85		264	Vrms
AC input frequency	Contact factory for 400Hz operation.	47	50/60	63	Hz
DC input voltage	Medical	120		300	Vdc
Power rating	See graphs for deratings			450	Watts
Input current	450Watts output at 120Vrms input			5	Amps
Inrush current	265Vrms (cold start)			20	Amps
Fusing	5x20 Fast acting			8	Amps
Input current limit	Maintains power factor		8		Amps
Efficiency	See graphs		86	89	%
Idle power	All outputs fitted and enabled		28		Watts
Idle power	All outputs fitted and Disabled		21		Watts
Power factor	Typical value for 300Watts output at 240Vrms input		0.96	0.99	
Holdup	450Watts output at 120Vrms input	21	24	26	mS
UVLO	Turn on only	78		84	Vrms
Over temperature	Internally monitored. Latching	115		125	°C
Reliability	40°C 80% load			2	FPMH

SIGNALS	Parameter	Details	Min	Typ	Max	Units
	Bias voltage		4.8	5	5.2	V
	Bias current		0		200	mA
	Power good voltage	PNP open collector with internal 10k pull down resistor	8	10	15	V
	Power good current		0		20	mA
	Inhibit voltage		2		15	V
	Inhibit current	10k ohm input impedance	0.2		1.5	mA
	Global inhibit voltage		3		15	V
	Global inhibit current	5k ohm input impedance	0.6		3	mA
	AC_OK voltage		1		4	V
AC_OK current		-10		20	mA	
AC_OK warning	See user manual for exceptions	5			mS	

INSTALLATION			
Parameter	Details	Parameter	Details
Equipment class	I	Flammability rating	94V-2
Installation category	II	IP rating	IP10
Pollution degree	2	ROHS compliance	2011/65/EC
Material group	IIIB (indoor use only)		

RELIABILITY				
Component	Details	Min	Max	Units
Fan	Mag Lev Std		2.7	FPMH
Input	Excluding FAN		2	FPMH
Output	See individual output datasheets		1	FPMH
Warranty			3	Years

SAFETY				
Parameter	Details	Min	Max	Units
Isolation voltage	Input to output		4000	Vac
	Input to chassis		1500	Vac
	Output to chassis		250	Vdc
	Output to output		250	Vdc
Isolation clearance	Primary to secondary (reinforced)	7		mm
	Primary to chassis (basic)	2.5		mm
Isolation creepage	Primary to secondary (reinforced)	12		mm
	Primary to chassis (basic)	4		mm
Leakage current	Medical: 265Vac, 63Hz, 25°C		300	uA

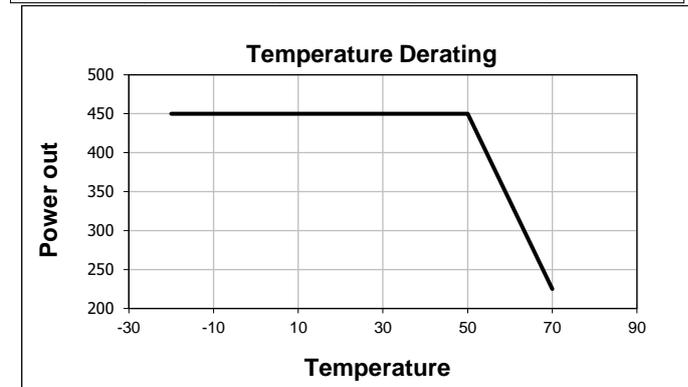
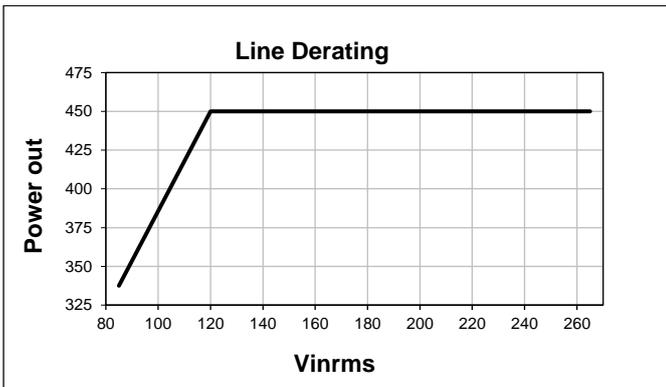
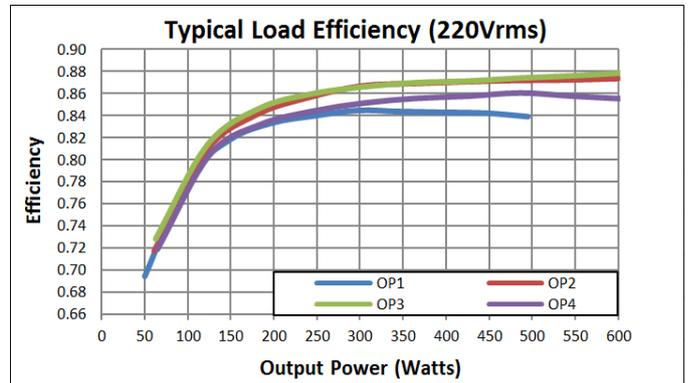
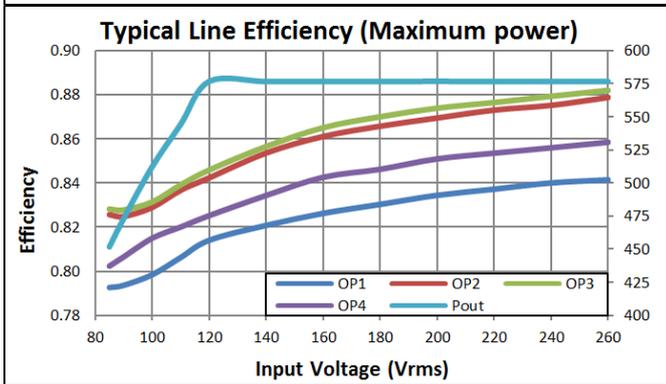
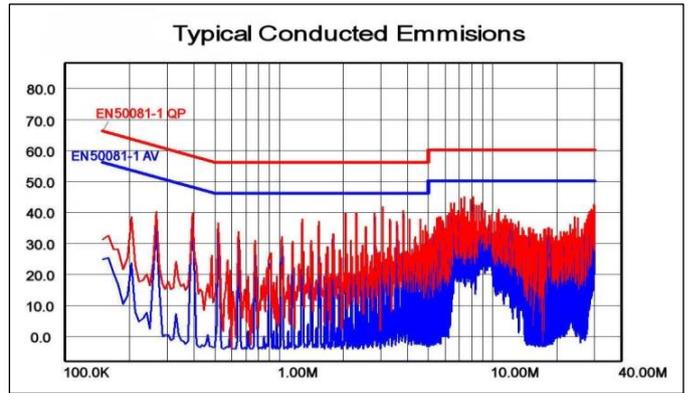
MECHANICAL	
Parameter	Details
Size	77.7mm x 133.7mm x 41.0mm (all external dimensions ± 1.0mm)
Weight	360 gram + 60 gram per output module
Mounting	Bottom or side mounting (see diagram for details)

ENVIRONMENTAL					
	Parameter	Details	Min	Max	Units
Storage	Temperature		-40	+85	°C
	Humidity	Relative, non-condensing	5	95	%
	Altitude		-200	5000	m
	Air Pressure		54	106	kPa
Operation	Temperature	Full power	-20	50	°C
	Temperature	Derate input and outputs at 2.5%/°C	50	70	°C
	Humidity	Relative, non-condensing	5	95	%
	Altitude	(-200 to 2000m for UL60601-1)	-200	3000	m
	Air Pressure		78	106	kPa
	Noise level	Variable. Measured 1m from fan intake	18	42	dBa
Shock	3000 bumps at 10G (16ms) half sine wave				
Vibration	1.5G 10 to 200Hz sine wave, 20G for 15min in 3 axes random vibration				

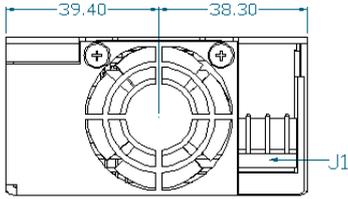
EMC			
	Parameter	Standard	Level
Emissions	Radiated electric field	EN55011, EN55022, FCC	B
	Conducted emissions	EN55011, EN55022, FCC	B
	Harmonic distortion	EN61000-3-2	Compliant
	Flicker & fluctuation	EN61000-3-3	Compliant
Immunity	Electrostatic discharge	EN61000-4-2 (15kV air, 8kV contact)	4
	Radiated RFI	EN61000-4-3 (10V/m)	3
	Fast transient burst	EN61000-4-4 (2kV)	3
	Input line surges	EN61000-4-5 (1kV L-N, 2kV L-E)	3
	Conducted RFI	EN61000-4-6 (10V)	4
	Power freq. magnetic field	EN61000-4-8 (10A/m)	3
	Voltage dips	EN61000-4-11 (EN55024)	Compliant

AGENCY APPROVALS		
Standard	Details	File
UL60601-1	UL60601-1: 2006	UL: E316486
IEC/EN60601-1	IEC 60601-1: 1998 + A1: 1991 + A2: 1995	
CAN/CSA-C22.2 No. 60601-1	CAN/CSA-C22.2 No. 60601-1 (2008)	
ANSI/AAMI ES60601-1	ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10)	
CE MARK	LVD 2014/35/EU	

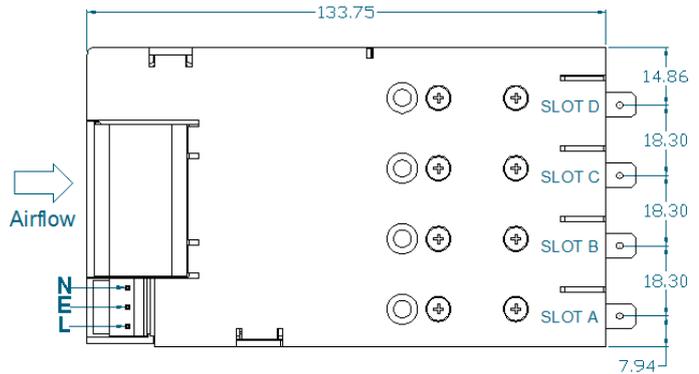
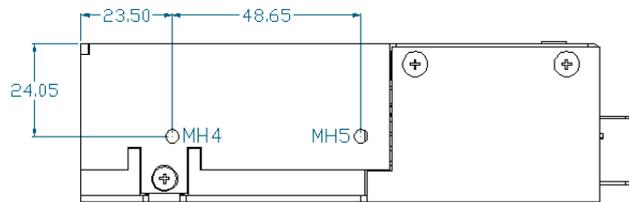
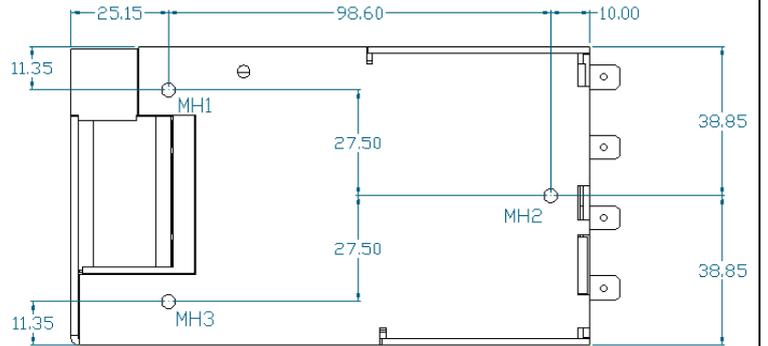
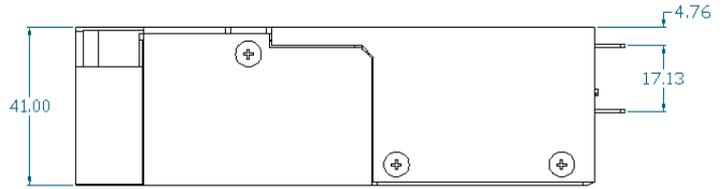
CB certificate and report available on request



## MECHANICAL DIMENSIONS AND MOUNTING SCREWS



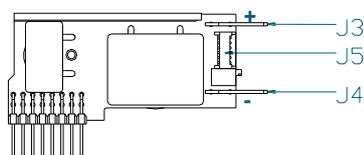
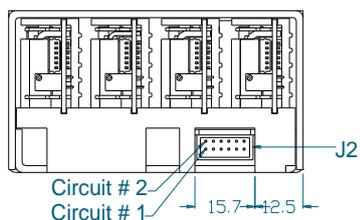
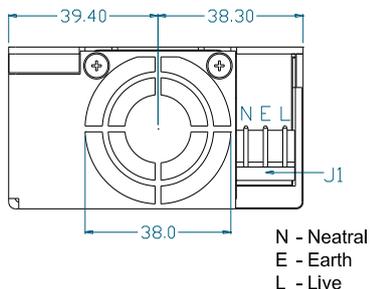
N - Neutral  
E - Earth  
L - Live



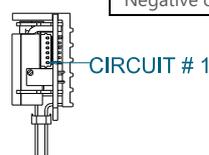
SCREWS	
MH1, MH2, MH3, MH4, MH5	
Screw type	M4
Tightening	Tighten to 0.55 Nm <sup>(1)</sup>
Penetration depth	4.00mm max including chassis
OUTPUT MODULES x 8	
Screw type	M3x5, C/Sink, Posi, Stainless Steel
Tightening	Tighten to 0.50 Nm <sup>(1)</sup>
Penetration depth	Defined by screw
CHASSIS x 5	
Screw type	M3x5, C/Sink, Posi, Stainless Steel
Tightening	Tighten to 0.50 Nm <sup>(1)</sup>
Penetration depth	Defined by screw
FAN x 2	
Screw type	M3x30, C/Sink, Posi, Stainless Steel
Tightening	Tighten to 0.50 Nm <sup>(1)</sup>
Penetration depth	Defined by screw
1. Torque settings are for general reference only. The torque settings shown in the datasheet are the insert manufacturers recommended values.	

## CONNECTORS

PINOUTS	
<b>J1</b>	
Circuit	Details
1	Live
2	Earth
3	Neutral
<b>J2</b>	
Circuit	Details
1	Power good
2	Inhibit
3	Power good
4	Inhibit
5	Power good
6	Inhibit
7	Power good
8	Inhibit
9	Global inhibit
10	AC OK
11	+5V 200mA bias supply
12	COM
<b>J5<sup>(4)</sup></b>	
Circuit	Details
1	-Sense
2	+Sense
3	Voltage control
4	Current control / share / out
5	COM
6	+5V local bias supply



<b>J3</b>
Positive output
<b>J4</b>
Negative output

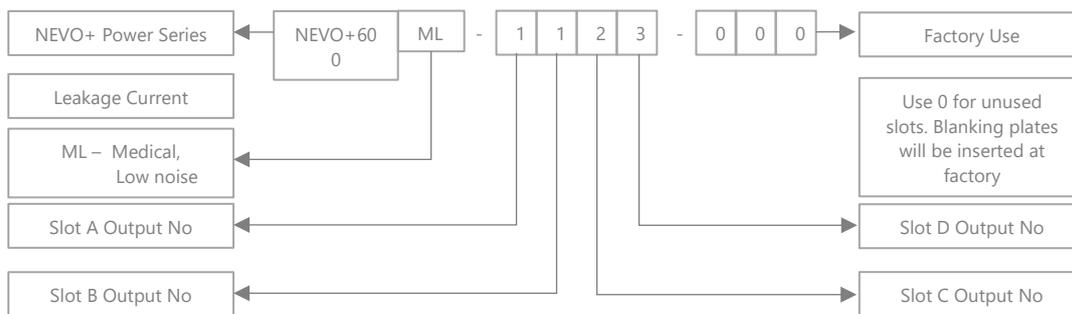


REF.	DETAILS	MANUFACTURER	TERMINAL
J1	MAINS INPUT: 3 Pin, 5.08mm, with Friction Lock, 18-24 AWG	MOLEX	10013036
J2	GLOBAL SIGNALS: 12 Pin, 2mm, with Friction Lock, 24-30 AWG	MOLEX	511101251
J3/4(1)	OUTPUT POWER TERMINAL: TAB SIZE 6.35mmx0.8mm	VARIOUS	VARIOUS
J5	OUTPUT SIGNALS: 6 Pin, 1.25mm, with Friction lock, 28-32 AWG	MOLEX	0510210600
			0500588000

**Notes**

- Terminal and Wire current rating must exceed maximum short circuit output current. Eg. Output 1 = 25A\*1.25 = 31.25Amps
- Direct equivalents may be used for any connector parts
- All cables must be rated 105°C min, equivalent to UL1015
- Pinout is for single output types only

## PART NUMBERING SYSTEM



Our design team will assist with value add requirement if an application requires standard/non-standard accessories or non-nominal voltage settings.

Once approved, the factory will issue a 3 or 4 digit code for your specific configuration which can be used for all future orders of the same configuration.

When ordering an input unit with no outputs inserted, simply order NEVO+600ML

All specifications are believed to be correct at time of publishing. Vox Power Ltd reserves the right to make changes to any of its products and to change or improve any part of the specification, electrical or mechanical design or manufacturing process without notice. Vox Power Ltd does not assume any liability arising out of the use or application of any of its products and of any information to the maximum extent permitted by law. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any products of Vox Power Ltd. VOX POWER LTD DISCLAIMS ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF SUITABILITY, FITNESS FOR PURPOSE, MERCHANTABILITY AND NON-INFRINGEMENT.

Please consult your local distributor or Vox Power directly to ensure that you have the latest revision before using the product and refer to the latest relevant user manual for further information relating to the use of the product. Vox Power Ltd products are not intended for use in connection with life support systems, human implantations, nuclear facilities or systems, aircraft, spacecraft, military or naval missile, ground support or control equipment used for the purpose of guidance navigation or direction of any aircraft, spacecraft or military or naval missile or any other application where product failure could lead to loss of life or catastrophic property damage. The user will hold Vox Power Ltd harmless from any loss, cost or damage resulting from its breach of these provisions.