MEDICAL DATASHEET

NEVO+600 SERIES

- Modular
- Configurable
- Reduced fan noise
- Enhanced Line Derating

600 watt in the palm of your hand

The enhanced NEVO+ series features improved low input line derating delivers 600 watts without the need to derate for line voltages above 120Vac making the NEVO+ the ultimate power solution for products destined for the global market. Through the implementation of a fan control circuit the NEVO+ also features reduced fan noise. The NEVO+ delivers up to 600 watts from a 600 gram 5" x 3" x 1U package and consists of an input module together with up to eight isolated output modules. The series carry full UL60601 3rd ED safety approvals and comply with EN61000-3, EN61000-4 and EN550022-B EMC standards.

MAIN FEATURES:

- ✓ **No Line derating above 120VAC**
- ✓ **Reduced fan noise**
- ✓ **600 watt output**
- ✓ **5" x 3" x 1U footprint**
- ✓ **High power density (25W/in^3)**
- ✓ **UL 60601 3rd ED**
- ✓ **High reliability**
- ✓ **High efficiency – up to 89%**
- ✓ **Only 0.6kg – 100W/kg**
- ✓ **I^{2}C control option**
- ✓ **Remote current/voltage programming**
- ✓ **Current output signal**
- ✓ **Accurate current sharing**
- ✓ **5V 200mA bias supply**
- ✓ **RoHS compliant**
- ✓ **Field configurable**
- ✓ **Two year warranty**

SYSTEM 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			600	Watts
Input Current	600Watts output at 120Vrms input			6	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	600Watts output at 120Vrms input	17	20	21	mS
UVLO	Turn on only	78		84	Vrms
Over temperature	Internally monitored. Latching	115		125	°C
Reliability	40°C 80% load			2	FPMH
Signals: Bias Voltage		4.8	5	5.2	V
Signals: Bias current		0		200	mA
Signals: Power Good voltage	PNP open collector with internal 10k pull down resistor	8	10	15	V
Signals: Power Good current		0		20	mA
Signals: Inhibit voltage		2		15	V
Signals: Inhibit current	10k ohm input impedance	0.2		1.5	mA
Signals: Global inhibit voltage		3		15	V
Signals: Global inhibit current	5k ohm input impedance	0.6		3	mA
Signals: AC_OK voltage		1		4	V
Signals: AC_OK current		-10		20	mA
Signals: 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	2002/95/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			2	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)

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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
		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	35	60	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			

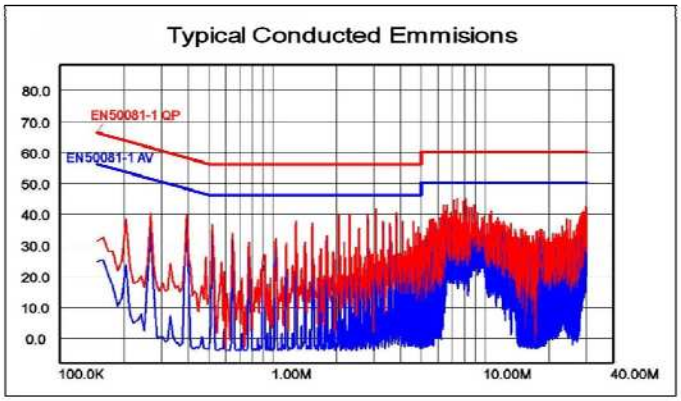
EMC

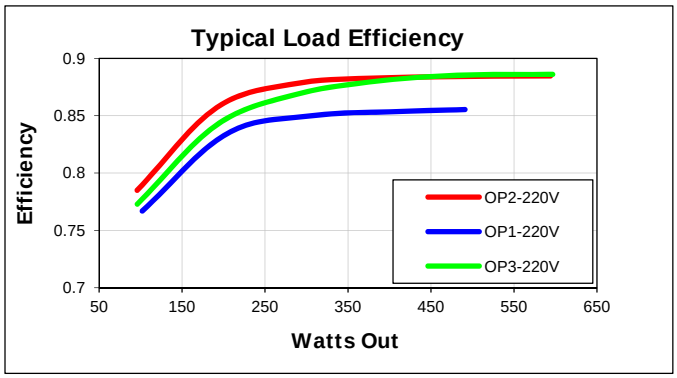
	Parameter	Standard	Level
Emissions	Radiated electric field	EN55011, EN55022, FCC	B
	Conducted emissions	EN55011, EN55022, FCC	B
	Harmonic Distortion	EN61000-3-2	Compliant
	Flicker & Fluctuation	EN61000-3-3	Compliant
Immunity	Electrostatic discharge	EN61000-4-2 (15kV air, 8kV contact)	4
	Radiated RFI	EN61000-4-3 (10V/m)	3
	Fast Transient burst	EN61000-4-4 (4kV)	4
	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

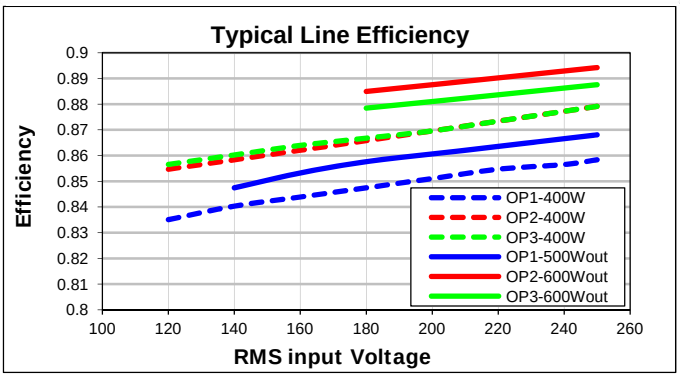
AGENCY APPROVALS

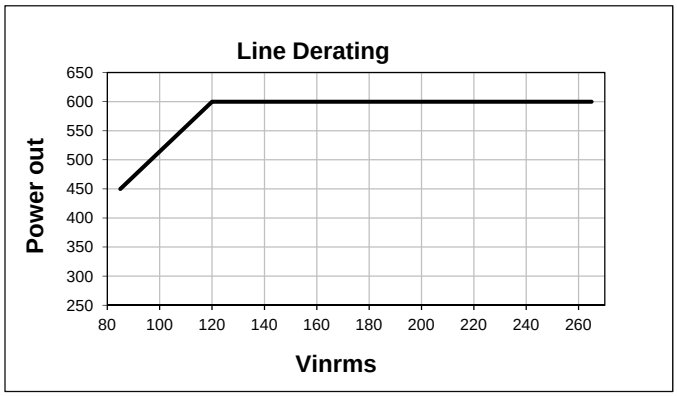
Standard	Details	Standard	Details
IEC/EN60601-1	3rd ED		
UL60601-1			
CSA-C22.2 No. 60601-1-08			
CE MARK	LVD 73/23/EEC	UL file number	UL: E316486

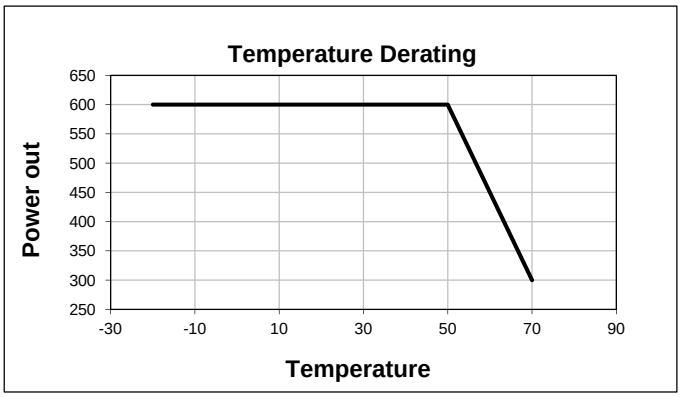
CB certificate and report available on request











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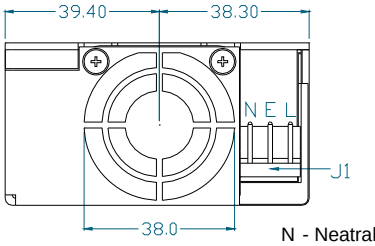
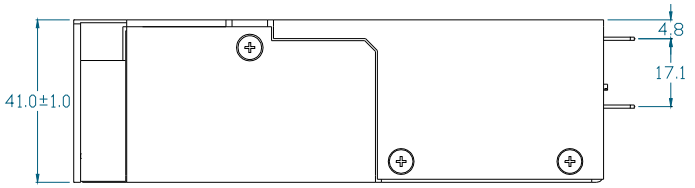
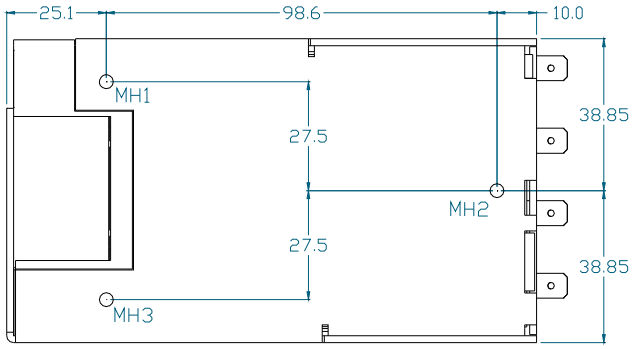
NEVO+600 SERIES

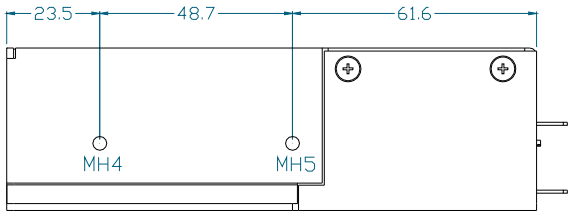
MECHANICAL DIMENSIONS AND MOUNTING SCREWS

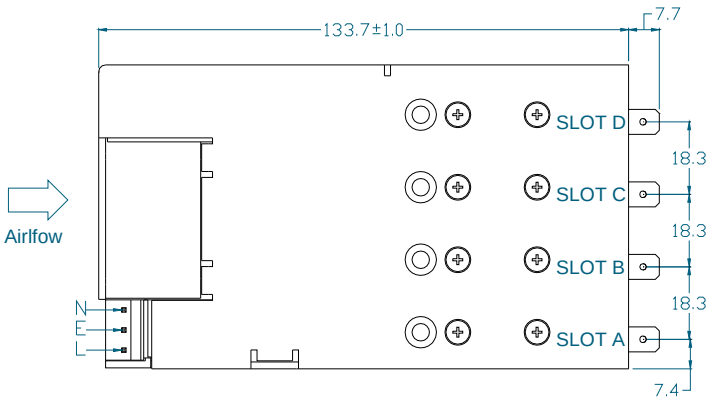


N - Neatral
E - Earth
L - Live









SCREWS	
MH1, MH2, MH3, MH4, MH5	
Screw type	M4
Tightening	Tighten to 1.5 Nm
Penetration depth	4.00mm max including chassis
OUTPUT MODULES x 8	
Screw type	M3x5, C/Sink, Posi, Stainless Steel
Tightening	Tighten to 0.75 Nm
Penetration depth	Defined by screw
CHASSIS x 5	
Screw type	M3x5, C/Sink, Posi, Stainless Steel
Tightening	Tighten to 0.75 Nm
Penetration depth	Defined by screw
FAN x 2	
Screw type	M3x30, C/Sink, Posi, Stainless Steel
Tightening	Tighten to 0.75 Nm
Penetration depth	Defined by screw

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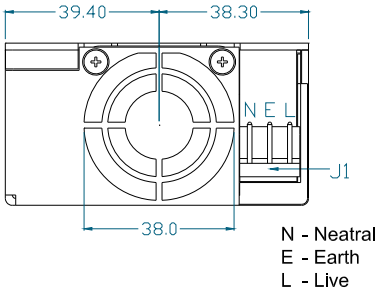
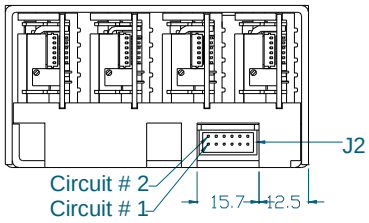
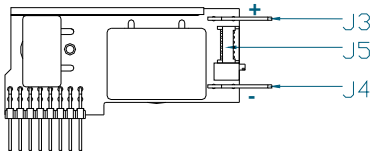
CONNECTORS

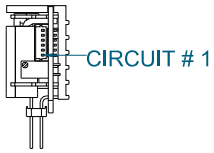
PINOUTS		
J1		
Circuit	Details	
1	Live	
2	Earth	
3	Neutral	
J2		
Circuit	Details	
1	Power Good	Slot A
2	Inhibit	
3	Power Good	Slot B
4	Inhibit	
5	Power Good	Slot C
6	Inhibit	
7	Power Good	Slot D
8	Inhibit	
9	Global Inhibit	
10	AC OK	
11	+5V 200mA Bias Supply	
12	COM	
J5		
Circuit	Details	
1	-Sense	
2	+Sense	
3	Voltage Control	
4	Current Control / Share / Out	
5	COM	
6	+5V local bias supply	





J3
Positive Output
J4
Negative Output

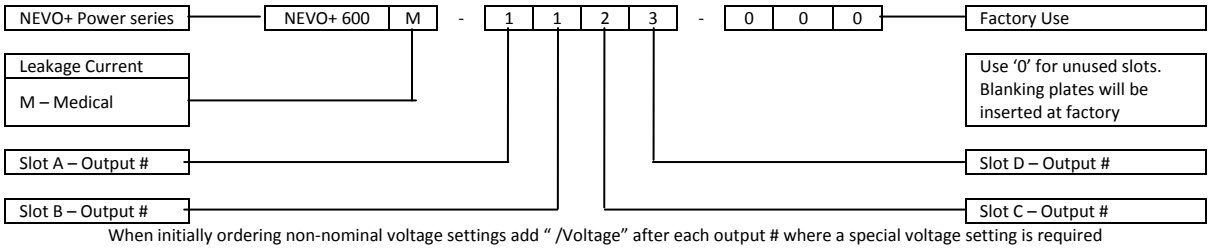




REF.	DETAILS	MANUFACTURER		TERMINAL
J1	MAINS INPUT: 3 Pin, 5.08mm, with Friction Lock, 18-24 AWG	MOLEX	010013036	8701031
J2	GLOBAL SIGNALS: 12 Pin, 2mm, with Friction Lock, 24-30 AWG	MOLEX	511101260	503948051
J3/4(1)	OUTPUT POWER TERMINAL: TAB SIZE 6.35mmx0.8mm	VARIOUS		VARIOUS
J5	OUTPUT SIGNALS: 6 Pin, 1.25mm, with Friction lock, 28-32 AWG	MOLEX	1510210600	50058800

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

PART NUMBERING SYSTEM



When initially ordering non-nominal voltage settings add " /Voltage" after each output # where a special voltage setting is required
E.g. If 3.30Vdc is required in slot B and all other slots require nominal voltages then use:

NEVO+ 600M – 1 – 1/3.30 – 2 - 3

The factory will then issue a 3 digit code for your specific configuration that can be used for all future orders of the same configuration
When ordering an input unit with no outputs inserted, simply order NEVO+ 600M

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Document DOC6008 rev 02

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