



NEVO600M SERIES



Medical Modular
Configurable



600 watt in the palm of your hand

The NEVO 600M is a Medically Approved Modular and user configurable power supply offering unrivalled performance and flexibility. Delivering a full 600W in a 5 x 3 inch footprint at line voltages of $\geq 180\text{VAC}$ (de-rate to 400W at 120VAC); the NEVO is the ultimate power solution for applications where size and weight are vital factors. Each system consists of an input module together with up to four isolated output modules. The series carry full UL60601 safety approvals and comply with EN61000-3, EN61000-4 and EN550022-B EMC standards.

MAIN FEATURES:

- ✓ 600 watts $\geq 180\text{VAC}$
- ✓ 5" x 3" x 1U footprint
- ✓ High power density (25W/in³)
- ✓ Medical approvals
- ✓ Adjustable output voltage
- ✓ High efficiency – up to 89%
- ✓ Only 0.6kg – 100W/kg
- ✓ High reliability
- ✓ Remote current/voltage programming
- ✓ Accurate current sharing
- ✓ Current output signal
- ✓ 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 180Vrms input | | | 4 | Amps | |
| Inrush Current | 265Vrms (cold start) | | | 20 | Amps | |
| Fusing | 5x20 Fast acting | | | 5 | Amps | |
| Input Current Limit | Maintains power factor | | 6 | | 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 180Vrms 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 | |
| | 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 | 2002/95/EC |
| Material group | IIIb (indoor use only) | | |

| RELIABILITY | | | | |
|-------------|----------------------------------|-----|-----|-------|
| Component | Details | Min | Max | Units |
| FAN | Mag Lev Std | | 3.8 | 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 129.7mm x 41.0mm (all external dimensions $\pm 1.0\text{mm}$) |
| Weight | 360 gram +60 gram per output module |
| Mounting | Bottom or Side mounting (See diagram for details) |



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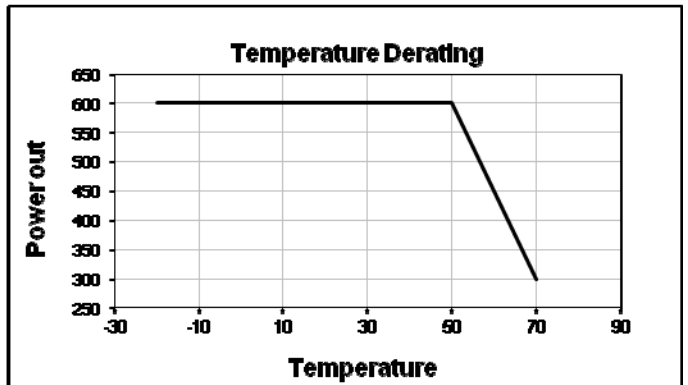
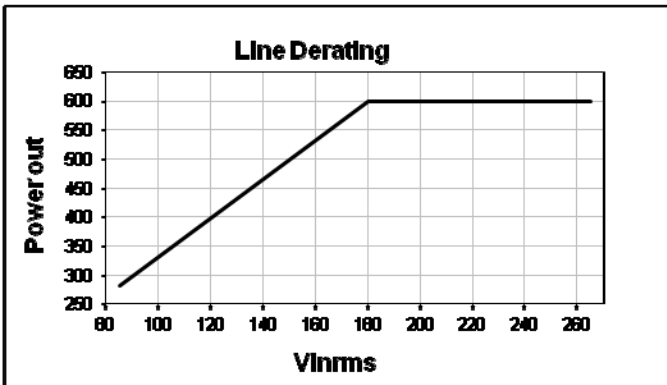
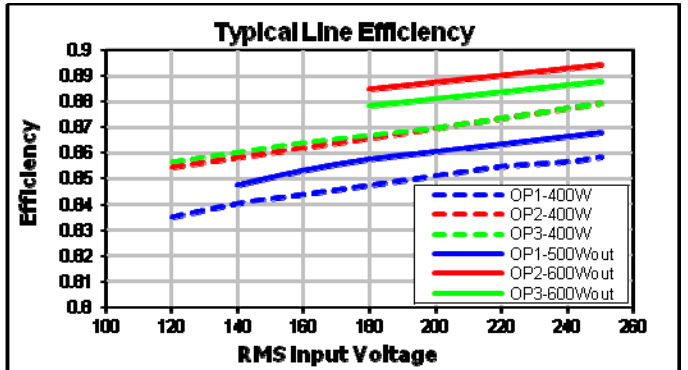
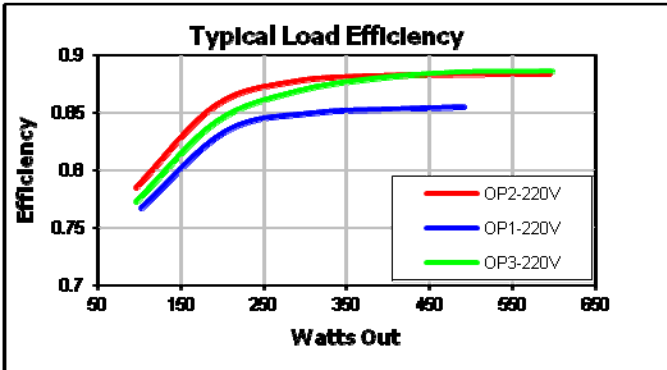
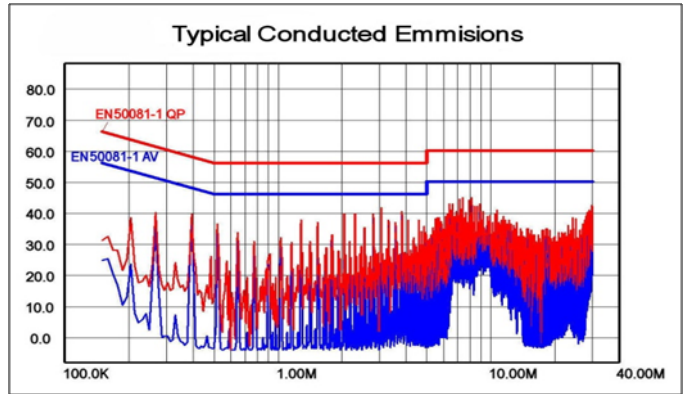


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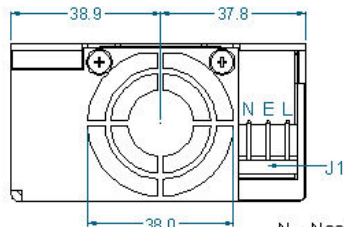
| ENVIRONMENTAL | | | | | | |
|---------------|--------------|--|------|------|-------|--|
| | Parameter | Details | Min | Max | Units | |
| Storage | Temperature | | -40 | +85 | °C | |
| | Humidity | Relative, non-condensing | 5 | 95 | % | |
| | Altitude | | -200 | 5000 | m | |
| | Air Pressure | | 54 | 106 | kPa | |
| Operation | Temperature | Full power Derate input and outputs at 2.5%/°C | -20 | 50 | °C | |
| | Humidity | Relative, non-condensing | 5 | 95 | % | |
| | Altitude | (-200 to 2000m for UL60601-1) | -200 | 3000 | m | |
| | Air Pressure | | 78 | 106 | kPa | |
| | Noise Level | Measured 1m from fan intake | | 45 | dB(A) | |
| | 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 Electromagnetic Interference (EMC) | 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 | | | |
| 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 | | | |

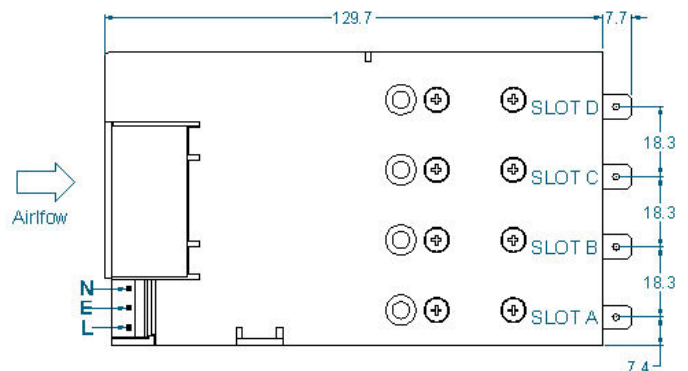
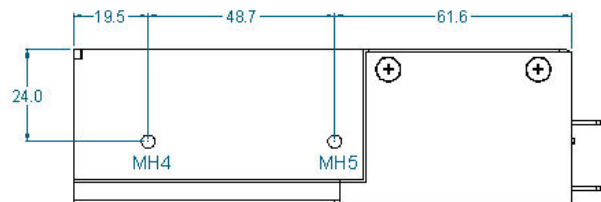
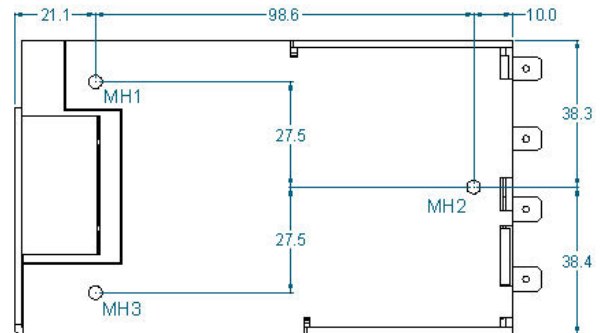
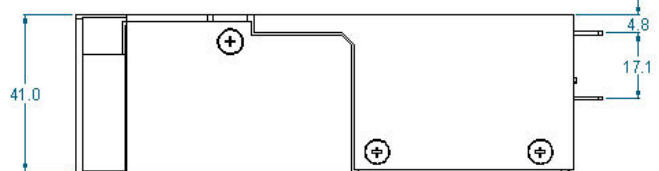


MECHANICAL DIMENSIONS AND MOUNTING SCREWS



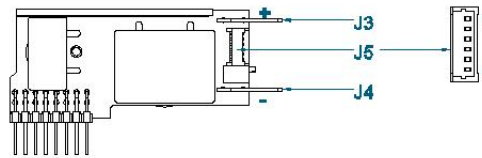
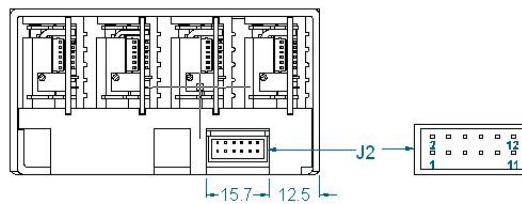
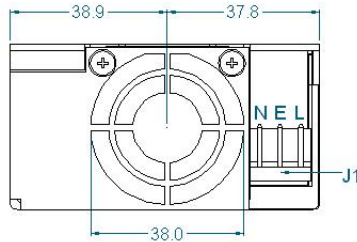
N - Neutral
E - Earth
L - Live

| 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 | M3x24, C/Sink, Posi, Stainless Steel |
| Tightening | Tighten to 0.75 Nm |
| Penetration depth | Defined by screw |



CONNECTORS

| PINOUTS | | |
|-----------|-------------------------------|--------|
| J1 | | |
| Circuit | Details | |
| 1 | Live | |
| 2 | Earth | |
| 3 | Neutral | |
| J2 | | |
| Circuit | Details | |
| 1 | Power Good | Slot A |
| 2 | Inhibit | Slot A |
| 3 | Power Good | Slot B |
| 4 | Inhibit | Slot B |
| 5 | Power Good | Slot C |
| 6 | Inhibit | Slot C |
| 7 | Power Good | Slot D |
| 8 | Inhibit | Slot D |
| 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 | |



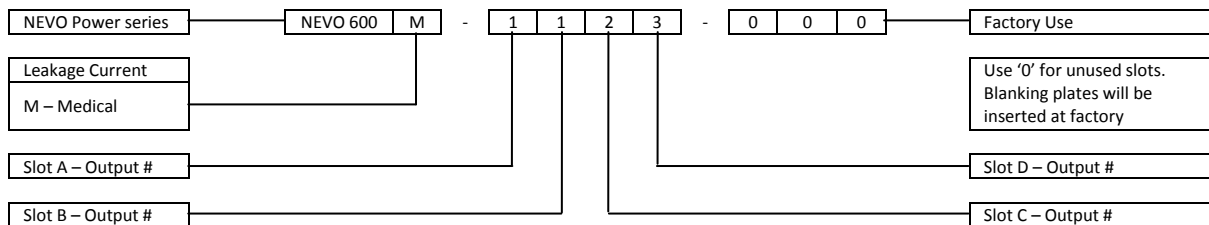
| J3 |
|-----------------|
| Positive Output |
| J4 |
| Negative Output |

| REF. | DETAILS | MANUFACTURER | TERMINAL |
|---------|--|--------------|------------------------|
| J1 | MAINS INPUT: 3 Pin, 5.08mm, with Friction Lock, 18-24 AWG | MOLEX | 8701031 |
| J2 | GLOBAL SIGNALS: 12 Pin, 2mm, with Friction Lock, 24-30 AWG | MOLEX | 503948051 |
| J2 | IDT ALTERNATIVE FOR J2 | MOLEX | 0875681263 |
| 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

- 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

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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