

6"x6"x1.61"  
SMALL

1200W  
POWERFUL

1.2kg  
LIGHT



The NEVO+1200M is the smallest in its class and the ultimate power solution for medical applications where size, weight, low standby power and primary side inhibit are vital factors and delivers up to 1200 Watts from a 1.2kg 6" x 6" x 1.61" package. Each configured unit consists of an input module with up to eight output modules, where any combination of outputs can be fitted to create a power solution with up to sixteen isolated outputs.

Standard features include intelligent fan control, wide output voltage adjust capability and primary side shutdown with standby power consumption of less than 3 Watts. A low noise fan option with virtually silent operation is also available, which allows you to use this innovative power supply in even the quietest of environments. The series carries full 3<sup>rd</sup> Edition 60601 safety approvals and complies with EN55022-B EMC Standards and features market leading specifications and design in application support.

## MAIN FEATURES

- Up to 1200 Watts of output power
- 6" x 6" x 1.61" footprint
- Efficiency up to 89%
- Primary side remote on/off function
- Standby power  $\leq$  3 Watts
- Field configurable
- UL60601 3rd Edition approved
- Industry leading power density (21W/in<sup>3</sup>)
- Lightest modular design – only 1.2kg – 1000Watts/kg
- Parallel & series connection of modules
- Remote current / voltage programming
- Accurate current sharing
- 2 x 5V 1A bias supply
- Low noise fan option
- 3 Year warranty

# SPECIFICATIONS

| INPUT ELECTRICAL    |                        |   |     |       |      |       |
|---------------------|------------------------|---|-----|-------|------|-------|
| Parameter           |                        | Details   | Min | Typ   | Max  | Units |
| AC Input Voltage    |                        | Nominal range is 100V to 240V                           | 85  |       | 264  | Vrms  |
| AC Input Frequency  |                        | Contact factory for 400Hz operation.                    | 47  | 50/60 | 63   | Hz    |
| DC Input Voltage    |                        | Standard  | 120 |       | 370  | Vdc   |
| Power Rating        |                        | See graphs for de-rating                                |     |       | 1200 | Watts |
| Input Current       |                        | 1200Watts output at 120Vrms input                       |     | 12    |      | Amps  |
| Inrush Current      |                        | 265Vrms (cold start)                                    |     |       | 40   | Amps  |
| Fusing              |                        | 5x20 Fast acting  |     |       | 12.5 | Amps  |
| Input Current Limit |                        |   |     | 14    |      | Amps  |
| Efficiency          |                        | See graphs  |     | 86    | 89   | %     |
| Idle Power          |                        | All outputs fitted and enabled                          |     | 46    |      | Watts |
| Idle Power          |                        | All outputs fitted and Disabled                         |     | 32    |      | Watts |
| Standby Power       |                        | Latched off state, 120Vrms                              |     | 2.5   |      | Watts |
| Power Factor        |                        |   |     | 0.99  | 0.99 |       |
| Holdup              |                        | 1200Watts 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  |
| Leakage Current     |                        | Normal condition, 264V, 63Hz                            |     | 190   |      | µAmps |
| S i g n a l s       | Output Bias voltage    | Two isolated Bias Outputs available                     | 4.8 | 5     | 5.2  | V     |
|                     | Output Bias current    | Hiccup type current limit                               | 0   |       | 1    | A     |
|                     | 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          | High output   | 4.7 |       | 5.2  | V     |
|                     |                        | Low output  | 0   |       | 0.1  | V     |
|                     | AC_OK current          |   | -10 |       | 10   | mA    |
|                     | AC_OK warning          | See user manual for exceptions                          | 5   |       |      | mS    |
|                     | Primary Bias voltage   | Medically Isolated                                      | 4.8 | 5     | 5.2  | V     |
|                     | Primary Bias current   | Hiccup type current limit                               |     |       | 0.5  | A     |
|                     | Primary Remote On/Off  | Negative Edge Triggered. Refer to User Manual           |     | 5     |      | V     |

| 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 Fans per unit)    |     | 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 (2 MOPP)          |     | 4000 | Vac   |
|                     | Input to chassis (1 MOPP)         |     | 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    |

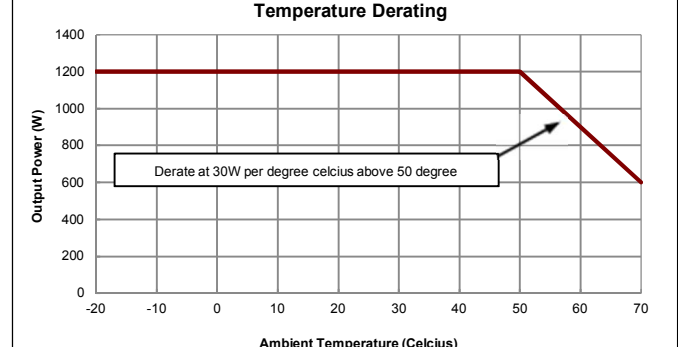
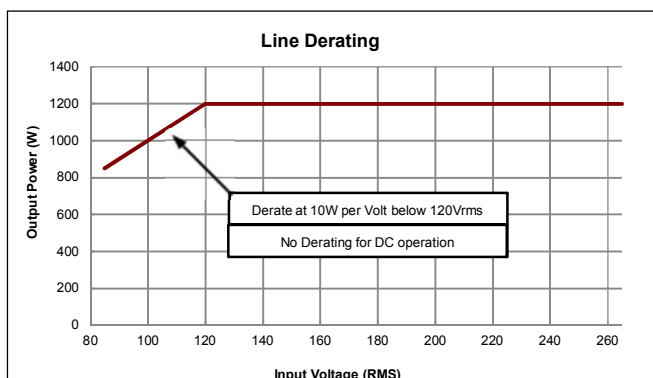
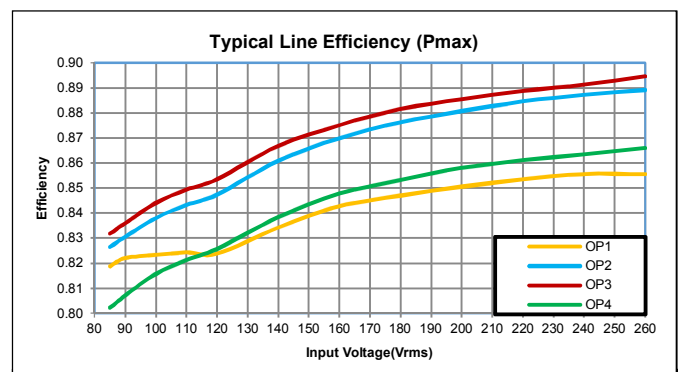
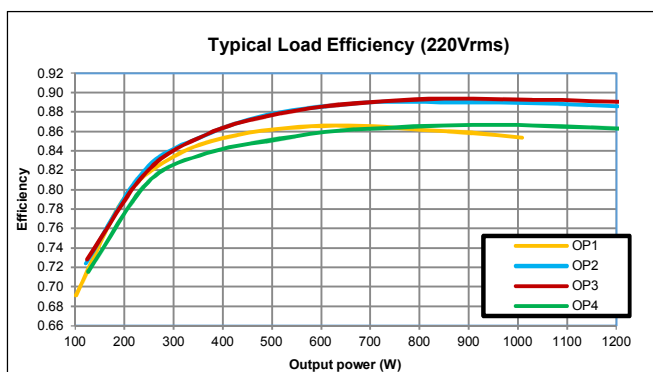
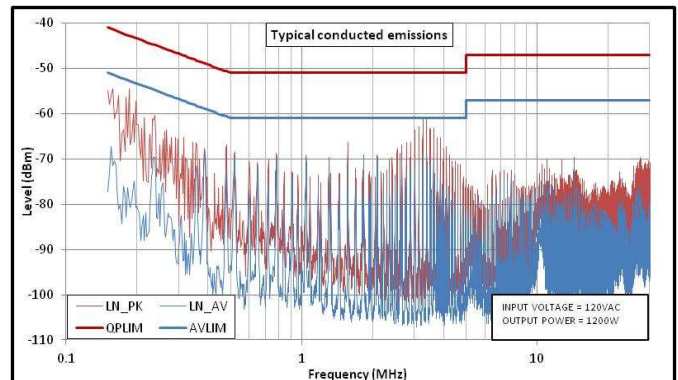
| MECHANICAL |  |
|------------|--|
| Parameter  | Details                                      |
| Size       | 154.5mm (L) x 152.4mm (W) x 41.0 ± 1.0mm (H) |
| Weight     | 720 gram + 60 gram per output module         |
| Mounting   | Bottom (see diagram for details)             |

| ENVIRONMENTAL |              |  |      |      |       |
|---------------|--------------|--|------|------|-------|
| Storage       | Parameter    | Details  | Min  | Max  | Units |
|               | Temperature  |  | -40  | +85  | °C    |
|               | Humidity     | Relative, non-condensing   | 5    | 95   | %     |
|               | Altitude     |  | -200 | 5000 | m     |
| Operation     | Air Pressure |  | 54   | 106  | kPa   |
|               | 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  | Unit at idle   |      | 42   | dBA   |
|               |              | Unit at full power, 25°C   |      | 61   | 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       |                            |  |              |
|-----------|----------------------------|--|--------------|
| Emissions | Parameter                  | Standard                               | Level        |
|           | Radiated electric field    | EN55011, EN55022, FCC                  | A (See Note) |
|           | Conducted emissions        | EN55011, EN55022, FCC                  | B            |
|           | Harmonic Distortion        | EN61000-3-2                            | Compliant    |
| Immunity  | Flicker & Fluctuation      | EN61000-3-3                            | Compliant    |
|           | Electrostatic discharge    | EN61000-4-2<br>(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    |

Note: To meet Class B radiated emissions the end user should add ferrites to I/P and O/P cables. Consult Vox Power for details.

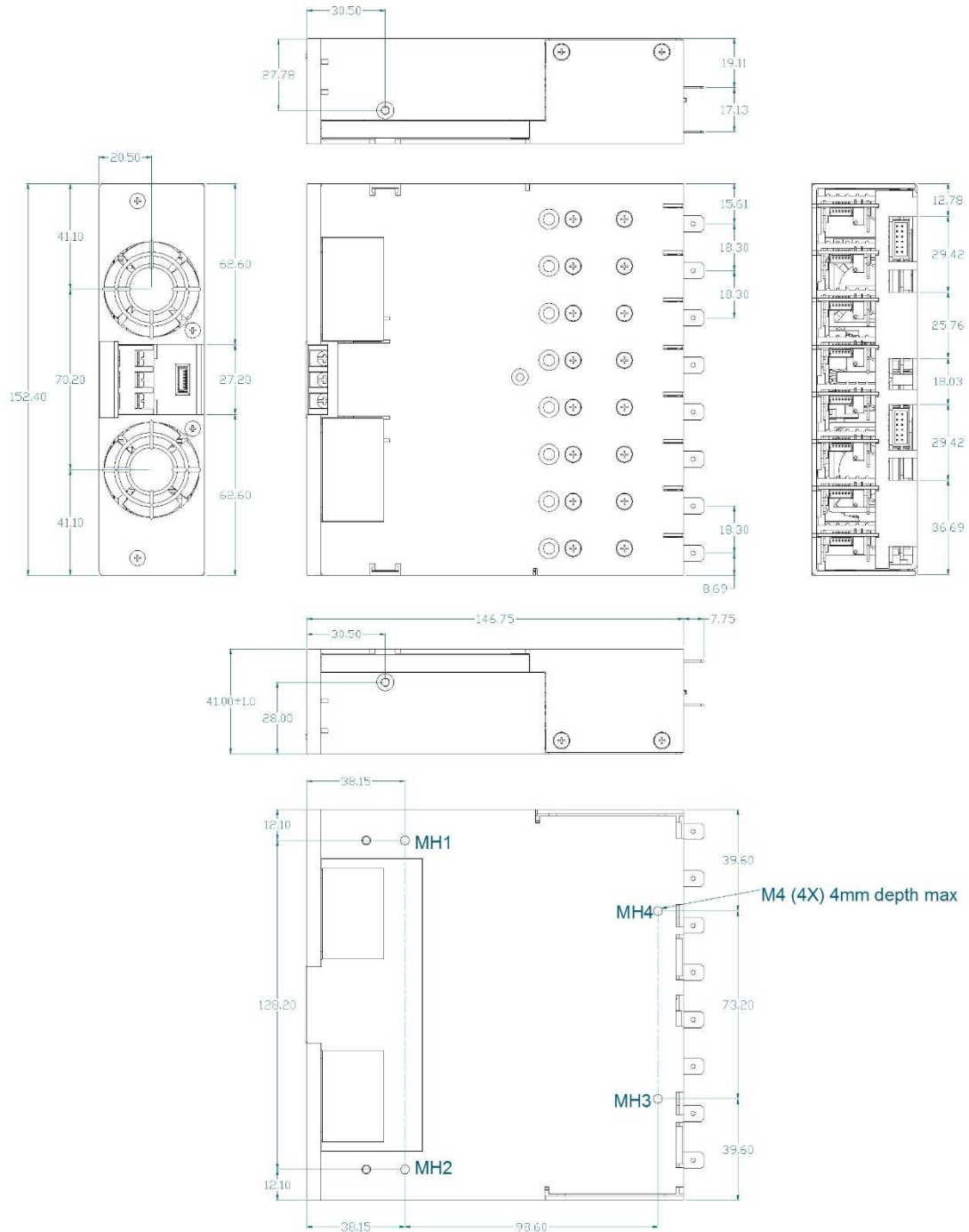
| AGENCY APPROVALS                               |                |             |
|--|----------------|-------------|
| Standard                                       | Details        | File        |
| IEC/EN60601-1                                  | 3rd Edition    | UL: E316486 |
| UL60601-1                                      | 3rd Edition    |             |
| CAN/CSA-C22.2 No. 60601-1 (2008)               |                |             |
| 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

| SCREWS                    |                                     |                            |                        |
|---------------------------|-------------------------------------|----------------------------|------------------------|
| LOCATION                  | DETAILS                             | PENETRATION                | TIGHTENING             |
| MOUNTING                  | M4 x 4                              | 4mm max, including chassis | 0.55 NM <sup>(1)</sup> |
| OUTPUT MODULES            | M3 x 5, Countersink Posi, 16 Places | Defined by screw           | 0.35 NM <sup>(1)</sup> |
| CHASSIS LID AND FACEPLATE | M3 x 5, Countersink Posi, 11 Places | Defined by screw           | 0.35 NM <sup>(1)</sup> |

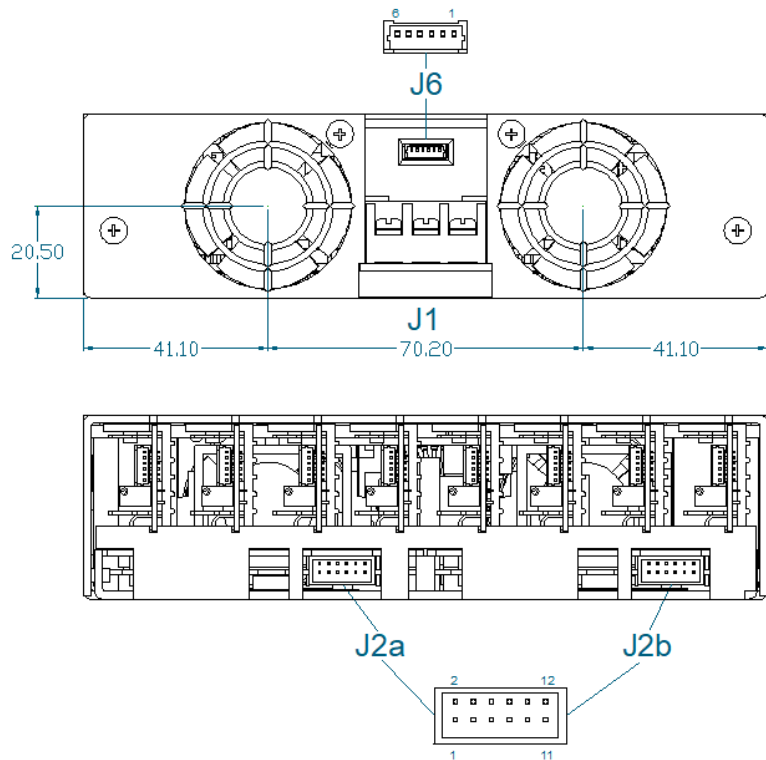
1. Torque settings are for general reference only. The torque settings shown in the datasheet are the insert manufacturers recommended values.



TOLERANCES unless otherwise stated - All dimensions in mm and according to DIN 2768-1/-2 CLASS C

## CONNECTORS

| PINOUTS |                    |              |
|---------|--------------------|--------------|
| J1      |                    |              |
| Circuit | Details            |              |
| 1       | Live               |              |
| 2       | Earth              |              |
| 3       | Neutral            |              |
| J2a/b   |                    |              |
| Circuit | Details            |              |
| 1       | Power Good         | Slot A and E |
| 2       | Inhibit            |              |
| 3       | Power Good         | Slot B and F |
| 4       | Inhibit            |              |
| 5       | Power Good         | Slot C and G |
| 6       | Inhibit            |              |
| 7       | Power Good         | Slot D and H |
| 8       | Inhibit            |              |
| 9       | Global Inhibit     |              |
| 10      | AC OK              |              |
| 11      | +5V 1A Bias Supply |              |
| 12      | COM                |              |
| J6      |                    |              |
| 1       | Common             |              |
| 2       | +5V 500mA Bias     |              |
| 3       | Shut Down          |              |
| 4       | Reserved           |              |
| 5       | Reserved           |              |
| 6       | Reserved           |              |



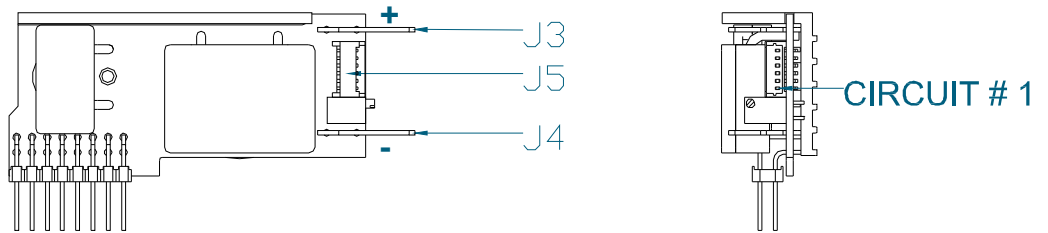
| REF   | DETAILS  | MANUFACTURER | HOUSING   | TERMINAL  |
|-------|--|--------------|-----------|-----------|
| J1    | MAINS INPUT: 3 Pin, Barrier, 6-32 Steel Screws, 0.8 NM or 7IN LB Torque Cable 14-18AWG, 300V, 16A, 105°C, use appropriately rated fork or ring terminal. | MOLEX        |           |           |
| J2a/b | GLOBAL SIGNALS: 12 Pin, 2mm, without Friction Lock, 24-30 AWG  | MOLEX        | 511101251 | 503948051 |
| J6    | INPUT BIAS: OUTPUT SIGNALS: 6 Pin, 1.25mm, with Friction lock, 28-32 AWG   | MOLEX        | 510210600 | 500588000 |

### Notes

1. Direct equivalents may be used for any connector parts.
2. All cables must be rated 105°C min, equivalent to UL1015

## SINGLE OUTPUT MODULE CONNECTORS

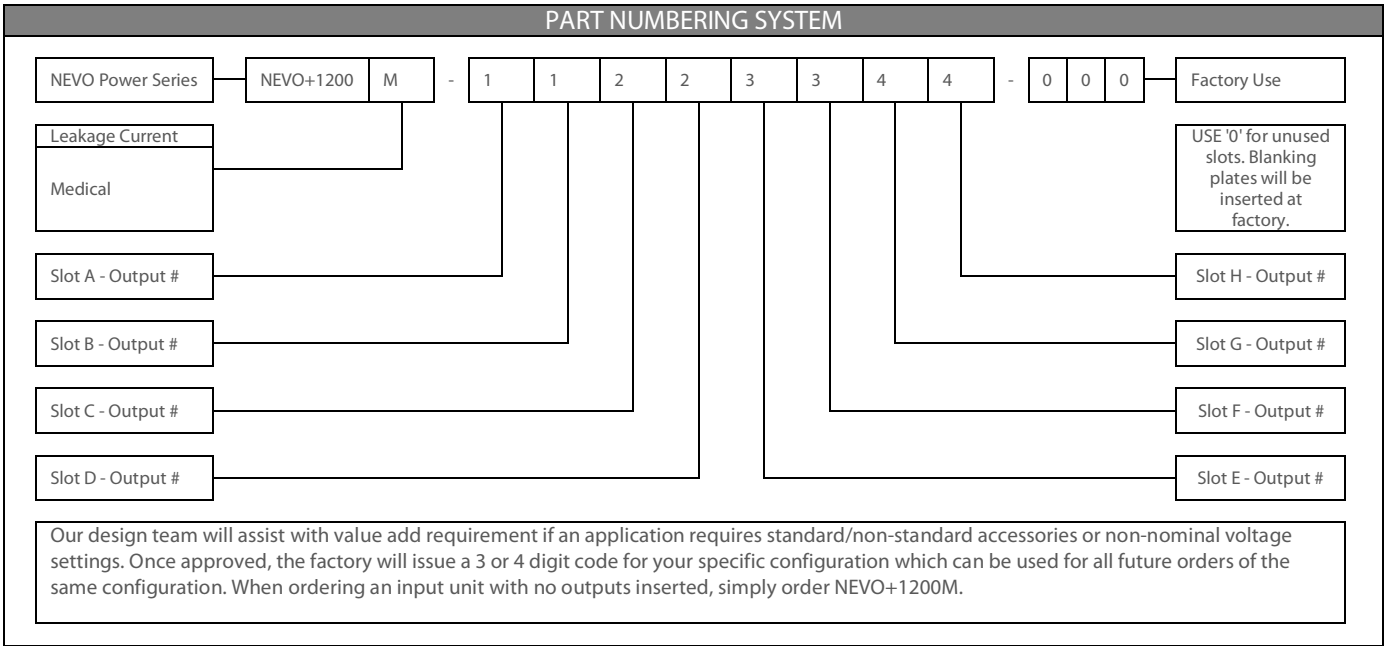
| PINOUTS |                               |
|---------|-------------------------------|
| J3      |                               |
| Circuit | Details                       |
| 1       | Positive output               |
| J4      |                               |
| Circuit | Details                       |
| 1       | Negative output               |
| J5      |                               |
| Circuit | Details                       |
| 1       | -Sense                        |
| 2       | +Sense                        |
| 3       | Voltage control               |
| 4       | Current control / share / out |
| 5       | COM                           |
| 6       | +5V local bias supply         |



| REF.    | DETAILS   | MANUFACTURER | HOUSING    | TERMINAL   |
|---------|---|--------------|------------|------------|
| J1      | MAINS INPUT: 3 Pin, 5.08mm, with Friction Lock, 18-24 AWG     | MOLEX        | 10013036   | 0008701031 |
| J2      | GLOBAL SIGNALS: 12 Pin, 2mm, without Friction Lock, 24-30 AWG | MOLEX        | 511101251  | 0503948051 |
| 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

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



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