

# ARTESYN CONFIGURABLE NeoPower

Up to 4000 W



NP08

Advanced Energy's NeoPower (NP) configurable AC-DC power supplies provide high power density as either a programmable voltage or current source. The NeoPower configurable will feature an intuitive software interface and user configurable modules to enable fast prototypes. Modules can be connected in series and parallel with the configurable busbar system to enable 1,000's of output combinations.

The NeoPower is certified for both industrial and medical safety approvals, including compliance to the SEMI F47 standard. The NeoPower supports digital communication with MODBUS RTU for control, monitoring and configuration.

## AT A GLANCE

### Total Power

Up to 4000 W

### Input Voltage

90 to 264 VAC  
1-Phase

### # of Outputs

Up to 8

## SPECIAL FEATURES

- Short circuit protection
- Over voltage protection (OVP)
- Over current protection (OCP)
- Over temperature protection (OTP)
- Active power factor correction
- Output on/off control
- Fan speed control
- Power good signal
- Active current share
- Remote voltage sense
- Supports MODBus RTU digital communication. Supports PMBUS and CANOPEN with dongle
- Input to Output: 5000 VAC or 7000 VDC, 2 x MOPP  
Input to Earth: 1800 VAC or 2500 VDC, 1 x MOPP

Output to Earth: 1800 VAC or 2500 VDC, 1 x MOPP  
Medical BF rated

- End user installable modules (no hi-pot or safety certifications required to install modules)
- 5-year manufacture's warranty

## SAFETY

- IEC/EN 62368-1
- UL 62368-1, CSA C22.2 No. 62368-1
- IEC/EN 60601-1
- ANSI/AAMI ES 60601-1  
CAN/CSA-C22.2 No 60601-1
- CE mark (LVD+RoHS)
- CB certificates and report
- CCC (CQC optional)



## ELECTRICAL SPECIFICATIONS

| Input   |  |
|---|--|
| Case Model                                      | NP08W1A  |
| Orderable Part Number                           | 83-108-0001W   |
| Number of Slots                                 | 8  |
| AC Input Range                                  | Low line 1-phase: 90 to 132 VAC; High line 1-phase: 180 to 264 VAC   |
| AC Input Frequency                              | 47 to 440 Hz   |
| Turn-on Voltage                                 | 87 VAC +/- 2%  |
| Turn-off Voltage                                | 81 VAC +/- 2%  |
| Max Power                                       | Low line: 2000 W; High line: 4000 W  |
| Max Inrush Current <sup>1</sup>                 | 80 A   |
| Max Input Current                               | 27 A   |
| Crest Factor                                    | 1.1 to 1.5   |
| Power Factor                                    | 0.99 @ full load and nominal line  |
| Harmonic Distortion                             | Meets EN 61000-3-2   |
| Line Interruption                               | Meets SEMI F47-0706, 53, 58, S14 at nominal input voltages and full load condition   |
| Input Leakage Current <sup>2</sup> - Industrial | < 2.5 mA   |
| Input Leakage Current <sup>2</sup> - Medical BF | Earth (normal condition) < 0.5 mA<br>Earth (single fault condition) < 1.0 mA<br>Touch/Patient (normal condition) < 0.1 mA<br>Touch/Patient (single fault condition) < 0.5 mA |
| Hold-up Time                                    | 20 ms minimum, additional holdover storage with optional HUP module <sup>3</sup>   |
| Ride-through Time                               | 20 ms minimum, additional holdover storage with optional HUP module <sup>3</sup>   |
| Input Protection                                | Internal fuse on all input lines (not user serviceable)  |
| Input Over Voltage Protection                   | Up to 115% of nominal input without damage   |
| Isolation                                       | Input to Output: 5000 VAC or 7000 VDC, 2 x MOPP<br>Input to Earth: 1800 VAC or 2500 VDC, 1x MOPP   |
| Efficiency <sup>4</sup>                         | 90% typical (Contact support for efficiency curve for a configured model)  |
| Standby Output                                  | 5 V/2 A  |

Note 1 - Any additional inrush current surges or spikes in the form of AC cycles or multiple AC cycles greater than 10 ms, and less than 150 ms, must not exceed 25 A peak. Short pulses (<300  $\mu$ S) caused by X caps are not considered.

Note 2 - The specification is not applicable for 400 Hz (+/-10%) input frequency operation.

Note 3 - Consult with AE for the availability of the HUP module.

Note 4 - Tested with 1-phase NP08W1A case at 240 VAC input and populated with 8 x 48 V modules . 5 V standby at no load.

## ELECTRICAL SPECIFICATIONS

| 1 Slot Single Output Modules        |  |                |                |                |                |
|-------------------------------------|--|----------------|----------------|----------------|----------------|
| Model                               | 1S 0005M   | 1S 0012M       | 1S 0015M       | 1S 0024M       | 1S 0048M       |
| Voltage Source (VS) Mode            |  |                |                |                |                |
| Nominal Output Voltage              | 5 V  | 12 V           | 15 V           | 24 V           | 48 V           |
| Orderable Part Numbers              | 83-011-0005M   | 83-011-0012M   | 83-011-0015M   | 83-011-0024M   | 83-011-0048M   |
| Output Voltage Range                | 1.0 to 6.0 V   | 2.4 to 14.4 V  | 3.0 to 18.0 V  | 4.8 to 28.8 V  | 9.6 to 57.6 V  |
| Output Current Range                | 0 to 56 A  | 0 to 41.6 A    | 0 to 33.3 A    | 0 to 20.8 A    | 0 to 10.4 A    |
| Current Source (CS) Mode            |  |                |                |                |                |
| Rated Output Current                | 56 A   | 33.3 A         | 26.6 A         | 16.6 A         | 8.3 A          |
| Output Current Range                | 2.8 to 56 A  | 1.66 to 41.6 A | 1.33 to 33.3 A | 0.83 to 20.8 A | 0.42 to 10.4 A |
| Minimum Output Voltage              | 1.0 V  | 2.4 V          | 3.0 V          | 4.8 V          | 9.6 V          |
| Max Output Power                    | 280 W  | 400 W          | 400 W          | 400 W          | 400 W          |
| Max Capacitance for Dynamic Loading | 820 $\mu$ F  | 470 $\mu$ F    | 220 $\mu$ F    | 220 $\mu$ F    | 220 $\mu$ F    |
| Module Connected in Parallel        | Up to 8 modules with active current sharing error of +/-5% from half load to full load.                            |                |                |                |                |
| Remote Sense                        | All outputs have remote sense capability. Compensate for up to 2% of Vnom drop in each load line.                  |                |                |                |                |
| Under-voltage Protection (UVP)      | Capable of detecting an under-voltage condition in which the output voltage does not achieve its setpoint voltage. |                |                |                |                |
| Over-voltage Protection (OVP)       | 110% to 120% of Vout-target, latch off mode. Cleared by input voltage reset or clear faults digital register.      |                |                |                |                |
| Over-current Protection (OCP)       | Latch vs foldback  |                |                |                |                |
| Short Circuit Protection (SCP)      | All outputs protected from continuous output shorted condition (no damage or reliability issues).                  |                |                |                |                |

## ELECTRICAL SPECIFICATIONS

| Output - Adjustable Voltage Source    | via Digital Command  | via Analog Signal                              |
|---------------------------------------|--|--|
| Programming Accuracy                  | +/- 1% of Vset or Vnom, whichever is greater   | +/- 1.5% of Vset or Vnom, whichever is greater |
| Monitoring Accuracy                   | +/- (1% of Vset + 1% of Vnom)  | +/- (1.5% of Vset + 1.5% of Vnom)              |
| Line Regulation                       | +/-1% of Vnom  |  |
| Load Regulation                       | +/-1% of Vnom  |  |
| Ripple & Noise @ 20 MHz BW (Pk-to-Pk) | 1% of Vset or Vnom, whichever is greater<br>Measured with a 0.1 $\mu$ F ceramic capacitor in parallel with a 10 $\mu$ F tantalum or low ESR E-cap.   |  |
| Ripple & Noise @ 20 MHz BW (RMS)      | 0.1% of Vset or Vnom or 10 mV, whichever is greater<br>Measured with a 0.1 $\mu$ F ceramic capacitor in parallel with a 10 $\mu$ F tantalum or low ESR E-cap.  |  |
| Transient Loading                     | Minimum dynamic load: 20% of rated output current<br>Maximum dynamic loading step: 50% step load @ 1 A/ $\mu$ S<br>Voltage deviation: +/- 7.5% of Vset or Vnom which is greater (for 5V output models); +/- 5% of Vset or Vnom (for other module variants) |  |
| Turn-on Output Voltage Overshoot      | +7.5% of Vset or Vnom, whichever is greater (5V output models)<br>+5% of Vset or Vnom, whichever is greater (other output models)  |  |
| Turn-off Output Voltage Undershoot    | -7.5% of Vset or Vnom, whichever is greater (5V output models)<br>-5% of Vset or Vnom, whichever is greater (other output models)  |  |
| Adjustable Output Voltage Risetime    | 20 to 100 ms   |  |

| Output - Adjustable Current Source | via Digital Command   | via Analog Signal                              |
|------------------------------------|---|--|
| Programming Accuracy               | +/- 1% of Iset or Irated, whichever is greater  | +/- 2% of Iset or Irated, whichever is greater |
| Monitoring Accuracy                | +/- (1% of Iset + 1% of Irated)   | +/- (2% of Iset + 2% of Irated)                |
| Line Regulation                    | +/- 2% of Irated  |  |
| Load Regulation                    | +/- 2% of Irated  |  |
| Ripple & Noise @ 20 MHz BW (RMS)   | +/- (1% of Iset + 1% of Irated)<br>Measured with a 0.1 $\mu$ F ceramic capacitor in parallel with a 10 $\mu$ F tantalum or low ESR E-cap. |  |
| Turn-on Output Voltage Overshoot   | +5% of Iset or Irated, whichever is greater   |  |
| Turn-off Output Voltage Undershoot | -5% of Iset or Irated, whichever is greater   |  |
| Adjustable Output Current Risetime | 20 to 100ms   |  |

## ENVIRONMENTAL SPECIFICATIONS

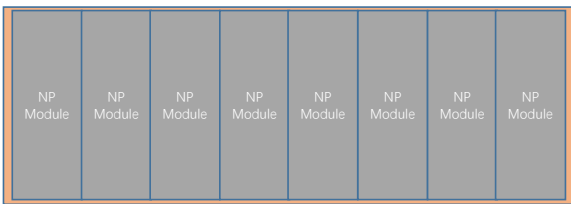
|                           |   |
|---------------------------|---|
| Operating Temperature     | 0°C to +50°C ambient: full performance; -20°C startup;<br>50°C to +70°C ambient: output power derated:<br>70°C @ sea level - 85% derated output power<br>50°C @ 3000 meters above sea level - 90% derated output power<br>70°C @ 3000 meters above sea level - 75% derated output power   |
| Storage Temperature       | -40°C to +85°C  |
| Operating Humidity        | 20% to 90% non condensing   |
| Storage Humidity          | 10% to 95% non condensing   |
| Operating Altitude        | Up to 3,000 meters above sea level  |
| Storage Altitude          | Up to 9,144 meters above sea level  |
| Vibration                 | Operating Sinusoidal Vibration MIL-STD-810G, method 514.6, procedure I, category 4-11:<br>10 to 2000 Hz 6.0 Grms 30 mins three axis (Non Operating );<br>10 to 500 Hz 4.22 Grms 30 mins three axis (operating);<br>1G 5 to 500 Hz sine vib 1 oct/min (Sine Vib)<br>Operating Random Vibration: IPC-9592B Class 1<br>Non-Operating Vibration (Packaged): IPC-9592B Class 1; MIL-STD-810G, Method 514.6, Procedure 1, Category 7, Table 514.6C-VII General Exposure |
| Shock                     | MIL-STD-810G, method 516.6, Procedure I and II:<br>30 Grms 26ms square wave pulse (non operating)<br>40 Grms 6ms half sine pulse (operating)  |
| Shipping and Handling     | NSTA for <100 lbs; MIL-STD-2073-1 >100 lbs  |
| Cooling and Audible Noise | <65 dBA with 80% load @ 30°C at nominal input voltage with Smart Fan algorithm to be optimized based on module and case thermal sensors. When modules are inhibited via software control, the fan speed is reduced to minimum and acoustic noise is <46 dBA.<br>< 80 dBA continuous for 24 hours  |
| Ingress Protection        | Fan Cooled, IP20  |
| MTBF                      | Calculated: 200,000 hours, Telcordia specifications @ 25°C ambient at full load, nominal input line AC<br>Demonstrated: > 500,000 hours   |
| Pollution Degree          | 2, with optional conformal coating  |
| RoHS Compliance           | Yes   |

**ORDERING INFORMATION**

| Case Code   | Module Options Codes  | Case Option Codes  | Parallel/Series Code                         | Software Code                            | Communication Bus                      | Modification Code  |
|---|---|--|--|--|--|--|
| NPXXYZ  | XYZO  | XY   | XYZ  | A  | 0                                      | XXX  |
| <b>XX = Number of Slots - Case Size</b><br>08 = 8 Slots<br><b>Y = Input Voltage Range</b><br>W = Wide range<br>90 to 264 VAC<br><b>Z = 1 or 3 Phase Input</b><br>1 = Single phase | <b>X = Number of Slots for Module</b><br>1 = 1 slot, single O/P<br><b>Y = Module Type (M)edical</b><br><b>Z = Voltage Code(s)</b><br>See table<br><b>O = Option Codes:</b><br>0 = DVS, Module ON<br>1 = DCS, Module ON<br>2 = AVS, Module ON<br>3 = ACS, Module ON<br>4 = DVS, Module OFF<br>5 = DCS, Module OFF<br>6 = AVS, Module OFF<br>7 = ACS, Module OFF<br>Z = Option defined in MOD-I | <b>X = Case Options</b><br>0 = No options<br>1 = Reverse air<br>2 =<br>3 = Global enable<br>4 = Fan idle with inhibit<br>Z = See MOD-I<br><b>Y = Configuration Code</b><br>0 = Shipped from AEI cases/modules<br>C = Shipped configured, modules installed | <b>See Table</b><br>000 = No series/parallel | A = Standard<br>B = Non standard voltage | 0 = Standard MODBUS RTU<br>Z = See MOD | Advanced Energy assigned code to track modification made from the standard design<br><br>CC = Conformal coating<br>RG = Ruggedized |

**Chassis Options**

NP08



8 in.

## ORDERING INFORMATION

### Output Voltage Code Table

| Voltage | Code | Voltage | Code | Voltage | Code | Voltage | Code |
|---------|------|---------|------|---------|------|---------|------|
| 2 V     | A    | 6 V     | H    | 18 V    | O    | 42 V    | V    |
| 2.2 V   | B    | 8 V     | I    | 20 V    | P    | 48 V    | W    |
| 3 V     | C    | 10 V    | J    | 24 V    | Q    | 54 V    | X    |
| 3.3 V   | D    | 11 V    | K    | 28 V    | R    | 60 V    | Y    |
| 5 V     | E    | 12 V    | L    | 30 V    | S    | 190 V   | 19   |
| 5.2 V   | F    | 14 V    | M    | 33 V    | T    | -       | -    |
| 5.5 V   | G    | 15 V    | N    | 36 V    | U    | -       | -    |

### Parallel and Series Connection Table

| Case | Start Slot | Start Slot Code | #slots connected across | Parallel/Series | Description     |
|------|------------|-----------------|-------------------------|-----------------|-----------------|
| NP08 | 1          | 1               | 2                       | P/S             | 1&2             |
| NP08 | 2          | 2               | 2                       | P/S             | 2&3             |
| NP08 | 3          | 3               | 2                       | P/S             | 3&4             |
| NP08 | 4          | 4               | 2                       | P/S             | 4&5             |
| NP08 | 5          | 5               | 2                       | P/S             | 5&6             |
| NP08 | 6          | 6               | 2                       | P/S             | 6&7             |
| NP08 | 7          | 7               | 2                       | P/S             | 7&8             |
| NP08 | 1          | 1               | 3                       | P/S             | 1&2&3           |
| NP08 | 2          | 2               | 3                       | P/S             | 2&3&4           |
| NP08 | 3          | 3               | 3                       | P/S             | 3&4&5           |
| NP08 | 4          | 4               | 3                       | P/S             | 4&5&6           |
| NP08 | 5          | 5               | 3                       | P/S             | 5&6&7           |
| NP08 | 6          | 6               | 3                       | P/S             | 6&7&8           |
| NP08 | 1          | 1               | 4                       | P/S             | 1&2&3&4         |
| NP08 | 2          | 2               | 4                       | P/S             | 2&3&4&5         |
| NP08 | 3          | 3               | 4                       | P/S             | 3&4&5&6         |
| NP08 | 4          | 4               | 4                       | P/S             | 4&5&6&7         |
| NP08 | 5          | 5               | 4                       | P/S             | 5&6&7&8         |
| NP08 | 1          | 1               | 5                       | P/S             | 1&2&3&4&5       |
| NP08 | 2          | 2               | 5                       | P/S             | 2&3&4&5&6       |
| NP08 | 3          | 3               | 5                       | P/S             | 3&4&5&6&7       |
| NP08 | 4          | 4               | 5                       | P/S             | 4&5&6&7&8       |
| NP08 | 1          | 1               | 6                       | P/S             | 1&2&3&4&5&6     |
| NP08 | 2          | 2               | 6                       | P/S             | 2&3&4&5&6&7     |
| NP08 | 3          | 3               | 6                       | P/S             | 3&4&5&6&7&8     |
| NP08 | 1          | 1               | 7                       | P/S             | 1&2&3&4&5&6&7   |
| NP08 | 2          | 2               | 7                       | P/S             | 2&3&4&5&6&7&8   |
| NP08 | 1          | 1               | 8                       | P/S             | 1&2&3&4&5&6&7&8 |

## ORDERING INFORMATION

| Case Model | Case Orderable Part Number | Description         | Status   |
|------------|----------------------------|---------------------|----------|
| NP08W1A    | 83-108-0001W               | 4000W Case, 1-Phase | Released |

| Module Model | Module Orderable Part Number | Description              | Status   |
|--------------|------------------------------|--------------------------|----------|
| 1S 0005M     | 83-011-0005M                 | 1 Slot 5V Medical, 280W  | Released |
| 1S 0012M     | 83-011-0012M                 | 1 Slot 12V Medical, 400W | Released |
| 1S 0015M     | 83-011-0015M                 | 1 Slot 15V Medical, 400W | Released |
| 1S 0024M     | 83-011-0024M                 | 1 Slot 24V Medical, 400W | Released |
| 1S 0048M     | 83-011-0048M                 | 1 Slot 48V Medical, 400W | Released |

| Orderable Part Number | Series & Parallel Kits (busbars, cables & screws) | Status   |
|-----------------------|---|----------|
| 83-778-002            | 2x 1-slot modules parallel kit                    | Released |
| 83-778-003            | 3x 1-slot modules parallel kit                    | Released |
| 83-778-004            | 4x 1-slot modules parallel kit                    | Released |
| 83-778-005            | 5x 1-slot modules parallel kit                    | Released |
| 83-778-006            | 6x 1-slot modules parallel kit                    | Released |
| 83-778-007            | 7x 1-slot modules parallel kit                    | Released |
| 83-778-008            | 8x 1-slot modules parallel kit                    | Released |
| 83-778-009            | 2x 1-slot modules series kit                      | Released |
| 83-778-010            | 3x 1-slot modules series kit                      | Released |
| 83-778-011            | 4x 1-slot modules series kit                      | Released |
| 83-778-012            | 5x 1-slot modules series kit                      | Released |
| 83-778-013            | 6x 1-slot modules series kit                      | Released |
| 83-778-014            | 7x 1-slot modules series kit                      | Released |
| 83-778-015            | 8x 1-slot modules series kit                      | Released |

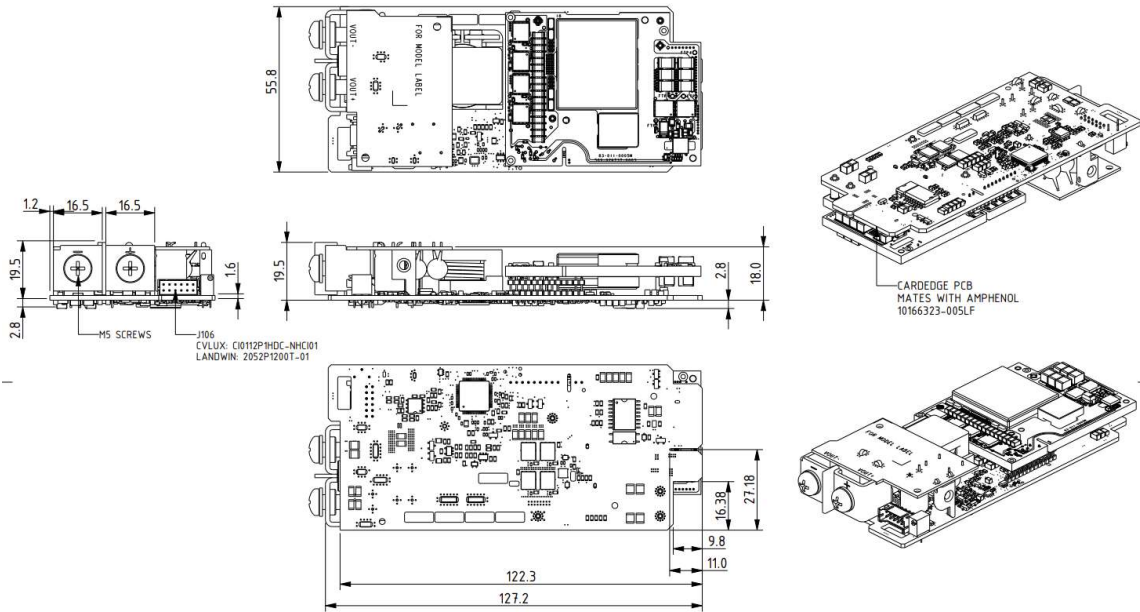
| Orderable Part Number | Signal/Communication Connectors               | Status   |
|-----------------------|---|----------|
| 750-012298-0000       | J1 SIGNAL ASSY,HARN,14,14 WAY COMMS CONNECTOR | Released |
| 83-788-006            | RJ45 MODBUS programming cable                 | Released |



**MECHANICAL DRAWINGS**

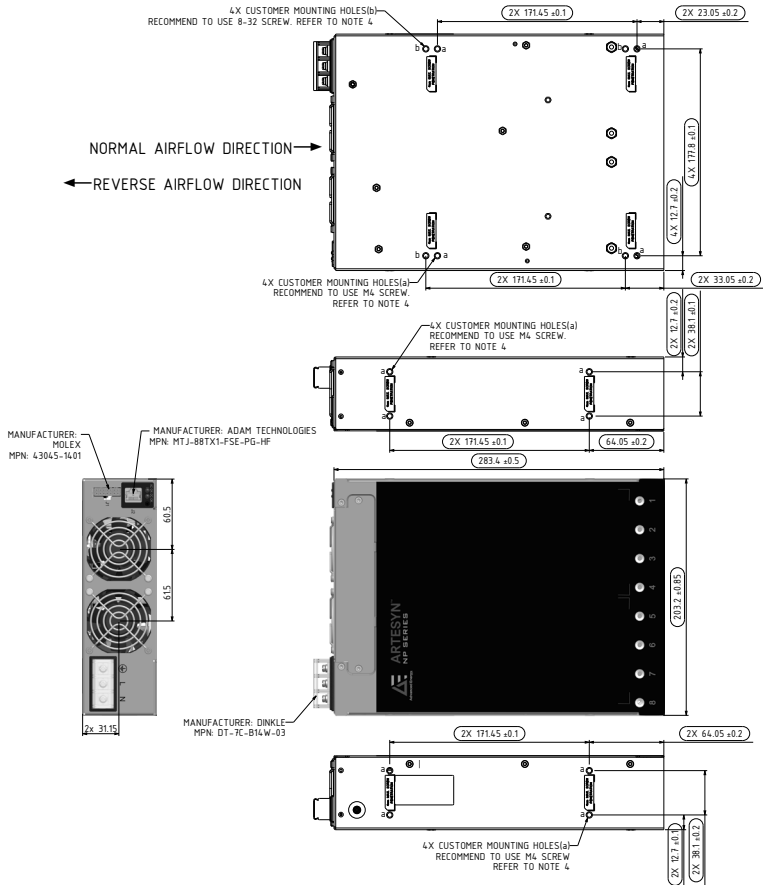
**Slot Single Output Modules (Unit: mm)**

Maximum Module Weight: 0.5lbs (0.226kg)



MECHANICAL DRAWINGS

**NP08W1A Case (Unit: mm)**  
 (Input, Signal Connector and LED Locations)  
 Case Weight: 7lbs (3.2kg)



- NOTES:
1. PARTS MUST BE COMPLETELY ASSEMBLED.
  2. REFER TO BOM FOR UPDATED PART NUMBERS.
  3. UNLESS OTHERWISE SPECIFIED, APPLIED TORQUE SHOULD BE PER WORKMANSHIP STANDARDS 920-000310-0000.
  4. CUSTOMER MOUNTING -3 SIDES M4, BOTTOM ALSO INCLUDES 8-32 MOUNTING HOLES. SCREW MAX. PENETRATION IS 0.155 (4.0mm). SCREW MAX. TORQUE: 5 IN-LBS.(0.57 N-m).

CASE INTERFACE

NP08 Front Panel

(Input, Signal Connector and LED Locations)



| Conditions   | AC OK LED | DC OK LED |
|--|-----------|-----------|
| AC Present, Outputs Inhibited (Case Global Inhibit), Case & Module bootloading | ON        | BLINKING  |
| AC Present, Outputs Inhibited (Module Isolated Inhibit)                        | ON        | OFF       |
| AC Present, Outputs Enabled  | ON        | ON        |
| Output OCP / OVP / Fan Fault   | ON        | OFF       |
| AC Not Present   | OFF       | OFF       |

| Case J1 Control & Signals Connector |             |  |       |             |   |
|-------------------------------------|-------------|--|-------|-------------|---|
| Pin #                               | Signal Name | Description  | Pin # | Signal Name | Description   |
| 1                                   | G_ACOK_E    | Active HIGH signal, indicates the input supply voltage is within operational range of the power supply   | 8     | G_ACOK_C    | Active LOW signal, indicates the input supply voltage is within specified limits  |
| 2                                   | G_PGOOD_E   | Active HIGH signal, indicates the module output is within regulation band  | 9     | G_PGOOD_C   | Active LOW signal, indicates the main output voltage is within specified limits   |
| 3                                   | INH0/EN0    | Global Inhibit / Enable Logic "0" signal functions to turn-off or turn-on all modules simultaneously. Internally pulled-up to COMS_5V via 10k Ohm resistor | 10    | INH1/EN1    | Global Inhibit / Enable Logic "1" signal functions to turn-off or turn-on all modules simultaneously. Internally pulled-down to ISO_RTN via 4.7k Ohm resistor |
| 4                                   | ISO_RTN1    | Isolated Supply Return   | 11    | ISO_RTN1    | Isolated Supply Return  |
| 5                                   | 5V_EXT      | Isolated 5 V Logic Supply  | 12    | ISO_RTN1    | Isolated Supply Return  |
| 6                                   | 5V_STBY     | 5 V Stand-by   | 13    | 5V_STBY_RTN | 5 V Stand-by Return   |
| 7                                   | ISO_RTN1    | Isolated Supply Return   | 14    | ISO_RTN1    | Isolated Supply Return  |

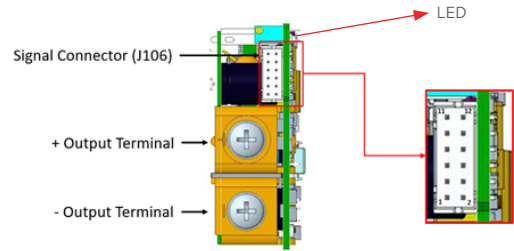
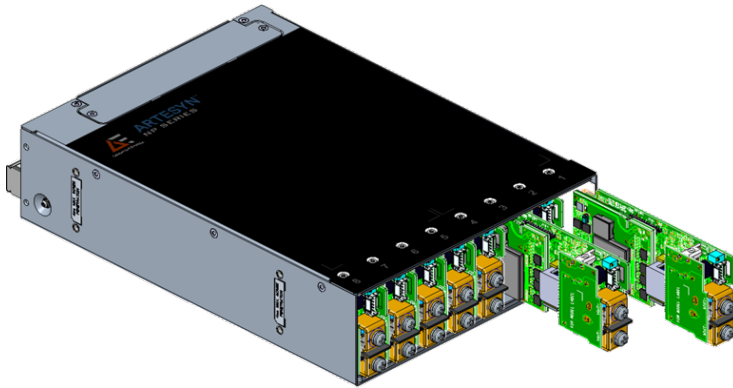
Note - The mating connector is Molex Micro-Fit 3.0 43025 0430251400 14 position.

| Case J2 ConnectedPower Bus |             |   |       |                          |                           |
|----------------------------|-------------|---|-------|--------------------------|---------------------------|
| Pin #                      | Signal Name | Description                                   | Pin # | Signal Name              | Description               |
| 1                          | RS485 A     | Communication lines for RS485 MODBUS protocol | 5     | ISO_RTN1                 | Isolated Supply Return    |
| 2                          | RS485 B     | Communication lines for RS485 MODBUS protocol | 6     | ISO_RTN1                 | Isolated Supply Return    |
| 3                          | ISO_RTN1    | Isolated Supply Return                        | 7     | +5 V_Logic_Supply        | Isolated 5 V Logic Supply |
| 4                          | ISO_RTN1    | Isolated Supply Return                        | 8     | +5 V_Logic_Supply_Return | Isolated Supply Return    |

## MODULE INTERFACE

### NP08 Rear View

Output, Signal Connectors and LEDs



| Module Conditions                    | LED            |
|--------------------------------------|----------------|
| Module Inhibited, Module Bootloading | Blinking Green |
| Module Enabled                       | Solid Green    |
| Module Faulted                       | Solid Red      |
| Module Faulted                       | Solid Amber    |

| Module J106 Signal Connector |                    |  |
|------------------------------|--------------------|--|
| Pin #                        | Signal Name        | Description  |
| 1                            | ISO_M_INHIBIT      | Isolated signal to inhibit the module output   |
| 2                            | ISO_M_INHIBIT_RTN  | Ground reference for ISO_M_INHIBIT signal  |
| 3                            | ISO_POWER_GOOD     | Isolated signal that indicates module output voltage or current is within regulation   |
| 4                            | ISO_POWER_GOOD_RTN | Ground reference for ISO_POWER_GOOD signal   |
| 5                            | 0-10_VI_PROG       | Used to control the output voltage by applying between 0 to 10 V to this pin. This pin will function when the module is configured to Analog Voltage Source (AVS) mode                         |
| 6                            | 0-5_VI_PROG        | Used to control the output voltage by applying between 0 to 5 V to this pin. This pin will function when the module is configured to Analog Voltage Source (AVS) mode                          |
| 7                            | VI_TRIM_EN#        | Connecting this pin to D_RTN will enable the trimmer potentiometer. This pin will function when the module is configured to Digital Voltage Source (DVS) or Digital Current Source (DCS) modes |
| 8                            | D_RTN              | Ground reference for 0-10_VI_PROG & 0-5_VI_PROG signals  |
| 9                            | ISHARE             | 0.4 to 8.4 V voltage signal for active current sharing   |
| 10                           | ISHARE_RTN         | Ground reference for ISHARE signal   |
| 11                           | RS+                | Signal used for module output voltage positive remote sense  |
| 12                           | RS-                | Signal used for module output voltage negative remote sense  |

Note - The mating connector is Landwin 2050S1200 with pin 2053T021V.



For international contact information,  
visit [advancedenergy.com](https://www.advancedenergy.com).

[powersales@aei.com](mailto:powersales@aei.com) (Sales Support)  
[productsupport.ep@aei.com](mailto:productsupport.ep@aei.com) (Technical Support)  
+1 888 412 7832

## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

**PRECISION | POWER | PERFORMANCE | TRUST**

---

Specifications are subject to change without notice. Not responsible for errors or omissions. ©2024 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy®, AE® and Artesyn™ are U.S. trademarks of Advanced Energy Industries, Inc.