



NEOPOWER 380/480

User's Manual
Manuel de l'utilisateur
Anwenderhandbuch
Manuale per l'operatore
Manual del usuario

ATX12V v2.0 Power Supply
Includes Universal Input and Active Power Factor Correction (PFC)

Models: NEO380 and NEO480

NeoPower power supplies include Universal Input and Active PFC. Universal Input allows you to connect NeoPower to any standard power circuit between 100 ~ 240V, without having to worry about setting a voltage switch. Active PFC improves the power factor of the power supply by altering the input current wave shape. This results in increased energy efficiency, reduced heat loss, prolonged life for power distribution and consumption equipment, and improved output voltage stability. NeoPower also includes dual +12V output circuitry, which delivers safer and more reliable output to your system's components. NeoPower also features a variety of industrial-grade protective circuitry: OCP (over current protection), OTP (over temperature protection), OVP (over voltage protection), OPP (over power protection), UVP (under voltage protection) and SCP (short circuit protection).

Note: NeoPower's active PFC circuitry complies with European standard regulation code EN61000-3-2.

NeoPower includes an advanced temperature-response system that provides an optimum balance between noise reduction and cooling. The power supply fan will always run at the lowest speed possible for existing load and conditions. The result? NeoPower will run considerably quieter than power supplies with traditional thermally-controlled fans.

NeoPower can also control the speed of your system case fans. You'll find two dedicated fan connectors (marked "Fan Only") to which you can connect your system case fans. NeoPower's circuitry will then regulate your case fans, further reducing system noise. **Note:** Please don't connect more than three external fans to the "Fan Only" connectors. If you need more cooling power than that, you can connect your case fans to the regular 4-pin peripheral connectors. But that setup won't be as quiet as our recommended setup.

NeoPower also includes a 3-pin fan signal connector. If you connect it to one of the fan connectors on your motherboard, you can monitor the speed of NeoPower's fan through your motherboard BIOS or through the monitoring software that's included with your motherboard.

Note: The speed of the 120mm fan may be as low as 1000 RPM when temperatures are low. At these speeds some motherboards may not be able to properly detect the fan speed and may generate false warning of fan failure. Please refer to your motherboard manual for proper fan monitoring set up.

Power Switch: NeoPower includes a main power switch. Make sure you turn the switch to the ON (I) position before you boot up your computer for the first time. Normally, you won't need to switch to the OFF (O) position, since the power supply includes a soft on/off feature. This lets you turn your computer on and off by using the soft switch on your computer case. If your computer

crashes and you can't shut it down using the soft switch, you can switch the main power to the OFF (O) position.

Advanced Cable Management System – NeoPower features Antec's advanced Cable Management System. It allows you to use only the power cables that you need, thereby reducing clutter and improving airflow inside your case. Inside the package, apart from a power cord, you will find the following (see Photo 1):

NeoPower unit. On the front of the power supply, you'll find some wires. These include:

1. The 24-pin Main Power Connector
2. The 4-pin +12V connector
3. The 3-pin fan signal connector
4. A 2-pin Fan Only socket, which should only be used with the Fan Only cable set (see #6 below)
5. Four 6-pin output sockets, which you can use for your drives and other peripherals

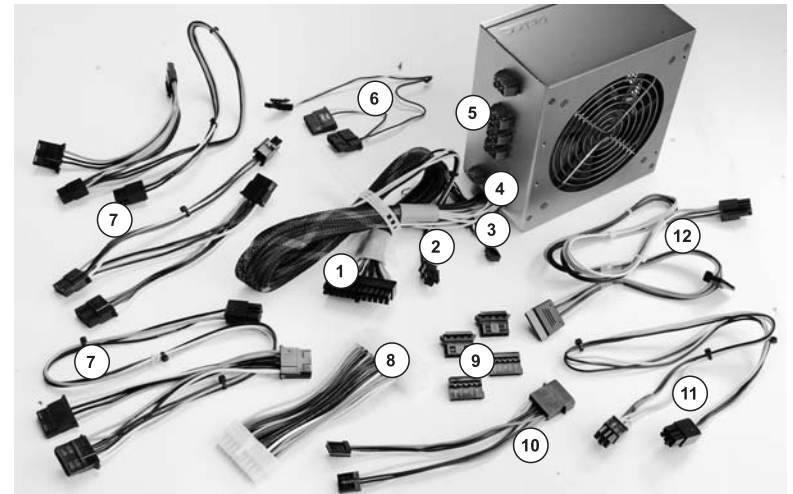


Photo 1

Advanced Cable Management Wire Set.

6. One set of wires with two Fan-Only connectors at one end and one 2-pin PSU connector at the other end
7. Three sets of wires with standard 4-pin Molex peripheral connectors at one end and a 6-pin PSU connector at the other end
8. One 24-pin to 20-pin adapter for the motherboard power connector
9. Four additional connectors, 2 Molex & 2 SATA, for optional use
10. One set of wires with one standard 4-pin Molex peripheral connector at one end and two Floppy power connectors at the other end
11. One set of wires with a 6-pin PCI Express graphic card connector at one end and a 6-pin PSU connector at the other end
12. One set of wires with SATA drive connectors at one end and a 6-pin PSU connector at the other end. **Note:** The SATA connectors include a +3.3V output so you can power next-generation SATA devices.

Installing NeoPower

1. Disconnect the power cord from your old power supply.
2. Open your computer case. Follow the directions provided in your case manual.
3. Disconnect all the power connectors from the motherboard and from the peripheral devices such as case fans, hard drives, floppy drives, etc.
4. Remove the existing power supply from your computer case and replace it with the NeoPower power supply.
5. Connect the 24-pin Main Power Connector and the 4-pin +12V Connector to your motherboard as needed. You will need to use the 24-pin to 20-pin adapter if your motherboard uses a 20-pin connection.
6. In the package, you'll find a set of power supply-to-Molex connectors. (One of the PSU to Molex connectors is shorter than the others.) Connect one of the 6-pin connectors to any of the 6-pin sockets on the power supply. (See Photo 2.)
7. Connect the Molex connector to your hard disk drives or CD-ROM. Repeat as necessary.
8. If you have a SATA drive: In the package, you'll find a power supply-to-SATA connector. Connect the 6-pin connector to any of the 6-pin sockets on the power supply.
9. Connect the SATA connector to your SATA drive. Repeat as necessary.
10. In the package, you'll find a power supply-to-Fan Only connector. Connect the 2-pin connector to the 2-pin socket on the power supply.
11. Connect the Fan-Only connector to your system fans. This will allow NeoPower to control the speed of the fans you've connected. **Note:** Do not connect the Fan-Only connectors to CPU fans.
12. In the package, you'll find a Molex-to-Floppy adapter. Connect it to a Molex connector, and connect a floppy drive if you wish.
13. In the package, you'll find a PCI Express graphic card connector. It is identifiable as the only 6-pin connector with 3 yellow wires and 3 black wires. Connect the 6-pin PCI Express connector to your PCI Express graphic card if needed. **Note:** Please consult the user manual supplied with your PCI Express graphic card for detailed usage instructions.
14. **Optional:** If you'd like to monitor the speed of the power supply fan, connect the 3-pin fan signal connector to one of the fan connectors on your motherboard. **Note:** You don't need to connect the fan signal connector in order for the power supply to work.
15. Connect the power cord to the power supply.



Photo 2

Note: If your motherboard requires a 6-pin AUX Power Connector, please contact Antec Customer Service at (888) 54ANTEC (North America) or +31 (10) 462-2060 (Europe) to purchase the optional AUX Power Connector.

Additional Connectors

The spare connectors are not intended to add additional length to the cable sets, but rather to add additional connectors to the existing cables.

To add a spare Molex or SATA connector to an existing cable:

1. Measure and mark the desired position on the wire set that you want to add the additional connector to.
2. Remove the wire set from the power supply and place it on a flat, firm surface.
3. Place the additional connector under the wires with the cap open as shown. See Photo 3 (Molex) and Photo 4 (SATA).
Note: When connecting an additional SATA Connector, we recommend connecting it to the existing SATA wires (5 wires) so it can incorporate the +3.3V output. This will allow you to power next-generation SATA devices.
4. With one hand holding the connector, use a flat head screwdriver to push wires into the proper notch on the connector as shown in Photo 5.
 - a) Black Wires are Ground
 - b) Yellow Wires are +12V
 - c) Red Wires are +5V
 - d) Orange Wires are +3.3V
5. Close the cap to complete the installation. (See Photo 6.)



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7

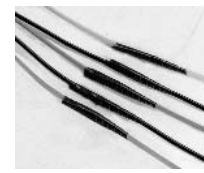


Photo 8

Warning:

1. Please be careful! A connector with incorrectly-aligned wires will damage the device connected to it. It could also damage the power supply, or even your entire system.
2. We STRONGLY recommend that you use a multi-meter to measure the voltage from the newly added connector to make sure it has been done correctly. (See Photo 7.)
3. If you need to remove an additional connector from a cable, please wrap the wire with electrical tape. (See Photo 8.)

Disclaimer: The additional connectors are provided for your convenience. Antec will not be responsible for any damage due to the incorrect connection of the additional Molex or SATA connectors.

Quantity	Part name	Description
1	NEO power supply	includes 24-pin main connector, 4-pin 12V connector, and 3-pin fan monitoring connector with cable installed
1	Molex connector w/ 47 cm cable	includes three Molex connectors
2	Molex connector w/ 77 cm cable	includes three Molex connectors
1	77 cm Serial ATA connector w/cable	includes two Serial ATA connectors
1	40 cm Fan-Only Connector w/cable	includes two Fan-only connectors
1	14 cm Molex to Floppy connectors w/cable	includes one Molex and two floppy connectors
2	Spare Molex connector	4-pin periperal Molex connector
2	Spare Serial ATA connector	15-pin Serial ATA connector
1	10 cm 24pin-to-20pin adapter	24-pin to 20-pin adapter
1	60 cm PCI Express adapter	includes one PCI Express connector
1	Optional Aux connector w/ 48 cm cables*	includes one optional aux connector

*Optional Aux Power Connector w/cables (48 cm long) is available through Antec customer service. Call for availability.

1.0 INPUT:

1.1 VOLTAGE

Range: AC Input 100V-240V \pm 10%

1.2 FREQUENCY

47Hz ~ 63Hz

1.3 CURRENT

NEO380	6A
NEO480	8A

1.4 POWER FACTOR VALUE

0.90 (min.)

1.5 INRUSH CURRENT

	115V(max)	230V(max)
NEO380	40A	80A
NEO480	60A	100A

at 25°C cold start

1.6 POWER EFFICIENCY

70% (min.) at full and typical loads, 115V/230Vac 60/50Hz
60% (min.) at light load

2.0 OUTPUT:

VOLTAGE	+5V	+12V1	+12V2	+3.3V	-12V	+5Vsb
MAX. LOAD						
NEO380	35A	16A	13A	28A	1.0A	2.0A
NEO480	38A	18A	15A	30A	1.0A	2.0A
MIN. LOAD	0.3A	0.4A	0.4A	0.3A	0A	0A
REGULATION	\pm 3%	\pm 3%	\pm 3%	\pm 3%	\pm 5%	\pm 5%
RIPPLE& NOISE (mV)	50	120	120	50	120	50

NOTE:

1. The continuous max. DC output power

	Total Max. Output	+5V, +12V & +3.3V max. Output
NEO380	380W	360W
NEO480	480W	460W

- Ripple & noise test condition: AC 230V/115V 50/60Hz full load
- Peak power and current loading shall be supported for a minimum of 1 second.
- 12V combined current.

	12V1 + 12V2
NEO380	26A
NEO480	32A

5. Peak +12 V1 current shall be supported for a minimum of 0.5 seconds.

2.1 HOLD-UP TIME:

20msec (min.) at full load. AC input 115V/230V, 57Hz/47Hz

2.2 LOAD TRANSIENT RESPONSE (STEP LOAD)

Step load changes of up to 20% of full load, while other loads remains constant within the rating. The load waveform shall be a square wave with the slope of the rise and fall at 1A/ μ sec and the frequency shall be from 10Hz to 1 kHz. The DC output voltage will stay within regulation during the step load changes.

2.3 OVERSHOOT

During power supply start-up, the output voltages shall be less than 10% of the nominal output voltage. Example, the +5V shall not exceed +5.5V.

3.0 PROTECTION:

If the power supply is latched into shutdown stage due to protection circuit activity, the power supply shall return to normal operation only after the fault

has been removed and reset PS-ON for a minimum of 1 second. Then it will turn on again.

3.1 OVER CURRENT PROTECTION

	Over current (Sense level)					
	+5V		+12V ₁ & +12V ₂		+3.3V	
NEO380	40A Min.	52A Max.	19A Min.	26A Max.	34A Min.	45A Max.
NEO480	44A Min.	56A Max.	24A Min.	26A max.	36A Min.	47A Max.

3.2 OVER VOLTAGE PROTECTION

Sense level	Over Voltage	
+12V ₁ &+12V ₂	13.3V Min.	14.3V Max.
+5V	5.7V Min.	6.2V Max.
+3.3V	3.7V Min.	4.1V Max.

3.3 SHORT CIRCUIT PROTECTION

Short circuit protection is used to protect the components and the power supply, if a short circuit happens on a component the current goes to ground.

3.4 UNDER VOLTAGE PROTECTION

Sense level	Under Voltage	
+12V ₁ &+12V ₂	9.5V Min.	10.5V Max.
+5V	4.1V Min.	4.47V Max.
+3.3V	2.55V Min.	2.83V Max.

3.5 OVER TEMPERATURE

The power supply includes an over-temperature protection sensor, which can trip and shutdown the power supply at 100°C. Such an overheated condition is typically the result of internal current overloading or a cooling fan failure.

3.6 OVER LOAD PROTECTION

Overload currents to output rail will cause the output trip before they reach or exceed 110% ~ 160% for protection, the overload currents should be ramped at a minimum rate of 10 A/s starting from full load.

4.0 TIME SEQUENCE:

- T1 Power-On Time (500msec. max.)
- T2 Rise-time (20msec. max.)
- T3 Power Good Delay Time (100msec. < t3 < 500msec.)
- T4 Power Fail Delay Time (1msec. min.)
- T5 Hold-Up time (20msec. min.)

115V/230V(FULL LOAD):1mS minimum

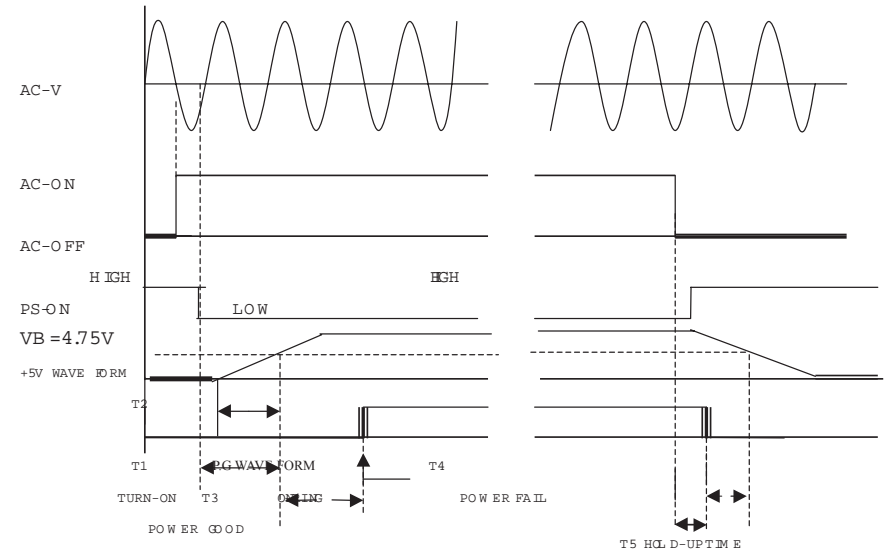


FIGURE 1

4.1 REMOTE ON/OFF CONTROL

The power supply is turned on/off by TTL signal.

Active Low	Power Supply turn on
Active High	Power Supply turn off

Remote On/Off Signal Characteristics

PS-ON	MIN	MAX
Vil input low voltage		0.8V
Iil, input low current, Vin = 0.4V		-1.6mA
Vih, input High voltage, Iin = -200uA	2.0V	
Vih open circuit, Iin = 0		5.25V

4.2 AUXILIARY +5Vsb

This power supply is specifically equipped with an independent stand-by +5V output current, 2.0A max. This output will always provide +5V except when the AC line is cut off.

4.3 AUTO RESTART

If the power supply's output dropped out of the regulation caused by AC line Voltage, the power supply will automatically resume normal operation only after the AC line voltage returns to the specified operating range.

5.0 ENVIRONMENT:

- 5.1 Ambient Operation temperature 0°C to +50°C
- 5.2 Ambient operation relative humidity 20% to 85%
- 5.3 Ambient storage temperature -40°C to +70° C
- 5.4 Ambient storage relative humidity 10% to 95%

6.0 CE REQUIREMENTS:

6.1 EMI

Meets FCC PART15 CLASS B

6.2 SAFETY REQUIREMENTS

Meets UL 1950, Third Edition

Meets EN 60950:1992 +A1:1993 +A2:1993 +A3:1995 +A4:1997 +A11:1997

Meets IEC 60950:1991 +A1:1992 +A2:1993 +A3:1995 +A4:1996

7.0 MTBF:

80,000 hours at 25°C (demonstrated)

8.0 DC CONNECTOR AND CASE REQUIREMENTS

8.1 BASEBOARD CONNECTOR

ATX MAIN CONNECTOR (P1)

Pin	Signal	Color	Pin	Signal	Color
1	+3.3VDC	Orange	13	+3.3VDC [13] [+3.3 V default sense]	Orange [Brown]
2	+3.3VDC	Orange	14	-12VDC	Blue
3	COM	Black	15	COM	Black
4	+5VDC	Red	16	PS_ON#	Green
5	COM	Black	17	COM	Black
6	+5VDC	Red	18	COM	Black
7	COM	Black	19	COM	Black
8	PWR_OK	Gray	20	Reserved	N/C
9	+5VSB	Purple	21	+5VDC	Red
10	+12 V1DC	Yellow	22	+5VDC	Red
11	+12 V1DC	Yellow	23	+5 VDC	Red
12	+3.3 VDC	Orange	24	COM	Black

HOUSING: 24 PIN MOLEX MINI-FIT JR. PN#39-01-2240 OR EQU
TERMINAL: MOLEX 44206-0007 OR EQU

PERIPHERAL CONNECTOR

HOUSING: JMT JP1120-4

HOUSING: WST P4-A10202 OR EQU

TERMINAL: JMT J1120BS-2

TERMINAL: WST A10209BS-2

FLOPPY DRIVE CONNECTOR

HOUSING: JMT JP11635-4

HOUSING: WST P4-I25001 OR EQU

TERMINAL: JMT J11635BS-2

ERMINAL: WST I25001BS-2 OR EQU

Pin	Signal	18AWG (Wire)	Pin	Signal	20AWG (Wire)
1	+12V1DC	Yellow	1	+5VDC	Red
2	COM	Black	2	COM	Black
3	COM	Black	3	COM	Black
4	+5VDC	Red	4	+12V1DC	Yellow

+ 12V POWER CONNECTOR (P12)

HOUSING: MOLEX 39-01-2040 OR EQU

TERMINAL: MOLEX 39-29-9042 OR EQU

Pin	Signal	18AWG (Wire)
1	COM	Black
2	COM	Black
3	+12V2DC	Yellow
4	+12V2DC	Yellow

FAN SPEED MONITORING CONNECTOR

Pin	Signal	24AWG (Wire)
1	SENSOR	Blue
2	Empty	Reserved
3	COM	Black

SERIAL ATA POWER CONNECTOR

HOUSING: MOLEX 675820000 OR EQU

TERMINAL: MOLEX 675810000 OR EQU

Pin	Signal	18AWG(Wire)
1	+12V1DC	Yellow
2	COM	Black
3	+5 VDC	Red
4	COM	Black
5	+3.3 VDC	Orange

PCI EXPRESS CONNECTOR

HOUSING : MOLEX 455590002 OR EQU

TERMINAL : MOLEX 455580002 OR EQU

Pin	Signal	18AWG(Wire)
1	12V1DC	Yellow
2	12V1DC	Yellow
3	12V1DC	Yellow
4	COM	Black
5	COM	Black
6	COM	Black



Antec Quality 3-Year parts and labor warranty (AQ3)
See details at: <http://www.antec.com/warranty.html>