Ultra-High Efficiency Power supply as a Green Product

The Tough and Reliable Quality and Performance meet the Highest Level

80 PLUS compliant

H series (High Efficiency) Power Supply Features

Recently, new efforts are conducted and new laws are imposed to reduce the load on the environment for various industrial products. Power supplies are also required higher environmental performances such as ErP directive which requires the maximum power consumption of electronic devices in standby mode to be less than 0.5W or 80PLUS which requires 80% or higher efficiency. In such a requirement, the 80PLUS may get attention of users primarily. High efficiency power supplies are easy to make a good image on the point of energy saving. Therefore many manufacturers develop high efficiency and low price power supplies and nowadays, there are 80PLUS Platinum certified power supplies which have 90% or higher efficiency in the market.

However, is the only efficiency the factor of good power supply? The power supply is a fundamental part of the application and most important component for safety. In other words, power supply should not be broken. Since the design concept of Nipron is “unbreakable”, we put a lot of effort into the protection circuit and components. Certainly when there is no malfunction, it might not be necessary function. Conversely, low cost power supplies are often cut such protections and broken in only a few years due to their cheap components. Once power supply is broken, it becomes the load of environment as industrial waste and replacement cost is needed. In the worst case, end-user may have the amendment problem of the downtime caused by the device shut down or the failure of application itself.

The Equipment quality depends on that of power supply. Based on the high quality / high reliability industrial design, Nipron H-series has the specification which meets current trend. The specifications that meet the need of our customers should be found owing to H-series with a comprehensive line of power supplies. You will see the special features of H-series here.

HPCSA-1000P-E2S

Continuous Max.: 822W
Peak Power: 1000W

HPCSA-570P-X2S

Continuous Max.: 400W
Peak Power: 570W

HNSP9-520P series

Continuous Max.: 400W
Peak Power: 520W

HPCSF-400P-X2S

Continuous Max.: 310W
Peak Power: 400W

HPC1U-400P-X2S

Continuous Max.: 305W
Peak Power: 400W

Nonstop power supply HNSP4-1000P is under development!!

Energy saving by complying with ErP directive (Lot6)

In the ErP directive many products such as television, computer, and copier are classified to each “Lot”. Not only individual products, but some “lot” are related to multiple products. H-series power supply is compliant with Lot6 in ErP which defines standby power.

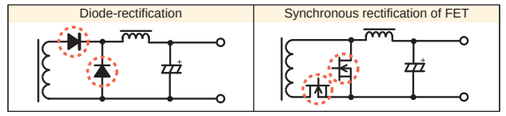
The standby power regulation (Lot6) requires the maximum power consumption of electronic devices in standby mode (at *1 OFF mode and *2 Standby mode) to be less than 0.5W.

*1 OFF mode: only AC is input
*2 Standby mode: only input reactivate function, or input reactivate function, only indicate reactivate functions available

80 PLUS compliant, high efficiency power supply

80 PLUS is a certification program of Ecos Consulting in USA for power saving of electric equipments. Requires more than 80% of efficiency at 115 VAC input and 20%, 50%, 100% rated load. There are some grades 80 PLUS, 80 PLUS BRONZE, 80 PLUS SILVER, 80 PLUS GOLD, 80 PLUS PLATINUM by efficiency.

Synchronous rectification circuit equipped



If loaded current is 50A, diode drop voltage will be 0.5V and FET drop voltage will be 0.04V. FET is much smaller than diode and can save power loss. Total amount of power loss will be 25W (0.5V x 50A) with diode and 2W (0.04A x 50A) with FET.

Efficiency actual measurement

(Examples of actual measurement)

at 50% load

Model	at 115VAC	at 240VAC
HPCSA-1000P-E2S	88.6%	90.1%
HPCSA-570P-X2S	85.7%	87.7%
HNSP9-520P-S20-H1V	85.5%	87.2%
HPCSF-400P-X2S	87.5%	89.0%
HPC1U-400P-X2S	85.9%	87.6%
Competitor’s equivalent	71.5%	73.6%

H series Power Supply Products Line-up 1

New HPC1U-400P-X2S

80PLUS & ErP Directive Compliant.
Low Power Consumption and
High Efficiency 1U Size Power Supply!

Standby Power
(Examples of actual measurement)
100VAC: 0.08W
230VAC: 0.08W

Continuous Max. 305W
Peak Power 400W

- 80PLUS BRONZE approved 1U size power supply
- High efficiency with synchronous rectification circuit
- Min. load current is 0A for all outputs.
- By building in the thermal-sensing variable speed fan, noise reduction can be realised.

■Safety standard / Approval

Safety standard / Approval	UL	CSA	EN	CE	CCC
Reliability Grade	HFA	FA	HOA	OA	

■General Specification

AC input	85 - 264V (worldwide range, PFC mounted)				
Rated Voltage	+3.3V	+5V	+12V	-12V	+5VSB
Max. Current / Power	16A	16A	25A	0.5A	1.5A
	90W		300W	6W	7.5W
	300W				
	305W				
Peak current / peak power (5 sec max.)	20A	20A	30A	0.5A	2A
	120W		360W	6W	10W
	390W				
	400W				
Min. current	0A	0A	0A	0A	0A
Dimensions	100(W)×41(H)×190(D)mm				

New HPCSF-400P-X2S

80PLUS & ErP Directive Compliant.
Low Power Consumption and
High Efficiency SFX Size Power Supply!

Standby Power
(Examples of actual measurement)
100VAC: 0.08W
230VAC: 0.08W

Continuous Max. 310W
Peak Power 400W

- 80PLUS BRONZE approved SFX power supply
- High efficiency with synchronous rectification circuit
- Min. load current is 0A for all outputs.
- By building in the thermal-sensing variable speed fan, noise reduction can be realised.
- Medical standard IEC60601-1 3rd complied design

■Safety standard / Approval

Safety standard / Approval	UL	CSA	EN	CE	CCC
Reliability Grade	HFA	FA	HOA	OA	

■General Specification

AC input	85 - 264V (worldwide range, PFC mounted)				
Rated Voltage	+3.3V	+5V	+12V	-12V	+5VSB
Max. Current / Power	16A	16A	25A	0.5A	2A
	90W		300W	6W	10W
	300W				
	310W				
Peak current / peak power (5 sec max.)	20A	20A	30A	0.5A	3A
	120W		360W	6W	15W
	385W				
	400W				
Min. current	0A	0A	0A	0A	0A
Dimensions	125(W)×63.5(H)×125(D)mm				

HPCSA-1000P-E2S

80PLUS & ErP Directive Compliant.
Low Power Consumption,
High Efficiency and Large Capacity
ATX Power Supply with 1000W Output Peak !

Standby Power
(Examples of actual measurement)
100VAC: 0.20W
230VAC: 0.28W

Continuous Max. 822W
Peak Power 1000W

- 80PLUS SILVER approved ATX power supply
- High efficiency with synchronous rectification circuit
- Min. load current is 0A for all outputs.
- By building in the thermal-sensing variable speed fan, noise reduction can be realised.
- Medical standard IEC60601-1 3rd complied design
- 85 mm height mountable into 2U dimension chassis

■Safety standard / Approval

Safety standard / Approval	UL	CSA	EN	CE	CCC
Reliability Grade	HFA	FA	HOA	OA	

■General Specification

AC input	85 - 264V (worldwide range, PFC mounted)							
Rated Voltage	+3.3V	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+5VSB
Max. Current / Power	25A	25A	18A	18A	18A	18A	0.4A	3A
	207.5W		792W				4.8W	15W
	822W							
Peak current / peak power (5 sec max.)	30A	30A	25A	25A	25A	25A	0.6A	4A
	249W		1000W				7.2W	20W
	1000W							
Min. current	0A	0A	0A	0A	0A	0A	0A	0A
Dimensions	150(W)×85(H)×190(D)mm							

H series Power Supply Products Line-up 2

HNSP9-520P series

80PLUS BRONZE Approved.
Low Power Consumption and
High Efficiency Nonstop Power Supply Available!

Standby Power
(Examples of actual measurement)

100VAC: 0.55W
230VAC: 0.65W

Continuous Max. 400W
Peak Power 520W

- With backup function, it protects your PC from blackout.
- By connecting the additional output unit, +24V or +48V can be output. (Refer to the right page for detail information.)
- 80PLUS BRONZE approved
- Min. load current is 0A for all outputs.
- By building in the thermal-sensing variable speed fan, noise reduction can be realised.
- High efficiency with synchronous rectification circuit

■Safety standard / Approval

Safety standard / Approval	UL	CSA	EN	CE	CCC
Reliability Grade	HFA	FA	HOA	OA	

■General Specification

AC input	85 - 264V (worldwide range, PFC mounted)				
Rated Voltage	+3.3V	+5V	+12V	-12V	+5VSB
Max. Current / Power	20A	24A	30A	0.5A	2A
	150W		360W	6W	10W
	390W				
	400W				
Peak current / peak power (5 sec max.)	30A	30A	35A	0.5A	2.5A
	200W		420W	6W	12.5W
	507.5W				
	520W				
Min. current	0A	0A	0A	0A	0A
Dimensions	150(W)×86(H)×140(D)mm				

Series Line-up	
HNSP9-520P-S20-H1V	With RS232C signal unit
HNSP9-520P-S20-H2V	With buzzer unit
HNSP9-520P-S20-H6V	With USB signal unit
HNSP9-520P-S20-H0V	No signal unit

HNSP9-520P series Applicable Battery Package	
BS11A-P24/2.3L(K)	5-inch bay fixed type, Lead battery
RBS02A-P24/2.3L(K)	5-inch bay fixed, removable type, Lead battery
BS12A-P24/5.0L	5-inch bay 2-unit fixed type, High capacity lead battery
BS10A-H24/2.0L	5-inch bay fixed type, Ni-MH battery
BS22A-H24/2.0L	

Intelligence Battery Pack "Mi-Pack II Manager"

Battery pack
BS22A-H24/2.0L

Application software
Mi-Pack II Manager

It always monitors battery status and lifetime to display the error message with alarm when battery package has certain anomaly or has a short lifetime. Also, notification emails can be delivered at once. The emails are various and can be set which data is delivered so that it is monitored from separated area.

HPCSA-570P-X2S

80PLUS & ErP Directive Compliant.
Low Power Consumption and
High Efficiency ATX Power Supply !

Standby Power
(Examples of actual measurement)

100VAC: 0.08W
230VAC: 0.11W

Continuous Max. 400W
Peak Power 570W

- 80PLUS BRONZE approved
- By connecting the additional output unit, +24V or +48V can be output. (Refer to the right page for detail information.)
- High efficiency with synchronous rectification circuit
- Min. load current is 0A for all outputs.
- By building in the thermal-sensing variable speed fan, noise reduction can be realised.
- Double-sided through hole PCB suitable for industrial use.

■Safety standard / Approval

Safety standard / Approval	UL	CSA	EN	CE	CCC
Reliability Grade	HFA	FA	HOA	OA	

■General Specification

AC input	85 - 264V (worldwide range, PFC mounted)				
Rated Voltage	+3.3V	+5V	+12V	-12V	+5VSB
Max. Current / Power	20A	24A	30A	0.5A	2A
	150W		360W	6W	10W
	390W				
	400W				
Peak current / peak power (5 sec max.)	30A	30A	35A	0.5A	3A
	200W		420W	6W	15W
	555W				
	570W				
Min. current	0A	0A	0A	0A	0A
Dimensions	150(W)×86(H)×140(D)mm				

Dedicated to
HNSP9-520P series / HPCSA-570P series

+24V/+48V Additional output unit

One ATX power supply can output +24V or +48V
which is not supplied by general ATX power supply!!
It is not necessary to use another single output power supply.

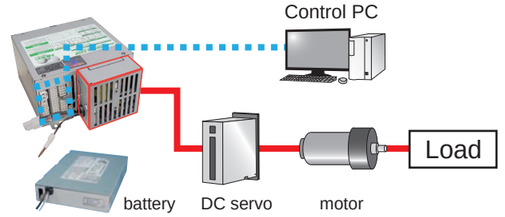
Only connecting onto the rear side of ATX power supply, +24V or +48V output can be added.

24V type
AU-300P-24
Continuous Max.: 200W
Peak Power: 300W

48V type
AU-200P-48
Continuous Max.: 200W
Peak Power: - W

Application example

Machine tool etc



Connected with a battery,
it can easily backup a whole application.*1

300W peak output*2 is optimized for motor load!

*1 Only using HNSP9-520P series *2 Only for AU-300P-24

Features

High efficiency

Both HNSP9-520P and HPCSA-570P are 80PLUS compliant, high efficiency power supply. They are more efficient than using the combination of ATX power supply and single output power supply.

Large output capacity: Rated 200W / Peak 300W

Large output capacity: Rated 200W / Peak 300W (24V type). It is enough rated/peak power as a driving power supply.

Insulated from ATX output

Since the additional output unit is insulated, even if connected with large noise equipment such as a motor, PC works safety without adverse impact.

The downsizing of application

With the additional output unit, one power supply can output ATX, and 24V or 48V. Since it is not necessary to use both ATX and single output power supplies, the downsizing of application will be achieved.

Blackout backup

HNSP9-520P series has backup function including additional output unit. It gives safer backup system of whole application including driving part.

The merit of additional output unit

- Large space for two units
- Generate more heat due to inefficient

All solved

Only one unit

- Space saving
- High efficiency
- Heat reduction
- Blackout backup

The additional output unit mounted model Output specification

Model: HNSP9-520P-S20-H0V-24V (with AU-300P-24)

Rated Voltage	+3.3V	+5V	+12V	-12V	+5VSB	+24V
Max. Current / Power	20A	24A	30A	0.5A	2.0A	8.3A
	150W		360W	6W	10W	200W
	390W					
	400W					
Peak current / peak power (5 sec max.)	30A	30A	35A	0.5A	2.5A	12.5A
	200W		420W	6W	12.5W	300W
	507.5W					
	580W					
Min. current	0A	0A	0A	0A	0A	0A
Dimensions	150(W)×86(H)×175(D)mm					

Model: HPCSA-570P-X2S-48V (with AU-200-48)

Rated Voltage	+3.3V	+5V	+12V	-12V	+5VSB	+48V
Max. Current / Power	20A	24A	16.5A	0.5A	2.0A	4.0A
	150W		198W	6W	10W	192W
	199.1W					
	305.1W					
Peak current / peak power (5 sec max.)	30A	30A	35A	0.5A	3.0A	4.0A
	200W		420W	6W	15W	192W
	555W					
	570W					
Min. current	0A	0A	0A	0A	0A	0A
Dimensions	150(W)×86(H)×175(D)mm					

- Please contact us if you have a requirement for other additional output units than +24V or +48V.
- +48V type is also scheduled to have peak output. Please contact us for the detail.
- The safety standards are during application or scheduled to be approved. Please contact us for the detail.