


Excellent & Powerfull Cost Performance!

AC to DC single output SW' power supply GPSA series

Function Various



1. Medical standard compliant
2. Models lined up suitable for motor-drive High power with Peak current
3. Coating specification
4. Convenient size for rack mounting
5. 12V standby equipped
6. Blackout detection signal equipped (Backup at blackout is available for 24V output type)
7. High efficiency power supply corresponding to environment preservation

GPSA-360/500P series GPSA-750/900P series

1. for Medical Use

GPSA series is AC to DC single output switching power supply compliant with Medical standard, UL/CSA/EN60601-1 with low leakage current and meets Conducted emission Class B.

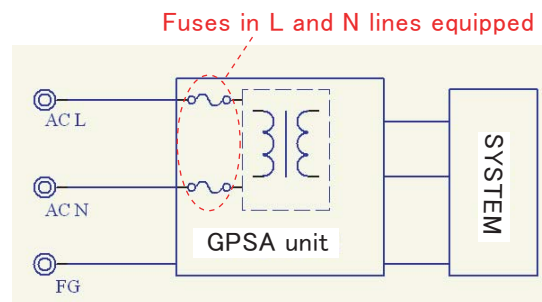
UL/CSA/EN 60601-1 acquisition plan

Plan	Model	Output () is Peak power at 100V AC			Speed Control Fan
		Voltage	Current	Power	
2009, April	GPSA-360-12-TP	12V	30(40)A	360(480)W	○
	GPSA-750-12-TP		56(70)A	672(840)W	○
	GPSA-360-24-TP	24V	15(20.8)A	360(500)W	○
	GPSA-750-24-TP		30(37.5)A	720(900)W	○

※ Peak power available with thermal speed control fan (To be upgraded after existing models; Further information will be noticed separately.)

With GPSA series adopted, you need no primary fuses nor circuit-breakers at medical use applications as the series already has equipped two fuses in L (Live) and N (Neutral) lines.

Besides, additional insulation circuit is not required as the series has Double/Reinforced insulation system.



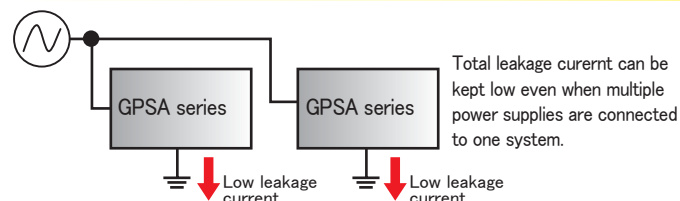
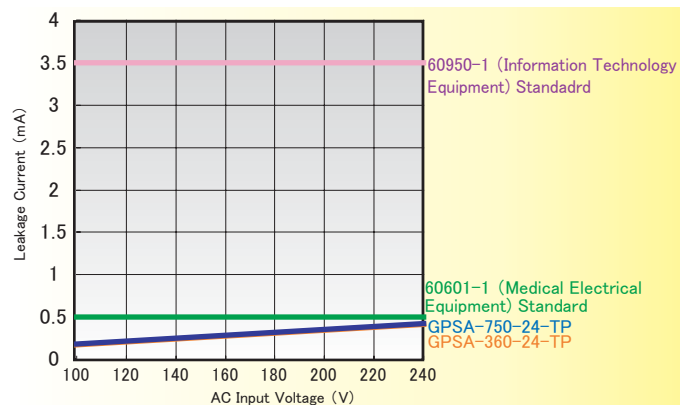
Low Leakage Current Specification

GPSA series meets the leakage current of less than or equal to 0.5mA at nominal input voltage that Medical standard IEC60601-1 requires.

In the case of multiple power supplies connected to one system, total leakage current of the system can be kept low when GPSA series is used. Also, using GPSA series as intermediate bus, low leakage current system can be built with D/C converters after the power supply.

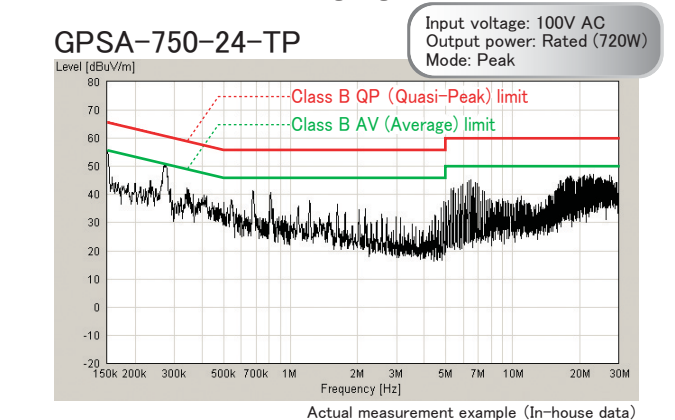
Actual measurement example at rated load

Input voltage	GPSA-360-24-TP	GPSA-750-24-TP
AC 100V	0.17mA	0.18mA
AC 240V	0.41mA	0.42mA



Conducted Emission Class B compliant

GPSA series meets Conducted Emission Class B requirement even with low leakage current specification unlike other power supplies that also achieve low leakage current while victimizing Conducted Emission (or inviting large noise).



2. Models lined up suitable for motor-load High power with Peak current

Models lined up suitable for motor-load with regenerative voltage detection HV signal output (under development)

Regenerative voltage detection signal equipped	Model	Voltage	Rated Current	Output Peak current	
				at AC 100V	at AC 200V
	GPSA-500P-24-TP	24V	15.0A	20.8A	25.0A
	GPSA-900P-24-TP		30.0A	37.5A	50.0A
	GPSA-500P-30/36-TP	30/36V	12.0/10.0A	16.6/13.8A	20.0/16.6A
	GPSA-900P-30/36-TP		24.0/20.0A	30.0/25.0A	40.0/33.3A
	GPSA-500P-42/48-TP	42/48V	8.5/7.5A	11.9/10.4A	14.2/12.5A
	GPSA-900P-42/48-TP		17.1/15.0A	21.4/18.7A	25.0/20.0A

GPSA-500P series: Rated power 360W, Peak power: 500W at AC 100V/600W at AC 200V
GPSA-900P series: Rated power 720W, Peak power: 900W at AC 100V/1200W at AC 200V

For peak power at 100Vac, 120% of rated power can be derived for 5 seconds, and more than that at 200Vac.

Peak power is applied to all GPSA series as well.

(GPSA-360/750 series will be upgraded after existing models to strengthen functions. Further information will be noticed separately.)

3. Coating specification

All GPSA series will have PCBs COATED.

(To be upgraded after existing models to strengthen functions.)

Further information will be noticed separately.



PCBs coated prevent power supplies from critical troubles such as short circuit inside caused by dust in heavy-duty industrial environment, and secure customer's system.

4. Convenient size for rack mounting

GPSA series employs convenient size suitable for 19 inch rack mounting.

For GPSA-360/500P, 1U Width and 3U Height

For GPSA-750/900P, 2U Width and 3U Height

Also, battery package employs 1U in width and 3U in height available to 1U, 2U, and 3U rack mounting.

Battery package [BS14A-H24/2.5L]

Dimensions (W × H × D)
GPSA-360/500P: 41 × 128 × 230 mm
GPSA-750/600P: 82 × 128 × 235 mm
BS14A-H24/2.5L: 41 × 128 × 211 mm

Image at 3U rack mounting

Internal structure (GPSA-750)

- Feedback noise measures FCC-B, VCCI-B, EN55022-B, and CISPR22-B compliant Medical standard EN60601-1 acquired Low leakage current of 0.21mA or less at AC 100V One fuse on each L and N line
- Cooling fan Two long-life ball-bearing fans are equipped (100,000 hrs at 40°C, Japanese make) For fan alarm, fan speed monitoring output is delivered from each fan.
- Electrolytic capacitors Japanese make 2000hrs or longer at 105°C adopted in every place
- Electronics components Major Japanese manufacturers' products adopted

Sequence output unit (separated)
Changing this board allows each signal isolated or its polarity reversed (FAN M, PS.ON#, PWR.OK, AC FAIL, BATT LOW).
Output is connector type and cable can be customized.

Neat layout design
Excellent for cooling and prevention of components interference

5. 12V standby output equipped

This standby 12VSB supplies 0.3A, real ability is approx. 0.5A, as auxiliary power supply.

For example, we have track record such as 24V for motor drive and 12VSB as power supply used for interface of LAN and USB for finance terminal equipments.

Model	Standby output
All GPSA series	+12VSB (auxiliary power supply) 0.3A

※1 Real ability is up to approx. 0.5A.

※2 0.1A is upper limit at backup operation during blackout.

6. Blackout detection signal equipped (Backup operation is available for 24V output unit.)

All GPSA series is equipped with blackout detection signal. Cost to produce detection unit can be eliminated.

For 24V output type, in addition, backup operation at blackout is available.

Signal	Detection level	Detection delay time	Output
Blackout detection signal (AC FAIL)	AC 80V or less	20 to 40ms	Open collector

Backup operation at blackout is available for 24V output type Uninterruptible with battery package connected (24V)

With Ni-MH battery packages (BS14A-H24/2.5L) connected in parallel, up to 720W (3 battery packages in parallel) can be backed up.

Up to approx. 500W can be backed up with 2 battery packages in parallel.

Battery connection cable is connector system on both of power supply side and battery package side so that cable length can be easily customized.

Easy customization of cable length

Communication connector with battery package

Various Input/Output signal connector (PS.ON#, PWR.OK, FAN_M, AC FAIL, BATT LOW)

Battery package connection connectors (can be used as output connector when battery package is not connected.)

Output voltage adjustable resistor

LED equipped for visual check (turn-on at normal operation)

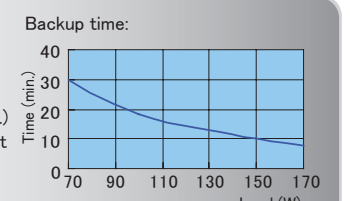
Connection connector between power supply and battery package

BS14A-H24/2.5L

Battery package

Model: BS14A-H24/2.5L
Battery: Ni-MH battery
Output: 24V 170W (Peak 240W 10s max.)
Backup time: See the graph on the right

※ Backup time is just a guideline at first use, not guaranteed.



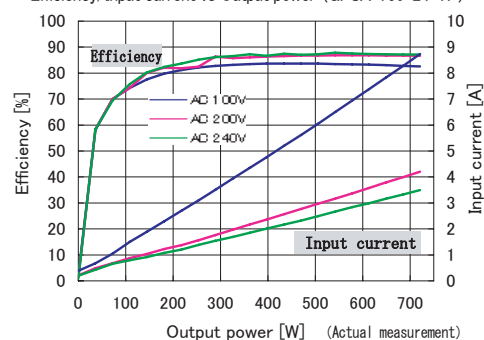
7. High efficiency power supply corresponding to environment preservation

Efficiency comparison with competitor's equivalent (actual measurement)

	Competitor's 600W	GPSA-750-12
AC 90V (at 12V 30A)	77.3%	82.1%
AC 100V (at 12V 30A)	77.7%	82.6%
AC 200V (at 12V 30A)	80.0%	85.0%
AC 240V (at 12V 30A)	80.9%	85.6%
AC 90V (at 12V 50A)	77.5%	81.3%
AC 100V (at 12V 50A)	78.3%	82.0%
AC 200V (at 12V 50A)	81.6%	84.9%
AC 240V (at 12V 50A)	82.5%	85.5%

Nipron contributes Global environmental preservation with high efficiency (80% or more) design policy to reduce CO₂.

Efficiency/Input current vs Output power (GPSA-750-24-TP)



Other features

Silence

GPSA series controls fan speed by temperature detection inside the power supply.

Thus, the fan speed slows at light load inviting silence. (To be upgraded to strengthen functions after existing models; further information will be noticed separately.)

Series connection

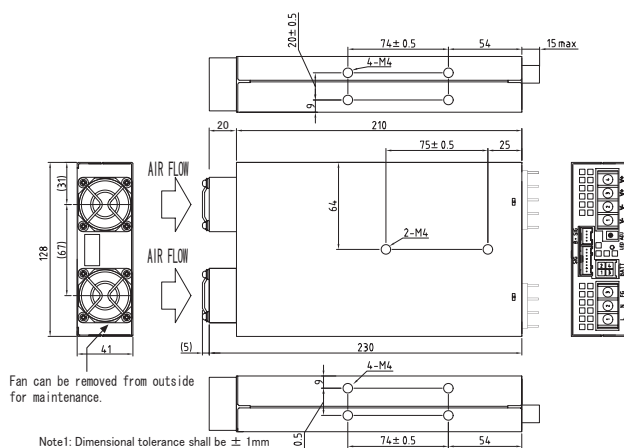
Series connection is acceptable. Disparate output voltages can be connected in series. (Ex. series connection of 12V and 24V type, etc.)

Remote ON/OFF function equipped.

Output ON/OFF control is also available by Remote ON/OFF signal (PS_ON).

Dimensions

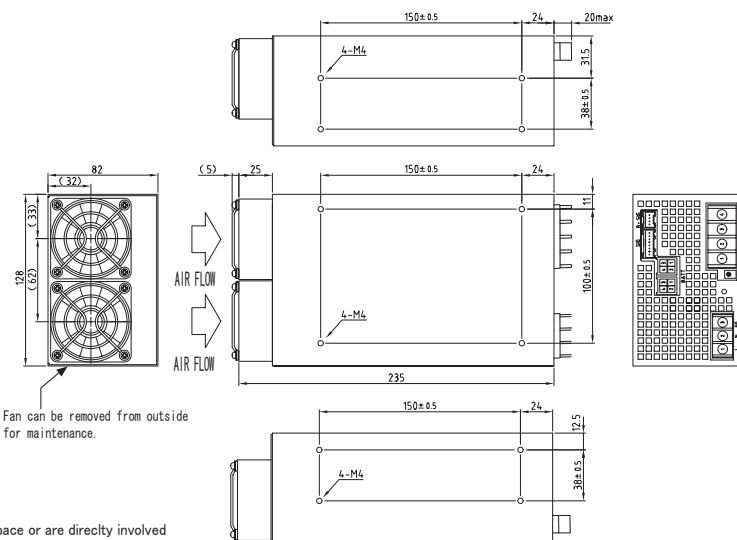
GPSA-360/500P series



Fan can be removed from outside for maintenance.

- Note1: Dimensional tolerance shall be ± 1mm unless otherwise specified.
 Note2: Penetration depth of screws inside power supply shall be 5mm. max.
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GPSA-750/900P series



Fan can be removed from outside for maintenance.

- Note1: Dimensional tolerance shall be ± 1mm unless otherwise specified.
 Note2: Penetration depth of screws inside power supply shall be 5mm. max.

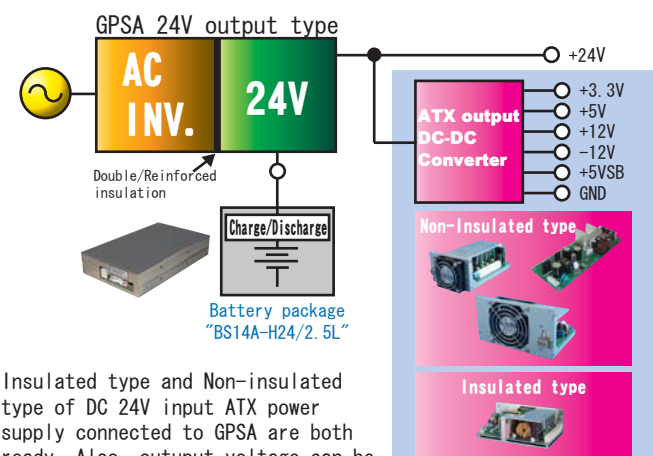
Fan monitoring signal equipped

Fan monitoring signals (FAN_M1, FAN_M2) of the two fans installed are available. Those signals allow you to monitor fan speed.

Application example

ATX power supply for medical system

Combining GPSA-360/750 24V output type with DC 24V input ATX power supply makes ATX power supply that meets medical standard with low leakage current.



Insulated type and Non-insulated type of DC 24V input ATX power supply connected to GPSA are both ready. Also, output voltage can be customized. Please contact us.

Specification summary

Items	GPSA-360 series		GPSA-750 series	
	GPSA-360-12-TP	GPSA-360-24-TP	GPSA-750-12-TP	GPSA-750-24-TP
Input Voltage range	AC 85 to 264V			
Efficiency (AC100V/200V)	80% typ/83% typ (at rated power)		81% typ/84% typ (at rated power)	
Leakage current (AC100V/240V)	0.21mA max. / 0.5mA max.			
Output Rated voltage	12V	24V	12V	24V
Rated current	30A	15A	56A	30A
Rated power	360W	360W	672W	720W
Peak current (AC100V/200V)	40A	20.8/25A	70/80A	37.5/50A
Peak power (AC100V/200V)	480W	500/600W	840/960W	900/1200W
Auxiliary power supply	12V/0.3A (up to 0.1A at backup operation during blackout)			
Voltage adjustable range	12V ± 10%	24V -5%, +20%	12V ± 10%	24V -5%, +20%
	(10.8 to 13.2V)	(22.8 to 28.8V)	(10.8 to 13.2V)	(22.8 to 28.8V)
Signal Remote ON/OFF signal	○	○	○	○
Blackout detection signal	○	○	○	○
Battery Low signal	-	○ (when battery pack connected)	-	○ (when battery pack connected)
Normal output signal	○	○	○	○
Fan monitoring signal	○	○	○	○
Function / Others Cooling system	Forced air cooling by internal fan (Thermal Fan Speed Control)			
Safety standards	UL60950-1, CSA60950-1 (c-UL), EN60950-1, UL60601-1, CSA60601-1 (c-UL), EN60601-1, EN50178: Scheduled to acquire			
Standard price	¥23,000-		¥31,500-	

※ Peak output shall be 5 seconds or less.

Advanced Technology

Monitoring/Control/Communication with Networking!

Innovate in power supply

Always innovative Nipron in the industry with new ideas; following new idea is a Three-in One power supply with micro server equipped that allows monitoring, control, and communication via networking such as the Internet that has become and is now inevitable for our life and social activities.

Micor server equipped to connect Network

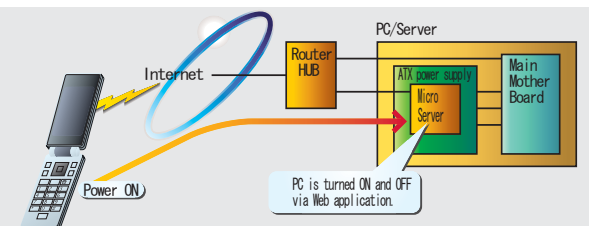
Micro server equipped inside power supply allowing network connection; the micro server, this time, uses exclusive OS employing Nipron's unique communication protocol for communication between power supply and the server. As additional functions: Blackout detection/Fan speed monitoring/Battery low/Lifetime expectancy/Temperature rise inside power supply.

For power supply control: Output ON/OFF control, ON/OFF sequence timing control
 For communication: Shutdown at blackout, Reboot of PC/Server at freeze detection, extended I/O port to communicate with external equipments, Log collection, mail delivery, etc. that are unachievable without the Network for power supply control.

Ex. of Power supply control via the Network

Any power supply can be controlled via the Internet.

- Power supply ON/OFF
- Automatic OFF/ON of PC/Server at freeze detection
- Lifetime expectancy (delivered by mail)
- External equipments control (contact signal)



PC is turned ON and OFF via Web application.

New Product News

Backup available at blackout! Useful for being built in control panel Battery built-in 24Vout power supply BOZ-190P-24-P2.3



Specification summary

Model	BOZ-190P-24-P2.3
Input voltage	AC 85V to 264V
Output voltage	24V
Max. Current/Power	5A/120W
Peak Current/Power	8A/192W(10 seconds max.)
Cooling system	Natural air cooling
Built-in Battery	12V 2.3Ah Lead-acid battery
Backup time at blackout	at 3A discharge, approx. 9 min.

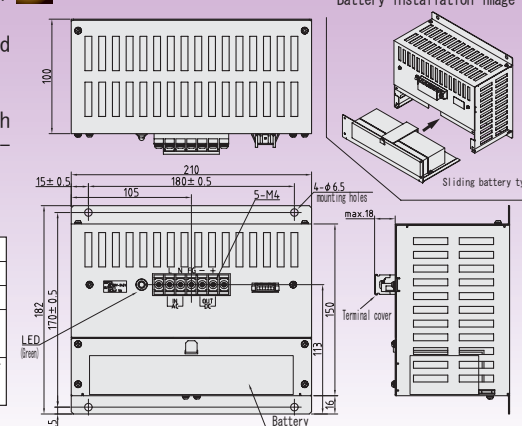
* Just a reference at initial use, not guaranteed.

- 24Vout BOX type AC to DC SW' regulator useful for being built in Control Panel
- Backup operation at blackout with Lead-acid battery installed
- Easy replacement of Lead-acid battery
- Various Input/Output signals equipped such as blackout detection, notice at battery-no-connection, etc. (See the table below.)

Input/Output signal

Blackout detection signal	Delivered at blackout when input is approx. AC 80V or low
Battery voltage low signal	Delivered when battery voltage goes down to approx. 10V or low
Battery-no-connection signal	Delivered when battery is not connected
Shutdown signal	Output shuts down upon receipt of shutdown signal during battery operation.
Battery test signal	Battery operation forcibly starts upon receipt of battery test signal during AC input operation.

Dimensions



2U rack mount use, Continuous 400W ATX power supply PC2U-530P-X2S

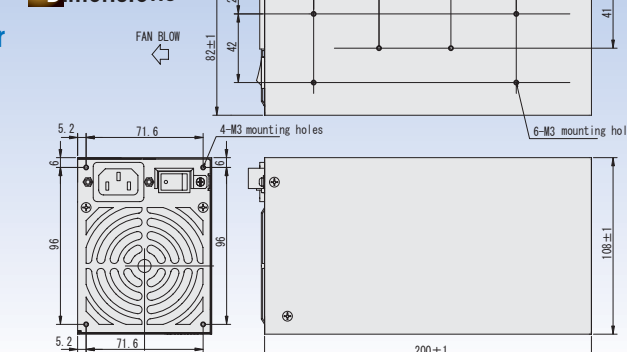


- Most suitable for Rack server use, 2U height ATX power supply
- 0A as minimum load for all outputs
- Regardless of min. load, any load requirement can be achieved within output specification.
- Removable output harnesses corresponding to Main 20Pin/24Pin, Peripheral, and S-ATA connector
- Also, connector and harness length customization is available per customer's specification.
- Silent due to thermal fan speed control fan equipped

Specification summary

Model	PC2U-530P-X2S				
Input voltage	AC85V to 264V (Worldwide)				
Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Max. output Current /Power (continuous)	20A	22A	22A	0.5A	2A
	total 160W		total 385W		
	Total 401W				
Peak Current/Power (5 seconds max.)	30A	33A	30A	0.5A	2.5A
	total 200W		total 512W		
	Total 530.5W				
Min. load	0A	0A	0A	0A	0A

Dimensions



Equipped to GNSP series Under development



Exhibited at DATA STORAGE EXPO on July, 2008 as reference to show the necessity of networking for power supply. Photo shows the DEMO PC with eNSP3-450P-S20-H1V installed.