

Nipron Wave

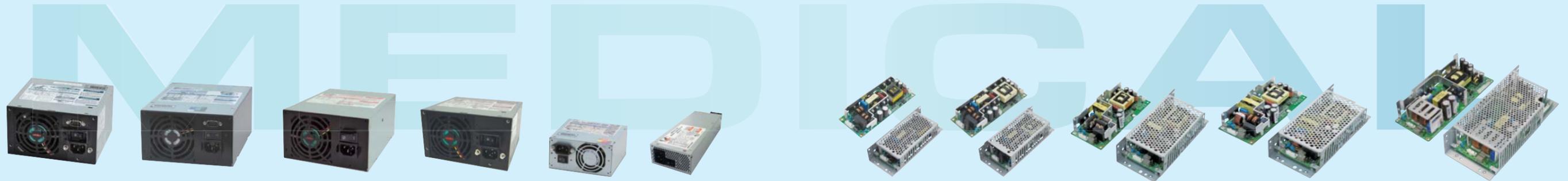
Vol. 45 2016 Autumn



This is the highlight!

Nipron

- 1 Special issue of medical standard**
A lot of power supply lineup compatible with medical standard!
Introduction of advantage and feature of products
- 2 New product HPCSA-700P**
Introduction of multi-functional power supply units with the IoT era in mind



Nipron Medical Solutions

About medical standards

In the medical sector, electrical devices are required to conform to each country's medical standards in accordance with IEC 60601-1, the technical standard for medical electrical equipment published by the International Electrotechnical Commission (IEC). Because of the emphasis on safety, the required specifications are quite strict in comparison with IEC 60950-1, the standard for safety of information processing equipment.

Benefits of using certified power supplies in medical equipment

In order to obtain certification of compliance with a medical standard, a company must apply to a certification agency and undergo an examination. If one of that company's products includes a power supply that has not yet been certified as conforming to the standards for medical electrical equipment, the power supply undergoes testing that entails high costs and a very long waiting period from submission of the application until certification is obtained. If the product incorporates a power supply that has been certified as conforming to the standards for medical electrical equipment, testing of the power supply is essentially unnecessary, resulting in a reduction in the application period and application costs.

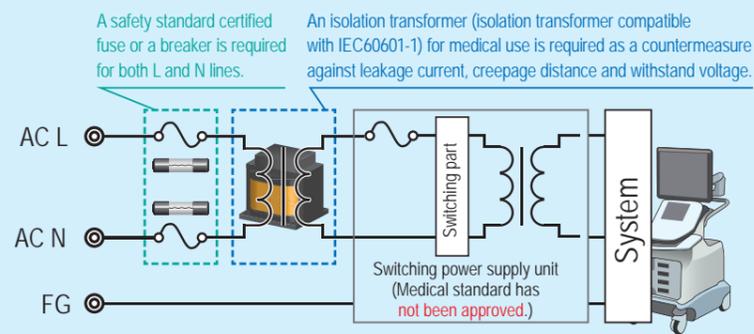
To be clear, a power supply listed as certified according to the medical standard must incorporate features such as integrated fuses in both the L and N lines, compatibility with reinforced insulation, and low leakage current characteristics. This eliminates the need for preparation of expensive separate medical isolation transformers, fuses, and breakers, resulting in low-cost, secure, and safe medical electrical equipment.

▶ In the case that a power supply unit has **not obtained** medical standard.

It is necessary to provide separately a fuse, a transformer, etc.

A fuse and a transformer shall be installed separately from a power supply unit.

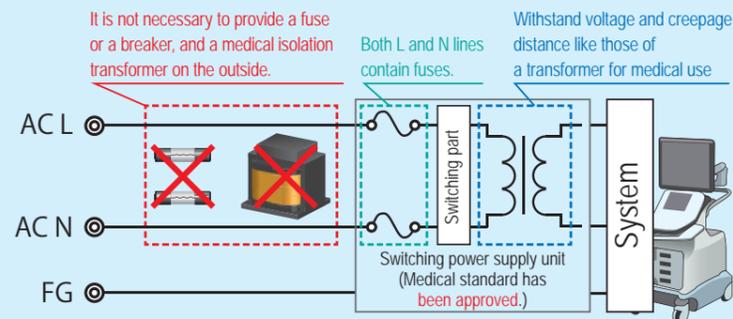
The system becomes enlarged and more expensive.



▶ In the case that a power supply unit has **obtained** medical standard.

It is not necessary to provide separately a fuse, a transformer, etc.

The system becomes miniaturized and less expensive.



List of compatibility with standard for single output power supply unit

Name of series	IEC60601-1 Ed.2	IEC60601-1 Ed.3		Output voltage(single output)	Continuous output	Peak output
		MOPP	MOOP			
mUZP-120 series	×	×	○ (Ed.3.1)	12, 24V	100.8~120W	200.4~201W
mUZPT-120 series	○	○ (Ed.3.1)	○ (Ed.3.1)	12, 15, 24V	100.5~120W	200.4~201W
mUZP-150 series	○	○	○	12, 18, 24, 48V	150~153.6W	400.8~401.4W
mUZP-220 series	○	○	○	12, 18, 24, 48V	180~223.2W	400.8~401.4W
mOZP-200 series	×	×	○	3.3, 5, 12, 15, 24, 36, 48V	132~201.6W	198~403.2W
mOZP-350 series	○	○	×	12, 15, 24, 30, 36, 48V	300~352.8W	504~601W
mGPSA-360 series	○	×	○	12, 24V	360W	480~600W

* It is planned that other models will also be renewed to IEC60601-1 Ed.3.1 one after another.

List of compatibility with standard for power supply unit for PC

Name of series	IEC60601-1 Ed.2	IEC60601-1 Ed.3		Blackout backup	Continuous output	Peak output	Shape
		MOPP	MOOP				
mHNSP4-1000P series	×	×	○	○	822W	1000W	ATX
mHPCSA-1000P-E2S1	×	×	○	×	822W	1000W	ATX
mNSP3-450P series	○	○	×	○	300W	450W	ATX
mPCSA-500P-X2S	○	○	×	×	300W	500W	ATX
mHPCSF-400P-X2S1	×	×	○ (Ed.3.1)	×	310W	400W	SFX
mHPCFL-400P-X2S	×	×	Scheduled obtainment	×	170W	400W	Special (Fanless)
mPCSL-210-X2S	○	×	○	×	210W	-	Special

Leakage current (one example of actual measurement during rated load)

Name of series	At 110 VAC input	At 264 VAC input
mUZP-120 series	0.02mA typ	0.08mA typ
mUZPT-120 series	0.03mA typ	0.07mA typ
mUZP-150 series	0.06mA typ	0.15mA typ
mUZP-220 series	0.06mA typ	0.15mA typ
mOZP-200 series	0.07mA typ	0.18mA typ
mOZP-350 series	0.06mA typ	0.11mA typ
mGPSA-360 series	0.09mA typ (At 100 VAC)	0.19mA typ (At 240 VAC)
mHNSP4-1000P series	0.13mA typ	0.31mA typ
mHPCSA-1000P-E2S1	0.13mA typ	0.31mA typ
mNSP3-450P series	0.09mA typ	0.22mA typ
mPCSA-500P-X2S	0.09mA typ	0.23mA typ
mHPCSF-400P-X2S1	0.09mA typ	0.23mA typ
mPCSL-210-X2S	0.12mA typ (At 100 VAC)	0.26mA typ

Means of protection

● MOOP Means of Operator Protection
⇒ Means of protection in order to mitigate risk related to an electrical shock to other persons than a patient

● MOPP Means of Patient Protection
⇒ Means of protection in order to mitigate risk related to an electrical shock to a patient

Highly efficient and highly reliable AC/DC power supply unit compatible with various electrical equipment for medical use

Thin, ultra-high efficiency PCB type single output power supply unit

mUZP-120

IEC60601-1 Ed.3.1(MOOP)



Continuous: 100~120W Peak: 200W
Output voltage: 12/24V

Ultra-high efficiency PCB type single output power supply unit

mUZPT-120

IEC60601-1 Ed.2, Ed.3.1(MOOP, MOPP)



Continuous: 100~120W Peak: 200W
Output voltage: 12/15/24V

Economy type PCB type single output power supply unit

mUZP-150

IEC60601-1 Ed.2, Ed.3(MOOP, MOPP)



Continuous: 150W Peak: 400W
Output voltage: 12/18/24/48V

Ultra-high efficiency PCB type single output power supply unit

mUZP-220

IEC60601-1 Ed.2, Ed.3(MOOP, MOPP)



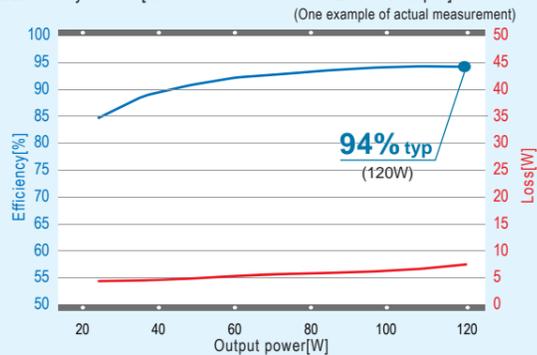
Continuous: 180/220W Peak: 400W
Output voltage: 12/18/24/48V

High-efficiency design

It is an energy-saving power supply unit with ultra-high efficiency of 94% typ during rated output minimizing unlimitedly loss. Its high efficiency resulting in low heat generation enables miniaturization and long life.

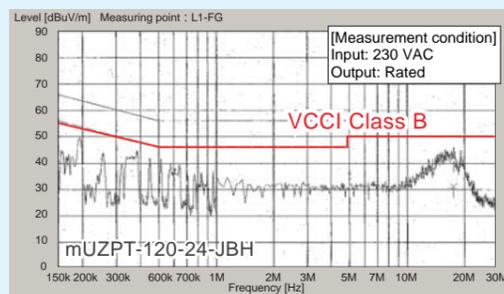
mUZP-120-24-JBH

■ Efficiency & loss [Measurement condition: 230 VAC input]



Low leakage current & low noise

While it reduces leakage current to 0.02 mA at 110 VAC and 0.08 mA at 264 VAC, a conducted emission of even a single power supply unit clears VCCI Class B due to enhanced noise filter circuit and optimized arrangement of parts. Since it is not necessary to provide a noise filter on the outside, it contributes to cost reduction and workload reduction.



(Both the leakage current and the conducted emission are one example of actual measurement.)

Reduction of noise filters becomes possible!



Backup for instantaneous power failure and blackout / standby output

Medical standard has not been obtained. For details, please contact us.

Connection with the following options enables a countermeasure against instantaneous power failure and blackout.

(-JBH, -JB0 type)

Capacitor pack which allows for backup for instantaneous power failure

BS13A-EC400/422F



Output capacity / Reference backup time
180W / Approximately 1 s

Capacitor unit which allows for backup for instantaneous power failure

CB03A-EC400/801F



Output capacity / Reference backup time
100W / Approximately 210 ms
* Connected with mUZP-120-24-JBH

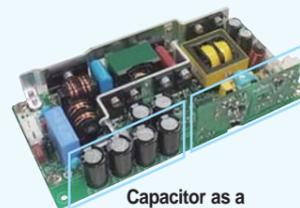
Battery package which allows for backup for blackout

BS27A-P350/2.3L



Output capacity / Reference backup time
150W / Approximately 3 minutes

Standby output and a countermeasure against instantaneous power failure are possible (dedicated model)*



Standby output board

Even if no offsite power is provided, remote control of ON/OFF is possible.



Capacitor as a countermeasure against instantaneous power failure

Even during instantaneous power failure under AC input, output voltage can be kept stable.

Please be careful that the model with a countermeasure against instantaneous power failure and standby output has different size from standard model.

(For mounting, it is compatible with mUZP-150/220.)

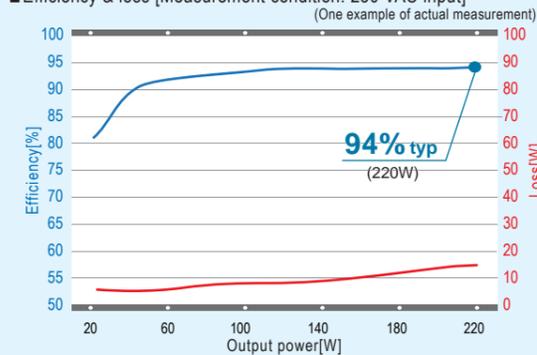
* It may be available depending on negotiation of business. For details, please contact us.

High-efficiency design

It is an energy-saving power supply unit with ultra-high efficiency of 94% typ during rated output minimizing unlimitedly loss. Its high efficiency resulting in low heat generation enables miniaturization and long life.

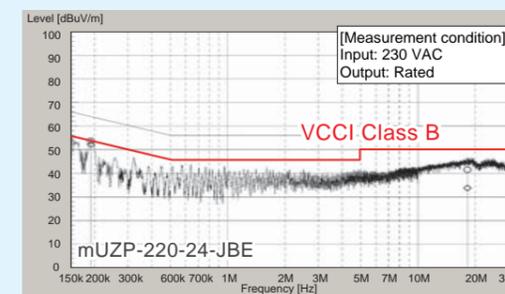
mUZP-220-24

■ Efficiency & loss [Measurement condition: 230 VAC input]



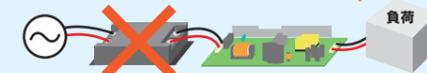
Low leakage current & low noise

While it reduces leakage current to 0.06 mA at 110 VAC and 0.15 mA at 264 VAC, a conducted emission of even a single power supply unit clears VCCI Class B due to enhanced noise filter circuit and optimized arrangement of parts. Since it is not necessary to provide a noise filter on the outside, it contributes to cost reduction and workload reduction.



(Both the leakage current and the conducted emission are one example of actual measurement.)

Reduction of noise filters becomes possible!

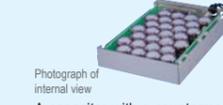


Backup for instantaneous power failure

For mUZP-150/220, a product which allows for a countermeasure against instantaneous power failure is available. You can select an appropriate product depending on application and backup time.

Capacitor pack which allows for backup for instantaneous power failure (mUZP-220)

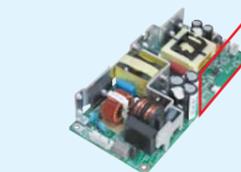
BS13A-EC400/422F



Output capacity / Reference backup time
180W / Approximately 1 s

Photograph of internal view

A capacitor with a countermeasure against instantaneous power failure enables backup for instantaneous power failure (dedicated model).



Capacitor as a countermeasure against instantaneous power failure

Output capacity / Reference backup time
130W / Approximately 80 ms

Backup for instantaneous power failure and blackout / standby output

Medical standard has not been obtained. For details, please contact us.

Capacitor unit which allows for backup for instantaneous power failure

CB03A-EC400/801F



Output capacity / Reference backup time
200W / Approximately 100 ms
※mUZP-220-24-JBEに接続

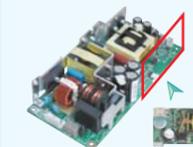
Battery package which allows for backup for blackout

BS27A-P350/2.3L



Output capacity / Reference backup time
150W / Approximately 3 minutes

Standby output and a countermeasure against instantaneous power failure are possible (dedicated model)*



Standby output board

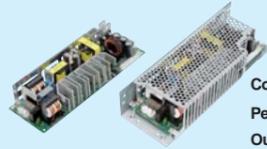
When it is equipped with a standby output board (5VSB), it conforms to ErP Directive Lot6 under up to approximately 0.2 W (at 230 VAC input) and approximately 0.3 W (at 100 VAC input).

* It may be available depending on negotiation of business. For details, please contact us.

The lineup of constant voltage type PCB type single output power supply unit

mOZP-200

IEC60601-1 Ed.3(MOOP)



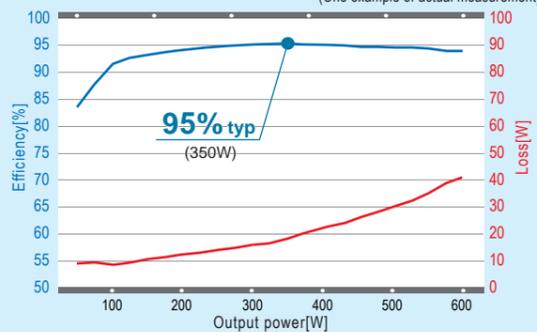
Continuous: 132~201W
Peak: 198~403W
Output voltage: 3.3/5/12/15/24/36/48V

High-efficiency design

24V output type of mOZP-350 achieves high efficiency, 95% and contributes to energy saving. Its high efficiency resulting in low heat generation enables miniaturization and long life.

mOZP-350-24

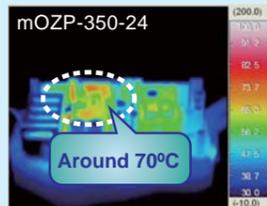
Efficiency & loss [Measurement condition: 230 VAC input]
(One example of actual measurement)



Mitigation of temperature rise due to ultra-high efficiency

[Measurement condition: 100 VAC input, Load 300 W, Ambient temperature 25°C]

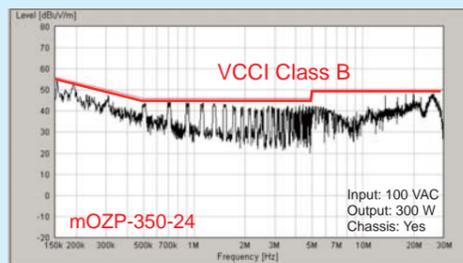
Ultra-high efficiency of mOZP-350 resulting in low power loss and low heat generation enables a long-life power supply unit which allows for large capacity output.



Low leakage current & low noise

Conducted emission of even a single power supply unit clears VCCI Class B. Since it is not necessary to provide a noise filter on the outside, it contributes to cost reduction and workload reduction.

In addition, leakage current is as low as 0.06 mA at 110 VAC and 0.11 mA at 264 VAC. It achieves both low noise and low leakage current.



(Both the leakage current and the conducted emission are one example of actual measurement.)

Ultra-high efficiency PCB type single output power supply unit

mOZP-350

IEC60601-1 Ed.2, Ed.3(MOOP, MOPP)

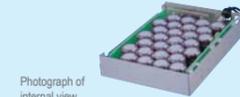


Continuous: 300~350W
Peak: 500~600W
Output voltage: 12/15/24/30/36/48V

Backup for instantaneous power failure / 5 V standby output

Capacitor pack which allows for backup for instantaneous power failure

BS13A-EC400/422F



Output capacity / Reference backup time
180W / Approximately 1 s

Standby output board (Only mOZP-200 is compatible with medical standard.)

PS-10WP-5VSB



Output voltage / Output capacity
5 V / 1.5 A / Peak 2.0 A

Backup for instantaneous power failure / Standby output / Others

Medical standard has not been obtained. For details, please contact us.

Standby output board

PS-10WP-12VSB



Output voltage / Output capacity
12 V / 0.63 A / Peak 0.85 A

Capacitor unit which allows for backup for instantaneous power failure

CB03A-EC400/801F



Output capacity / Reference backup time
350W / Approximately 100 ms

* Connected with mOZP-350-24-JSE

Battery package which allows for backup for blackout

BS27A-P350/2.3L



Output capacity / Reference backup time
150W / Approximately 3 minutes

Cover with fan for forced air cooling (mOZP-350)

ACC3363-02



Capacity is enlarged by fan cooling.
During forced air cooling, continuous output up to 500 W at maximum is possible.

Compatible with backup for blackout Unit type single output power supply unit

mGPSA-360

IEC60601-1 Ed.2, Ed.3(MOOP)



Continuous: 360W Peak: 480~600W
Output voltage: 12/24V

Backup for blackout

Blackout detection signal

All models of mGPSA series are equipped with a blackout detection signal as standard. Customers can save cost to provide a detection board.

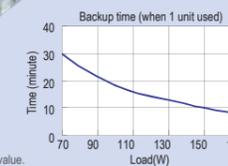
Backup for blackout

If 24V output type (mGPSA-360-24) is connected with a battery package (BS14*-H24/2.5L), it enables backup operation during blackout.

- Switching from AC operation to battery operation is no instantaneous interruption switching.
- Maximum output of 170 W and peak output of 240 W are possible.
- A battery package which has a built-in current balance circuit allows for parallel operation.
- It can output a Battery Low signal.
- Discharge time can be stopped by timer stop with a DIP switch or input of a remote ON/OFF signal (PS_ON#) to mGPSA.
- When load is PC, automatic shutdown of OS by automatic shutdown software "NSP Pro 2" is enabled. (Harness is separately required.)

Battery package

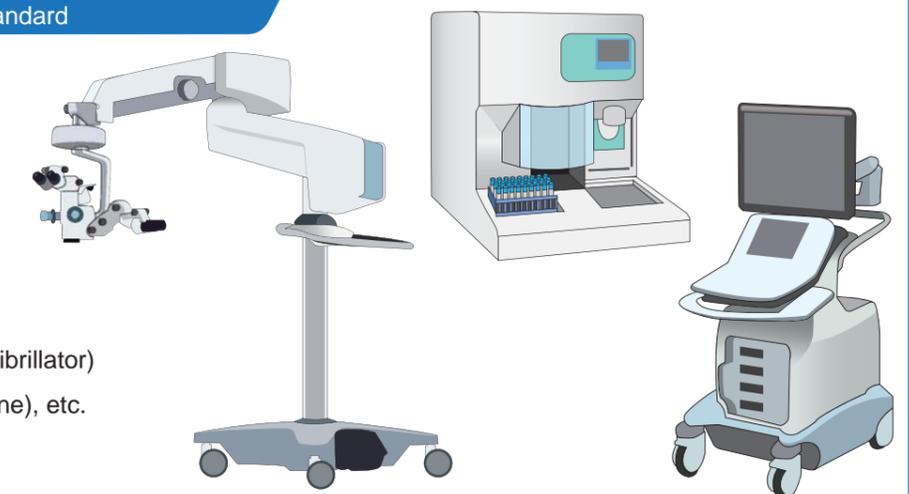
Model: BS14*-H24/2.5L
Battery: Nickel-metal hydride battery
Output: 24 V 170 W (Peak 240 W)
Backup time: See the graph on the right.*
* Parallel connection of battery packages enables long-hour and large capacity backup.



* Please note that the backup time is a value indicated as a guide for initial period of use of the battery package but is not a guaranteed value.

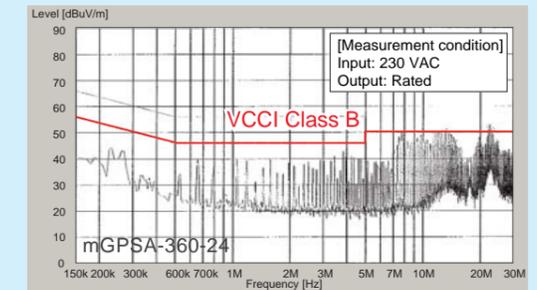
Track record of adoption of single output power supply units compatible with medical standard

- Dental chair
- Laser therapy equipment
- Blood analyzer
- Endoscope
- Microscope for surgery
- X-ray printer
- AED (Automated external defibrillator)
- CR (Image processing machine), etc.



Low leakage current & low noise

While it reduces leakage current to 0.08 mA at 100 VAC and 0.20 mA at 240 VAC, a conducted emission of even a single power supply unit clears VCCI Class B due to enhanced noise filter circuit and optimized arrangement of parts. Since it is not necessary to provide a noise filter on the outside, it contributes to cost reduction and workload reduction.



Equipped with standby output as standard

Output +12VSB is possible. It can be used for power for remote ON/OFF, etc.

Standby power output +12VSB (Auxiliary power supply) mGPSA-360	0.3A
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Long life

Operation for not less than 10 years is possible.

mGPSA-360 has long-life design with estimated life of not less than 10 years under the environment of ambient temperature of 30°C.

Maximum efficiency of 85% typ is achieved.

Its high efficiency resulting in low heat generation contributes to long life of a power supply unit and built-in devices.

Nonstop power supply which protects electrical equipment for medical use against blackout and instantaneous power failure

Compatible with large-capacity backup Nonstop power supply

NEW mHNSP4-1000P

IEC60601-1 Ed.3(MOOP)

Nonstop power supply

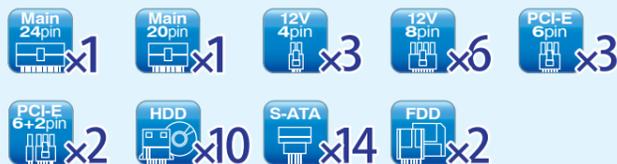


Leakage current 0.31mA
264 VAC input, I_o=100%

Rated output power ... **822w** Peak output power ... **1000w**

Output voltage	+3.3V	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+5VSB
Maximum current / Maximum power (continuous)	25A	25A	18A	18A	18A	18A	1.2A	3A
	Total 207.5W		Total 792W			14.4W	15W	
	Total 822W							
Peak current / Peak power (within 5 s)	30A	30A	25A	25A	25A	25A	1.2A	4A
	Total 249W		Total 1000W			14.4W	20W	
	Total 1000W							
Minimum current	0A	0A	0A	0A	0A	0A	0A	0A

Number of output connectors*



* Maximum number of respective connectors. For details, please check them on HP, with product catalogues, etc.

Conforming battery

■ BS25A-H350/2.5L

CCC obtained Nonstop power supply

IEC60601-1 Ed.2, Ed.3(MOOP)

Nonstop power supply



Leakage current 0.22mA
264 VAC input, I_o=100%

Rated output power ... **301w** Peak output power ... **450.5w**

Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Maximum current / Maximum power (continuous)	20A	22A	22A	0.5A	2.0A
	Total 160W		22A		
	Total 285W		Total 301W		
Peak current / Peak power (within 5 s)	30A	33A	30A	0.5A	2.5A
	Total 200W		30A		
	Total 432W		Total 450.5W		
Minimum current	0A	0A	0A	0A	0A

Number of output connectors*



* Maximum number of respective connectors. For details, please check them on HP, with product catalogues, etc.

Conforming battery

- BS11A-P24/2.3L
- BS10A-H24/2.0L
- RBS02A-P24/2.3L
- BS22A-H24/2.0L
- BS12A-P24/5.0L

With function of uninterruptible power supply Nonstop ATX power supply

<http://www.nipron.com>

What is nonstop power supply?

Nonstop power supply is our specific technology

It has a built-in blackout backup circuit which is Nipron original. If it is connected with a battery package, it is possible to supply stable power without bringing about any abnormality or change in output even when such input failure as blackout, instantaneous power failure or voltage drop occurs.

Nonstop power supply is power feeding with NO instantaneous interruption.

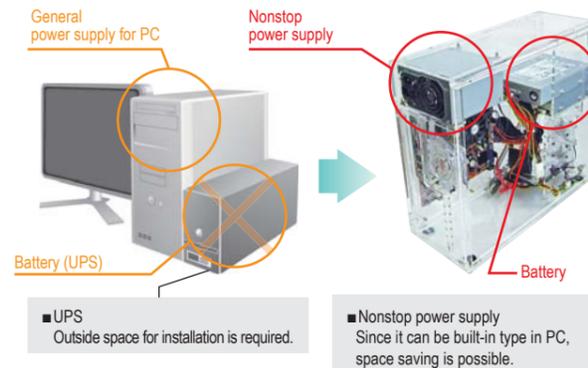
Nonstop power supply does not require time for switching to battery operation at the time of blackout and enables automatic shift by comparison of voltage level of each inverter at the AC side, at the battery side and thus achieves highly reliable power feeding with NO instantaneous interruption.

What is difference between UPS and a nonstop power supply?

UPS (Uninterruptible Power Supply) is widely known as a countermeasure against blackout. A nonstop power supply is a power supply unit for PC with highly reliable function of blackout backup which allows for power feeding with NO instantaneous interruption like UPS. We will explain what is difference between UPS and a nonstop power supply and what is advantage to use a nonstop power supply.

Space saving

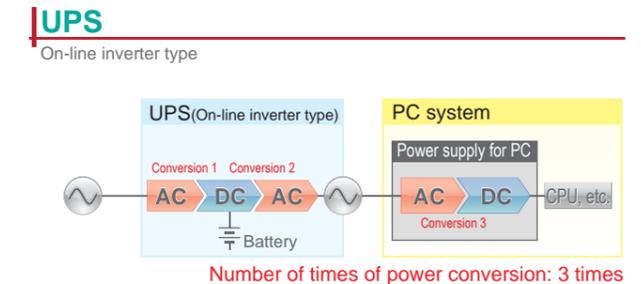
Since it is possible for a nonstop power supply to have a built-in battery package for backup in PC (in a housing) (5-inch bay or 3.5-inch bay), it is not necessary to locate it outside, which results in space saving.



High efficiency and energy saving

In UPS of on-line inverter type during normal operation, power conversion takes place twice in UPS and moreover, power is converted once more in a power supply for PC connected with UPS. Thus, power conversion takes place three times in total. During blackout, power conversion takes place twice. On the other hand, a nonstop power supply enables power conversion only once both during normal operation and during blackout. It achieves energy saving as compared with UPS.

Simplified schematic diagram of nonstop power supply and UPS power conversion



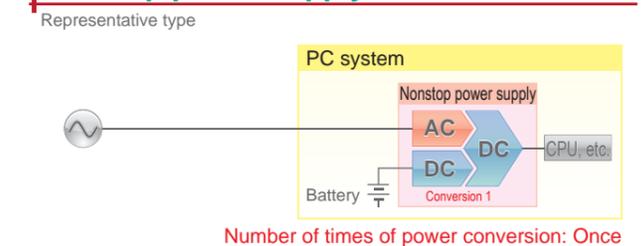
Problem of unstable operation due to output waveform is resolved.

Since cheap UPS causes a lot of square wave outputs, if a power supply unit equipped with PFC is connected, it is in danger of sounding or unstable operation. There was also a case that UPS misrecognized waveform distortion of input voltage as blackout, switched to battery operation and shut down PC. In a nonstop power supply, an original blackout backup circuit resolves absolutely such problems.

Improvement of reliability

While UPS supplies power in series connection to a PC system, in a configuration using a nonstop power supply which connects a nonstop power supply with a battery in a PC system, AC line and DC line from a battery are connected parallelly, which results in low failure rate and improved reliability.

Nonstop power supply



Protect information and equipment!

<http://www.nipron.com>

Highly reliable
Large-capacity ATX power supply **NEW mHPCSA-1000P-E2S1**

IEC60601-1 Ed.3(MOOP)

Rated output power ... **822 w**

Peak output power ... **1000w**



Leakage current 0.31mA
264 VAC input Io=100%

Output voltage	+3.3V	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+5VSB
Maximum current / Maximum power (continuous)	25A	25A	18A	18A	18A	18A	1.2A	3A
	Total 207.5W		Total 792W				14.4W	15W
	合計 822W							
Peak current / Peak power (within 5 s)	30A	30A	25A	25A	25A	25A	1.2A	4A
	Total 249W		Total 1000W				14.4W	20W
	Total 1000W							
Minimum current	0A	0A	0A	0A	0A	0A	0A	0A

Number of output connectors*



* Maximum number of respective connectors. For details, please check them on HP, with product catalogues, etc.

Track records of many adoption
ATX power supply

IEC60601-1 Ed.2, Ed.3(MOPP)

Rated output power ... **301 w**

Peak output power ... **500.5w**



Leakage current 0.23mA
264 VAC input Io=100%

Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Maximum current / Maximum power (continuous)	20A	22A	22A	0.5A	2A
	Total 160W		Total 285W		
	Total 301W				
Peak current / Peak power (within 5 s)	30A	33A	30A	0.5A	2.5A
	Total 200W		Total 482W		
	Total 500.5W				
Minimum current	0A	0A	0A	0A	0A

Number of output connectors*



* Maximum number of respective connectors. For details, please check them on HP, with product catalogues, etc.

Slim-sized
ATX power supply

IEC60601-1 Ed.2, Ed.3(MOOP)

Rated output power ... **210.8w**



Leakage current 0.26mA
264 VAC input Io=100%

Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Maximum current / Maximum power (continuous)	10A	10A	12A	0.3A	1.5A
	Total 199.7W				
	Total 210.8W				
Minimum current	0A	0A	0.8A	0A	0A

Number of output connectors*



* Maximum number of respective connectors. For details, please check them on HP, with product catalogues, etc.

Highly reliable
SFX power supply

IEC60601-1 Ed.3.1(MOOP)

Rated output power ... **310 w**

Peak output power ... **400 w**



Leakage current 0.31mA
264 VAC input Io=100%

Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Maximum current / Maximum power (continuous)	16A	16A	25A	0.5A	2A
	Total 90W		300W	6W	10W
	Total 300W				
	Total 310W				
Peak current / Peak power (within 5 s)	20A	20A	30A	0.5A	3A
	Total 120W		360W	6W	15W
	Total 385W				
	Total 400W				
Minimum current	0A	0A	0A	0A	0A

Number of output connectors*



* Maximum number of respective connectors. For details, please check them on HP, with product catalogues, etc.

Highly reliable
Fanless power supply

It is planned to obtain IEC60601-1 Ed.3 (MOOP).

Rated output power ... (Natural air cooling) **170 W**
(Forced air cooling) **305 W**

Peak output power ... **400 w**



* Image

* For details, please contact us.

Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Maximum current / Maximum power (continuous) (Natural air cooling)	10A	10A	14A	0.2A	1A
	Total 83W		168W	2.4W	5W
	Total 170W				
Maximum current / Maximum power (continuous) (Forced air cooling)	16A	16A	25A	0.5A	1.5A
	Total 90W		300W	6W	7.5W
	Total 305W				
Peak current / Peak power (within 5 s)	20A	20A	30A	0.5A	2A
	Total 120W		360W	6W	10W
	Total 400W				
Minimum current	0A	0A	0A	0A	0A

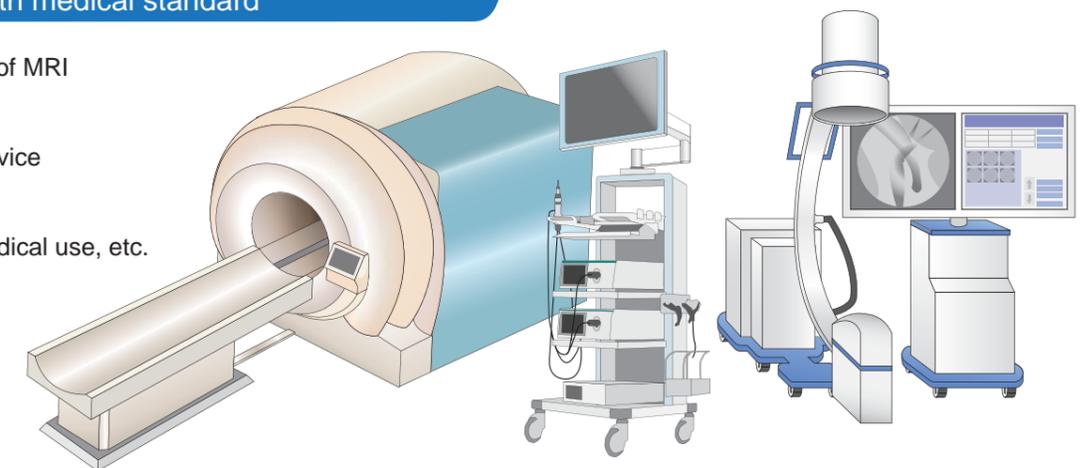
Number of output connectors*



* Maximum number of respective connectors. For details, please check them on HP, with product catalogues, etc.

Track record of adoption of Computer Power Supply compatible with medical standard

- PC for control of MRI
- C arm
- 3D imaging device
- Endoscope
- Monitor for medical use, etc.



NEW HPCSA-700P-E2S

New ATX power supply which meets with IoT era



Continuous: **600W** Peak: **700W**

Lineup of models compatible with IoT are available.

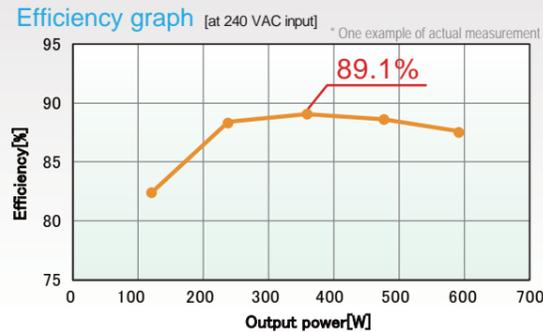
Such matters are possible!

- Forecast of life determination
- Monitoring function
- I2C communication function
- Variable setting function of overcurrent protection circuit
- Output voltage rising adjustment

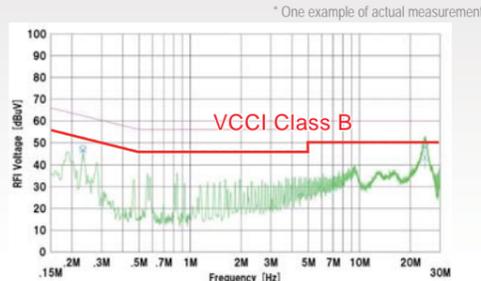
Outline of product

High-efficiency circuit reduces amount of heat generation and noise

It achieves maximum efficiency of 89% typ. It reduces significantly power loss, minimizes power consumption during operation of equipment and contributes to mitigation of environmental load. In addition, the single power supply unit clears conducted emission Class B and it does not require any noise filter on the outside.

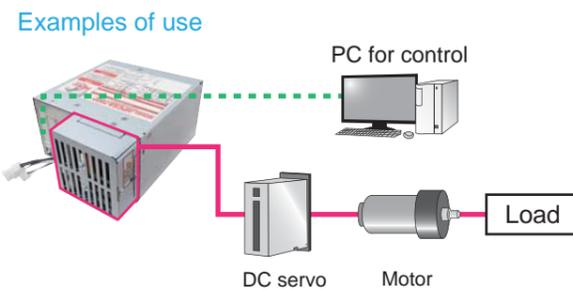


Conducted emission characteristics

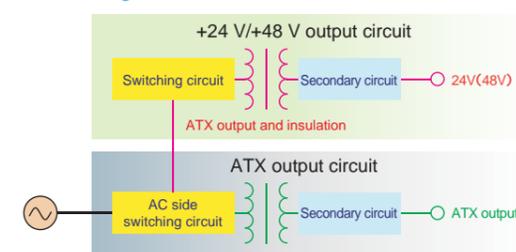


Lineup of types which allow for +24 V/+48 V output are available.

If HPCSA-700P series is equipped with an output enhancement unit, it allows for output of +24 V or +48 V. Without need to provide separately a single output power supply unit, one ATX power supply can be used for both control and motive power. +24 V/+48 V is insulated from ATX output and even when it is connected with equipment with big noise such as a motor, etc., it allows for stable operation without affecting the PC side.



Block diagram



Other features

- ▶ Low standby power specification, standby power of not more than 0.1 Wtyp (compliant with ErP Directive)
- ▶ Low leakage current
- ▶ Minimum load current 0A specification over full output range
- ▶ Possible to obtain medical standard*
- ▶ A countermeasure against instantaneous power failure / blackout is possible (dedicated type)*

If it is connected with a capacitor pack or a battery package, it allows for a countermeasure against instantaneous power failure / blackout.

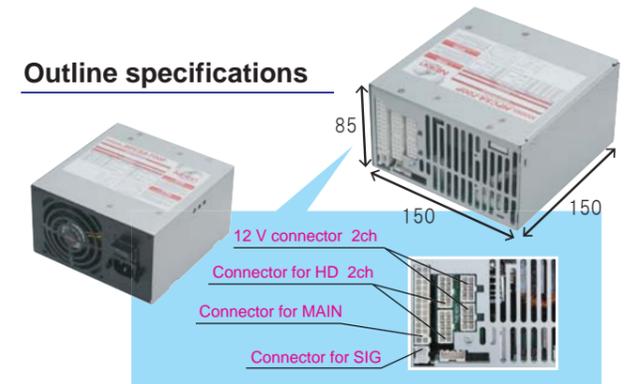


Photograph of internal view



* For details, please contact us.

Outline specifications

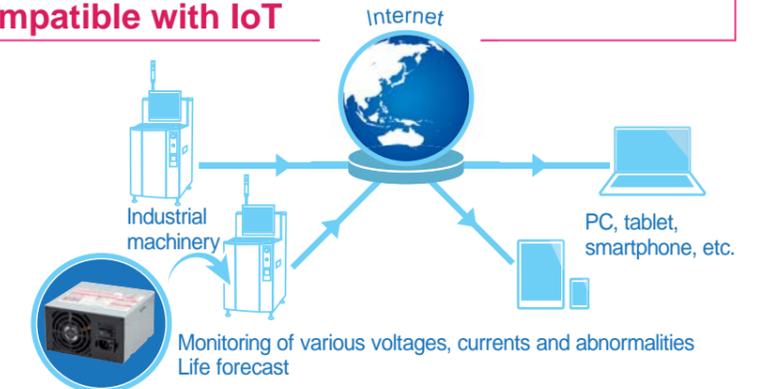


Output specification

Output voltage	+3.3V	+5V	+12V 1	+12V 2	+12V 3	-12V	+5VSB
Maximum current / Maximum power (continuous)	16A	16A	18A	18A	18A	1A	2A
	Total 90W		Total 600W			10W	
Peak current / Peak power (within 5 s)	20A	20A	25A	25A	25A	1A	3A
	Total 120W		Total 700W			15W	
Minimum current	0A	0A	0A	0A	0A	0A	0A

Features of power supply unit compatible with IoT

IoT (Internet of Things) is a system in which everything is connected with internet. Connection of things with internet enables remote measurement, recognition, control, etc., grasping and improving rate of operation for manufacturing facilities, identification of failure spot of production facilities, improvement of product quality, energy management, etc. Since HPCSA-700P of our company allows for monitoring of various voltages, currents and abnormalities and life forecast, it enables early detection of abnormality of respective devices, avoiding stop of a device due to life (Improvement of RAS function), grasping load factor of respective equipment from power consumption, peak power reduction control, etc.



Features of "HPCSA-700P-E2S-IoT (provisional name)" compatible with IoT

Forecast of life determination

Operating time is weighed by monitoring operating conditions including fan speed, internal temperature of a power supply unit, load condition, etc. and remaining life is forecasted.



Monitoring function

Respective input and output conditions inside a power supply unit are recorded and output to the outside by communication function.

- Respective output voltages and currents
- Input voltage and input power
- Fan speed
- Operating temperature
- State of abnormality protection operation, etc.

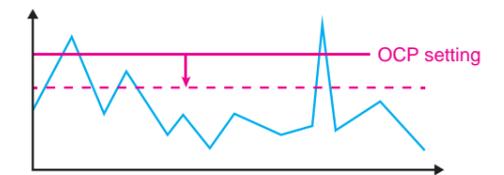
Uniform control of input and output conditions
Records of failures in a system are kept.

I2C telecommunication function

It supports communication according to I2C standard which has rich experience as internal communication for industrial machinery, etc. It provides highly reliable high-speed communication. With an additional optional communication board, it can respond to various requirements including USB, RS-232C, etc.

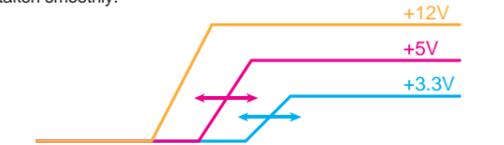
Variable setting function of overcurrent protection circuit

Standard setting for overcurrent protection (OCP) is so made as to meet with the upper limit of respective systems. For example, however, "in the case that +3.3 V system and +5 V system are seldom used," it is possible to make setting from external PC that overcurrent protection operates with smaller current than standard. Thus, it is possible to provide optimized protection for equipment.



Output voltage rising adjustment

Against a problem of compatibility between PC and a power supply unit which may occur rarely due to difference in rising timing of output voltages, it is possible to make setting from external PC that rising timing is individually adjusted and thus cause can be examined and a countermeasure can be taken smoothly.



We can respond flexibly with a variety and a plenty of functions.

<http://www.nipron.com>

New product with IoT era in mind! HPCSA-700P

<http://www.nipron.com>

Notice of renewal of Homepage



Change in design of TOP page

As from August, design of TOP page of Nipron Homepage was changed.

We thought that old homepage should be reviewed from a viewpoint of users to find challenges and it would be necessary to improve "easy-to-understand" and "visibility" to create "the homepage which is easy-to-use for customers."

Accordingly, we provided banners and headings which helped visually imagine links and made entire design with sense of unity and thus, we think we could make up clear and neat TOP page.

While the change is made only on TOP page for the time being, we are planning to carry out complete change of our homepage as mentioned below. As we will make better homepage, your continued visit would be appreciated.



Change in searching products on homepage (planned)

On the page for searching products, the following 3 methods are available:

- A method to search by narrowing down power supply units, for example, "UZP-120 series" from the category of "AC-DC open-frame power supply"
- A method to input a part of product model (for example, "UZP")
- A method to search by narrowing down detailed specifications for each of 3 categories, "Computer Power Supply," "AC-DC Power Supply" and "DC-DC Power Supply."



Download of certificates

On the page of product information, various certificates (CB, UL and CCC) for each product can be downloaded. Without getting in touch with a person in charge in sales section or WEB support, a customer can access them at any time when a customer requires.

* Only for products sold on the homepage.



Invitation to exhibition

Invitation to exhibition at HOSPEX Japan 2016

We will participate as an exhibitor in "HOSPEX Japan 2016" which will take place for 3 days from October 26 to October 28 at Tokyo Big Sight. In this exhibition, organizations and companies which are engaged in design, development and management of facilities, equipment, etc. in the latest medical and welfare fields will assemble in a hall.

Nipron will exhibit various switching power supply units which are optimized for electrical equipment for medical use and have obtained medical standard.

Please be sure to call on our booth when you visit the exhibition. We will be pleased to offer the best solution for customers' issues.



mHNSP4-1000P



mUZPT-120

Event date: October 26 (Wed) – October 28 (Fri), 2016
Venue: West 2 Hall, Tokyo Big Sight
Booth No.: 2N-20

* We are pleased to send invitation to the exhibition to customers who are interested in it. Please do not hesitate to contact us. Our contact: WEB Support Office, Nipron Co., Ltd.
(TEL) +81-6-6487-0611 (FAX) +81-6-6487-0523
(E-MAIL) support1@nipron.com

A diversity of power supply unit is available. First of all please telephone us.

<http://www.nipron.com>

President talks! TOP sales corner.



22nd A wide variety of certified power supplies in medical equipment are available

On October 26–27, 2016, HOSPEX Japan 2016 will be held at Tokyo Big Sight with Nipron attending as an exhibitor.

Many new products will be announced at this industry trade show, as interest in the medical device industry is quite high not only in Japan but around the globe.

Nipron also plans to be proactive in introducing a number of unique product lines, beginning with our nonstop power supplies for the medical equipment industry. Our sales staff are very enthusiastic about these products.

We are fortunate that Nipron has become known worldwide for our nonstop power supplies and ATX power supplies, as reflected in our outstanding sales record.

At this healthcare industry trade show, we are preparing to exhibit a variety of models, including PCB type power supply designed to be integrated into equipment as well as a nonstop power supply certified under the medical standard (m series) and a power supply that can be optionally modified. These are modeled on the "Amazing Product" UZP, or Ultra Zero Power Supply, which has earned an excellent reputation.

The mUZP easily satisfies the low-noise standard (VCCI-Class B), which is essential for medical equipment. The secret to this performance is the adoption of an LLC resonance circuit that minimizes the generation of noise itself. It is based on a foundation of advanced board layout design and heat protection technologies.

A second requirement for medical applications is a low leakage current characteristic. Achieving this requires a low-noise characteristic low enough to eliminate the need for a noise filter; therefore, we managed to achieve a noise level of only 0.06 mA at 100 VAC input.

Furthermore, by making medical devices that are smaller, lighter, and more compact, we are differentiating our products and becoming more competitive for the customers. Our compact power supplies themselves must exhibit high reliability as an essential element.

In order to achieve this, it was necessary to design an ultra-high efficiency product that reduces losses (in the form of heat) from the power supply itself. Nipron's mUZP series achieves 92% efficiency at 100 VAC and 94% at 200 VAC.

As a result, it is no exaggeration to say that Nipron products have all the elements required for reliability and application as medical power supplies.

Furthermore, in addition to offering our standard series, we can provide rapid development of custom-designed power supplies for medical use with greater flexibility than is offered by our competitors. Our judgment helps us ensure that customer requests and our judgments are consistent with one other. This is one of Nipron's major advantages.

Please do not hesitate to contact our sales representatives, who are eager to suggest solutions to your business challenges.

Setsuo Sakai
Representative Director & President, Sales General Manager

Report of exhibition



Report of exhibition at the 3rd INT'L SMART GRID EXPO OSAKA

We participated as an exhibitor in the 3rd INT'L SMART GRID EXPO OSAKA which took place from September 7 to September 9.

The booth mainly presented new solution which offered construction of a system with high yield utilizing additional installation and power storage by Nipron-specific method for solar power generation in which investment efficiency had deteriorated year by year due to FIT regulation. This time, we made a proposal of additional installation of panels as presented in previous issue under the title of "an example of construction of mega solar power station which only a PV maximizer could achieve" and we feel a lot of customers were interested in it.

As increasing interest in power storage is shown, a lot of customers visited us and requested us detailed explanation of Nipron power storage system.

In this exhibition, we could offer the best solution to potential investors who were looking for new opportunity of investment and customers who had a problem in connection on hold. We received such voice that "such a method is available" and thus, it really resulted in great success.



Presentation of an example of construction of mega solar power station



Scene of Nipron's booth

Flower arrangement at Nipron

In the Sales Head Office & Central Dream Laboratory Building, the front entrance is decorated with flower arrangement. Since these flowers are arranged by an employee of Nipron in a heartfelt manner, please take a look at them.



"When you are in trouble with power supply," please consult with Nipron.

<http://www.nipron.com>

Forging a Nipron for the Long Term (Independence/Freedom/Fun)

The title of this article, "Forging a Nipron for the Long Term," reflects the driving force that propels me right now. When I committed to "Forging a Nipron for the Long Term," the key words that I absolutely wanted to convey for our ongoing success are independence, freedom and fun. For example, people who live for a prolonged period after entering a vegetative state remain dependent upon the efforts of many others. If people cannot achieve for their whole lives with the vitality Nipron has displayed, their lives will have little meaning and they will not be useful to society. In order to maintain our vitality, we need the freedom to demonstrate our autonomy while having fun generating power. Having such a corporate culture attracts new individuals who also create fun and add vitality. Therefore, I think that Nipron employees should reject the approach of allowing others to dominate them or depend on them. For this reason, it is essential that we create a system and the mechanisms that will help us to maintain our independence.

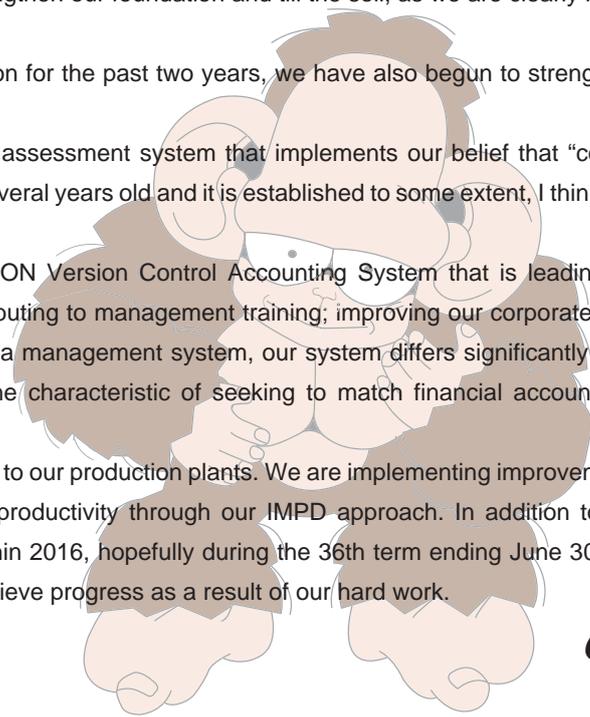
At the same time, some degree of reasonable monitoring by third parties is also important, but one must also be ready to take charge to prevent the risk of a runaway situation. In my case, I myself have the strong sense that some distance remains before I can reach my goal, but it is also certain that I must think of my age. So, after reviewing our current state, I remain acutely aware every day that reforms are required from this point on in order to strengthen our foundation and till the soil, as we are clearly not maturing.

While we have been strengthening our sales foundation for the past two years, we have also begun to strengthen our management foundation.

Our first initiative is our "Great System," a personnel assessment system that implements our belief that "companies are people." Although this system is being improved because it is several years old and it is established to some extent, I think further improvements will be necessary in the future.

Our second initiative is completing NDMS, the NIPRON Version Control Accounting System that is leading the evolution of our organizational and administrative management; contributing to management training; improving our corporate profits; and putting us back on track. While Kyocera has its renowned Ameba management system, our system differs significantly from theirs in that it is deeply detailed in terms of processes. It also has the characteristic of seeking to match financial accounting and management accounting.

The third initiative is to link technological developments to our production plants. We are implementing improvements in order to create a truly "Attractive Factory" by improving quality and productivity through our IMPD approach. In addition to promoting advanced initiatives, we intend to finish these major reforms within 2016, hopefully during the 36th term ending June 30, 2017, even if we are somewhat delayed. In the future, Nipron Wave will achieve progress as a result of our hard work.



***October, 2016
Setsuo Sakai***