

Nipron Wave

Vol.55 2019 Spring



This is the highlight

- 1 Special feature on new product UDP Series - DIN-rail compatible PSU**
A high-efficiency and high-reliability DIN-rail compatible PSU introduced
Facilitates miniaturization of control panels with its thin & low heat generation design
- 2 Special feature on new product UZP-600 series**
A fan-less PSU with continuous power of 600 W & peak power of 1200 W

Spotlight on the market for used solar facilities

The Importance of Renewing Essential Social Infrastructure

As long as an old power station is purchased, one wishes to:

Utilize it as long as possible as a source of renewable energy power station even after the termination of FIT by giving a consideration to the profitability!

Enforce its power generation capacity by removing/correcting the causes of power deterioration!

Cut down on the cost with a precision monitoring of power generation and safer O&M!

An optimum option for the ESG investment!!



PV Maximizer

Maximize the power by compensating for shadows, unevenness and deterioration

After FIT

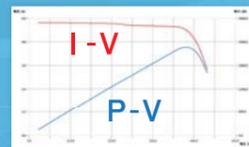


Power storage system Neo eXpander

Nipron Renovation & Solution

Perfect-full O&M (remote monitoring)

100% power sustained O&M service



PV Guardmyan PV Guardmyan

High-precision remote monitoring and diagnosis system

Precision remote monitoring and diagnosis of power generation

Maximizing the resale value of used power stations through "repowering" <http://www.nipron.com>

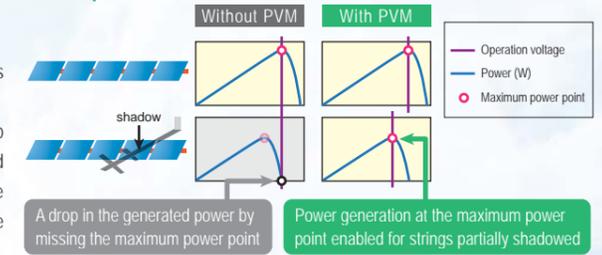
I. Achieve repowering of power stations = PV Maximizer =

With the PV Maximizer effect, impacts of deteriorated devices and shadows are minimized to take the full advantage of power generation capacity.

Unfold the power generation capacity Recover drop in the power

The PV Maximizer maximizes the generated power by performing MPPT control string by string. The string voltage could drop due to different reasons, including shadows of electric poles and trees cast on the panels and uneven orientation of arrays.

If this happens, the voltage of other normal strings could also be affected, resulting in a voltage drop and, ultimately, a drop in the generated power. The PV Maximizer can raise the voltage of affected strings to the voltage level of other strings while maintaining the maximum power point to eliminate the gap in the voltage. This makes it possible to obtain the maximum power from all panels available for the power generation and increase the revenue from the sale of electricity.



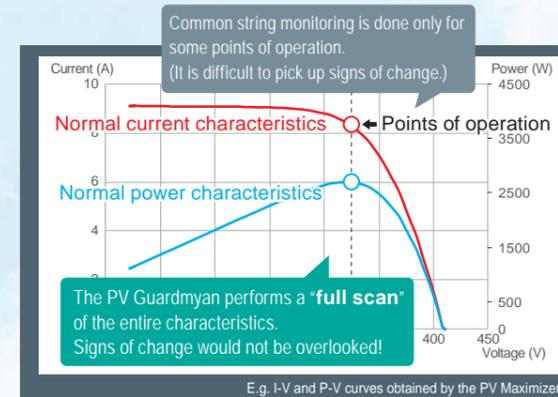
II. Detect drops in generated power precisely = PV Guardmyan =

The PV Guardmyan offers the capability of performing highly precise remote monitoring and diagnosis unlike no other system while limiting the cost. It is also possible to detect problems at an early stage and predict what kind of problems are expected with the I-V curve diagnosis of each string.

Easy to find problems High-precision constant monitoring Trouble-free I-V curve automatic measurement

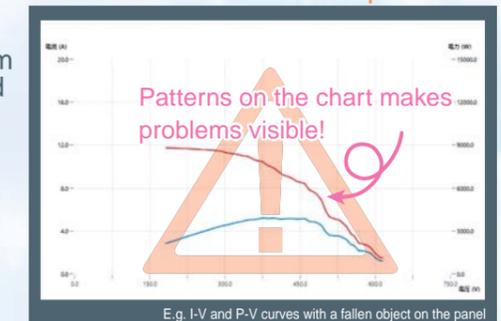
High sensitivity achieved by monitoring the power, on which changes are significant, instead of monitoring only the current, on which changes are small

The Full Scan feature enables the user to perform an automatic measurement of I-V curve on all units at any time and on any day of the year. Signs of change would not be overlooked!



A problem occurred

Problems captured automatically, their locations identified and reported



III. Completely maintenance-free power station is a reality now = Perfect-full O&M =

With the "100% power sustained O&M," Nipron undertakes the monitoring, analysis, restoration from and addressing problems of power stations in a bulk package using PV Guardmyan to reduce the burden of the facility owner to the limit. It is a new O&M service provided by Nipron to maintain and even increase the average power generated at the time of contract utilizing the quick restoration from and addressing problems enabled by PV Guardmyan.



Increase, monitor and protect power generation amount with PV Maximizer <http://www.nipron.com>

Exceptionally reliable and efficient Nipron switching power supplies are now available as long-awaited DIN-rail compatible models.

UDP-240/120 series

The thin module design enables miniaturization of control panels to save space

Low heat generation!

Max. efficiency of **94% typ!**
(With 230 VAC)

UDP-240-24

To be released this autumn

Continuous: 240W
Peak: 400W
Output voltage: 24V



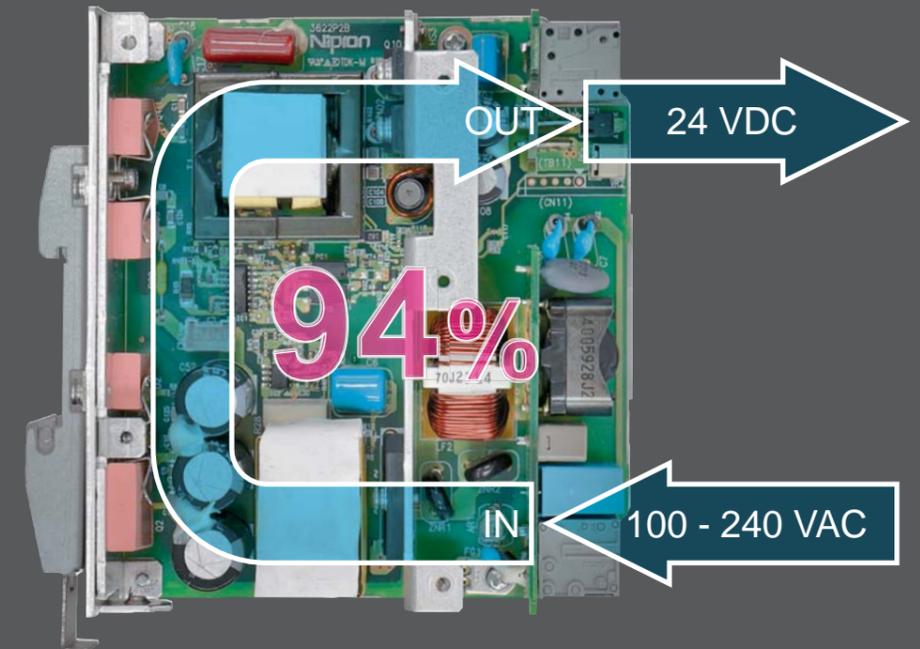
Low heat generation!

Max. efficiency of **93% typ!**
(With 230 VAC)

UDP-120-24

To be released

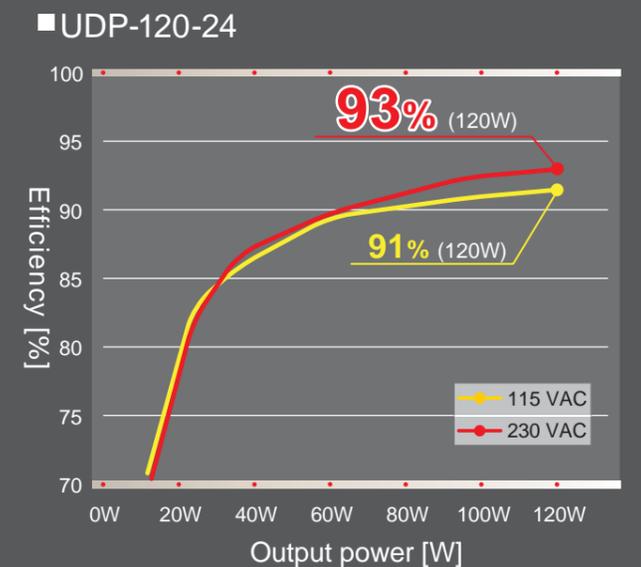
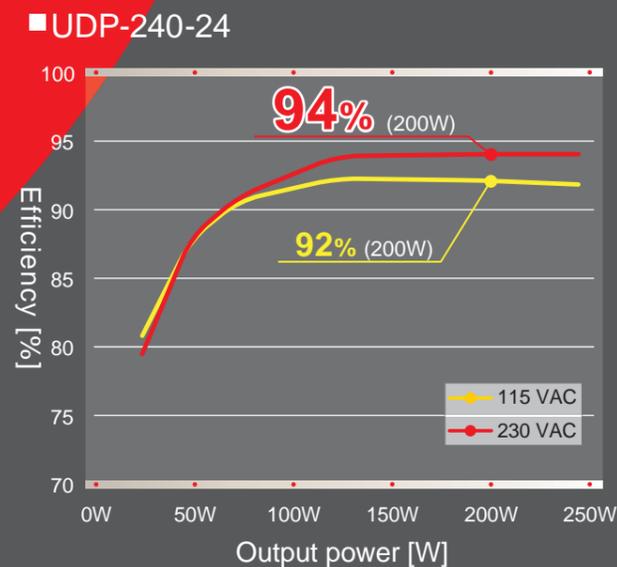
Continuous: 120W
Peak: 200W
Output voltage: 24V



Software switching is adopted in the UDP series.

Compared to conventional hardware switching, it suppresses heat generation due to the switching loss significantly, enabling miniaturization of built-in components. This makes it possible to produce smaller and more efficient power supply units.

Efficiency graph



Count on Nipron for DIN-rail power supplies.

<http://www.nipron.com>

Thin, low-heat-generation design results in a space-saving Control Panel

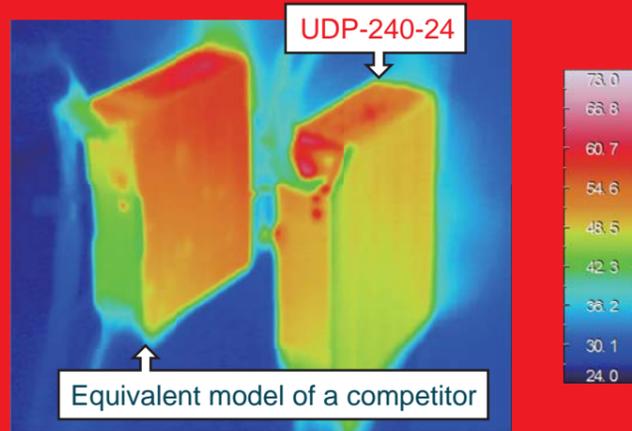
<http://www.nipron.com>

Features

POINT
01

Limits temperature rise in the control panel and supports miniaturization and extension of service life

The UDP series boasts a high efficiency with the maximum efficiency of 94% (UDP-240-24 with 230 VAC). Because the heat generation due to switching loss has been reduced drastically by attaining the high efficiency, the series makes it possible to reduce the man-hour and cost in addressing the heat in control panels.



POINT
03

Adoption of push-in terminals to reduce the burden of wiring and man-hour

The series adopts the push-in connection. Torque control is not required for these spring type terminals and, unlike screw type connections, there is no concern of wires becoming loose. With these terminals, it is possible to maintain the reliability while improving the workability.



* I/O terminals in the form of terminal block are also available.

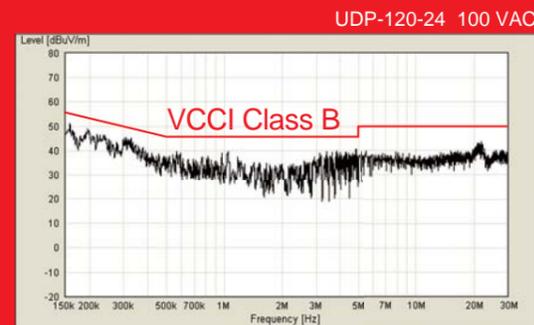
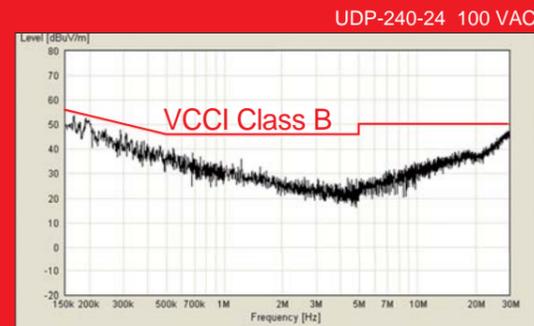
POINT
02

Reduction of noise filters possible

The power supply unit clears VCCI Class B for the conducted emission.

Because there is no need to install an external noise filter, it facilitates reductions in the cost and man-hour.

Conducted emission characteristics



POINT
04

Other features

▶ Supports approx. 1.7 times higher peak load

The product supports 10 second output of peak power, which makes it optimum for devices involving an inrush current, such as motors.

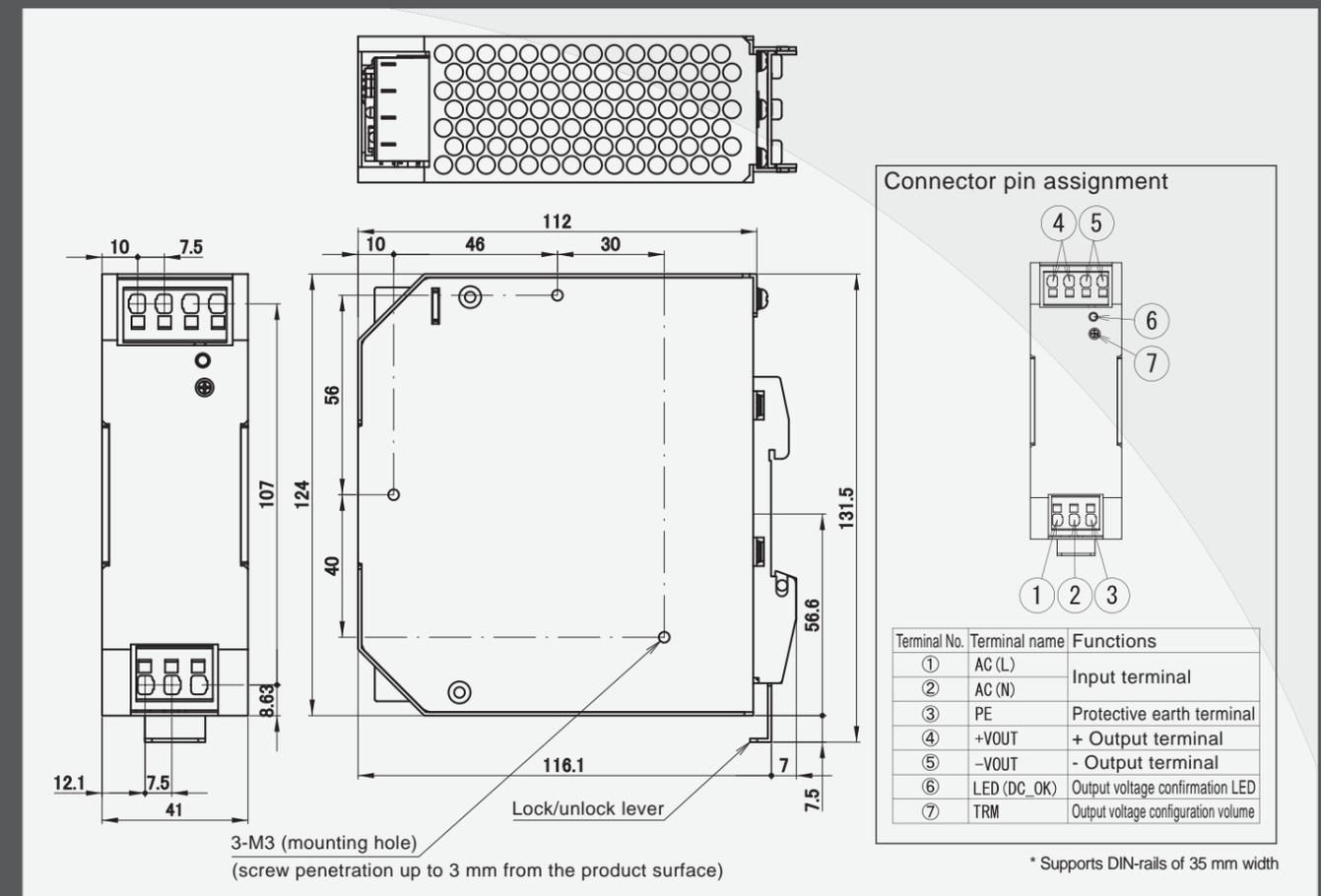


- ▶ EN62477-1 OVCIII compliant design
- ▶ The built-in arrestor enhances the resistance against lightning surges
- ▶ Notification of service life expiration supported (optional)
- ▶ Blackout backup is supported (optional)

Output specifications

	UDP-240-24	UDP-120-24
Output voltage	+24 V	+24 V
Continuous power	240 W	120 W
Peak power (within 10 s)	400 W	200 W
Efficiency	115 VAC	92% typ
	230 VAC	94% typ
Power factor	115 VAC	99% typ
	230 VAC	90% typ
Input voltage	85 - 264 VAC (with PFC, global input)	
Size (W×H×D) mm	41×124×112	35×124×112
Safety standards	Will obtain the UL(cUL)62368-1, EN62368-1 and UL508 certifications EN62477-1 OVCIII compliant design	

Outline drawing (UDP-240-24)



* Since the product is under development, the specifications and appearance shown here may change without notice.

The fanless UZP-600 Series overturns conventional wisdom.

UZP-600 series



PCB type AC-DC switching power supplies, the UZP-600 series, have achieved the peak power of 600 W continuous/1200 W peak, twice as high as the continuous output power, with a fanless construction. The product is optimum for motor loads, such as transfer equipment, requiring a large power for a short period. Because of its fanless construction, the risk of sucking in foreign matters is reduced and the requirement to service the fan is eliminated, enhancing the reliability of the device for which the PSU is used.

Continuous: **600W** Peak: **1,200W**
Output voltage: **24V/48V**

The high peak power twice as high as the continuous power is supported

If a large power (peak power) is required temporarily, such as an inrush current for a motor, this PSU supports the power twice as high as the continuous output power for a short period (5 seconds). This eliminates the need for choosing a PSU with a large continuous rated output matching the peak load, enables size reduction of PSU and facilitates reduction of unit's footprint and cost.

Peak **1200W**

Continuous **600W**

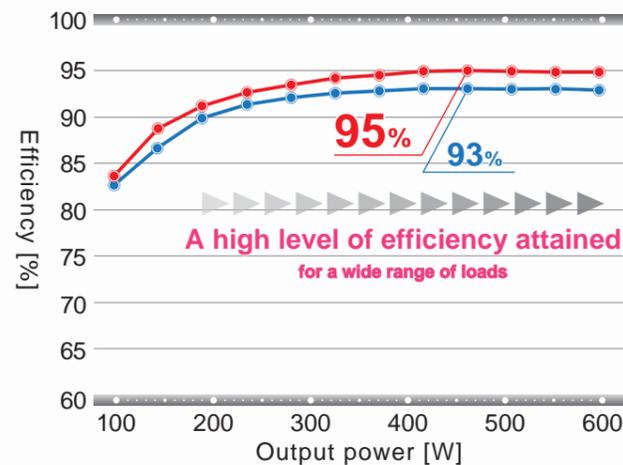
Twice the power

One of the best in the industry in terms of efficiency

A high level of efficiency 95%typ has been achieved for a 24 V output type, providing a significant support for saving energy and reducing CO2 emission.

Efficiency graph (an example of measurement)

[Measurement condition: —100 VAC input —230 VAC input]

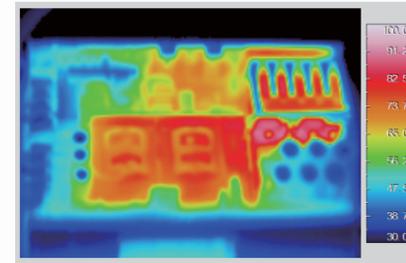


A high level of efficiency attained for a wide range of loads

A fanless unit delivering an amazing 600W continuous/1200W peak <http://www.nipron.com>

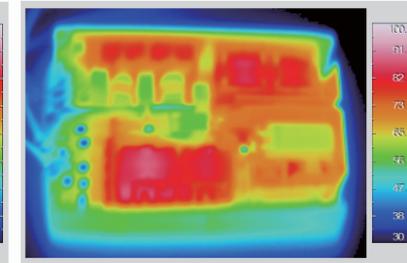
Extends the service life by limiting the heat generation

Nipron UZP-600-24



[Measurement condition] Input: 100 VAC, Output: 24V, 600W

Equivalent model of a competitor



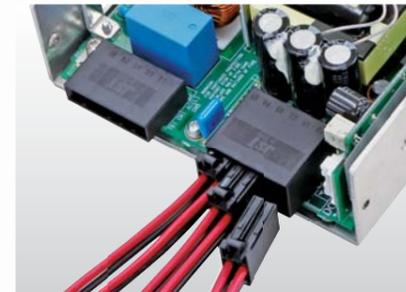
[Measurement condition] Input: 100 VAC, Output: 24V, 600W

Longer service life with low heat generation

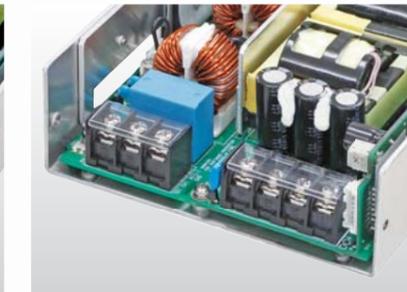
While it is a compact unit with a large power capacity, a longer service life has been realized with a high efficiency circuit design limiting the heat generation. This facilitates the enhancement of safety and reliability of the device.

Models with connectors and harmonica style terminal blocks are available

Connector type (horizontal)



Terminal block type (vertical)



Supports a wide variety of applications

The PSU comes with harmonica style terminal blocks or dividable nylon connectors as I/O terminals. (Both horizontal and vertical arrangements will be offered.)

Enhanced resistance to lightning surges



Avoid/mitigate the risk of lightning damage

By incorporating an arrester as a surge protector, the resistance to external surges due to lightning or other causes has been enhanced (8 kV).

▶ Surge voltage resistance ± 8 kV

Other features

- ▶ Miniature size of 5 x 9 inches
- ▶ Comes with a +12 V standby output
- ▶ Blackout detection signal and remote ON/OFF feature incorporated
- ▶ Instantaneous power failures can be addressed by connecting a capacitor unit
- ▶ Models certified for medical standards will also be added
- ▶ With a +12V output (optional) linked with the remote ON/OFF for the fan



Models with a cover will also be added

Highly efficient design reduces heat generation and increases equipment reliability. <http://www.nipron.com>

UZP-600, the difference maker!

Given below are the strengths of new PSU UZP-600 series, which supports the peak power double the continuous output power, a level unprecedented for a fanless unit, while inheriting the superior quality and high reliability of Nipron products.

Continuous output capacity (natural air cooling)



Continuous power output of 600 W possible with the supply of 90 VAC and above

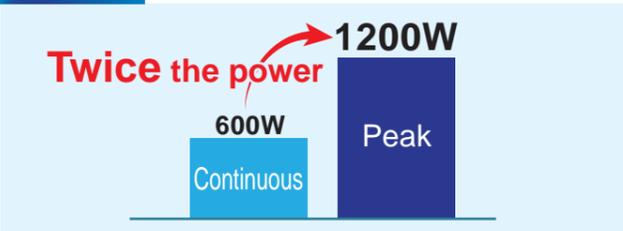
Continuous output capacity (forced air cooling)



Continuous output of 801.6 W enabled with forced air cooling

An optional output of 12 V for driving a fan is available

Peak power



The peak power double the continuous power (1200 W) supported

Lightning surge resistance



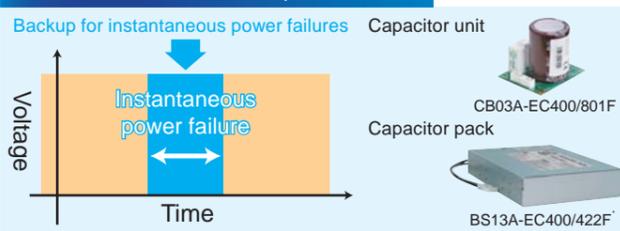
An arrester is built in to enhance the resistance to lightning surges (8 kV)

Dividable connectors



Use a required number of terminals matching the load

Can address instantaneous power failures



Instantaneous power failures addressed by connecting the capacitor unit

* A separate conversion harness is required.

Advantages brought about by the replacement

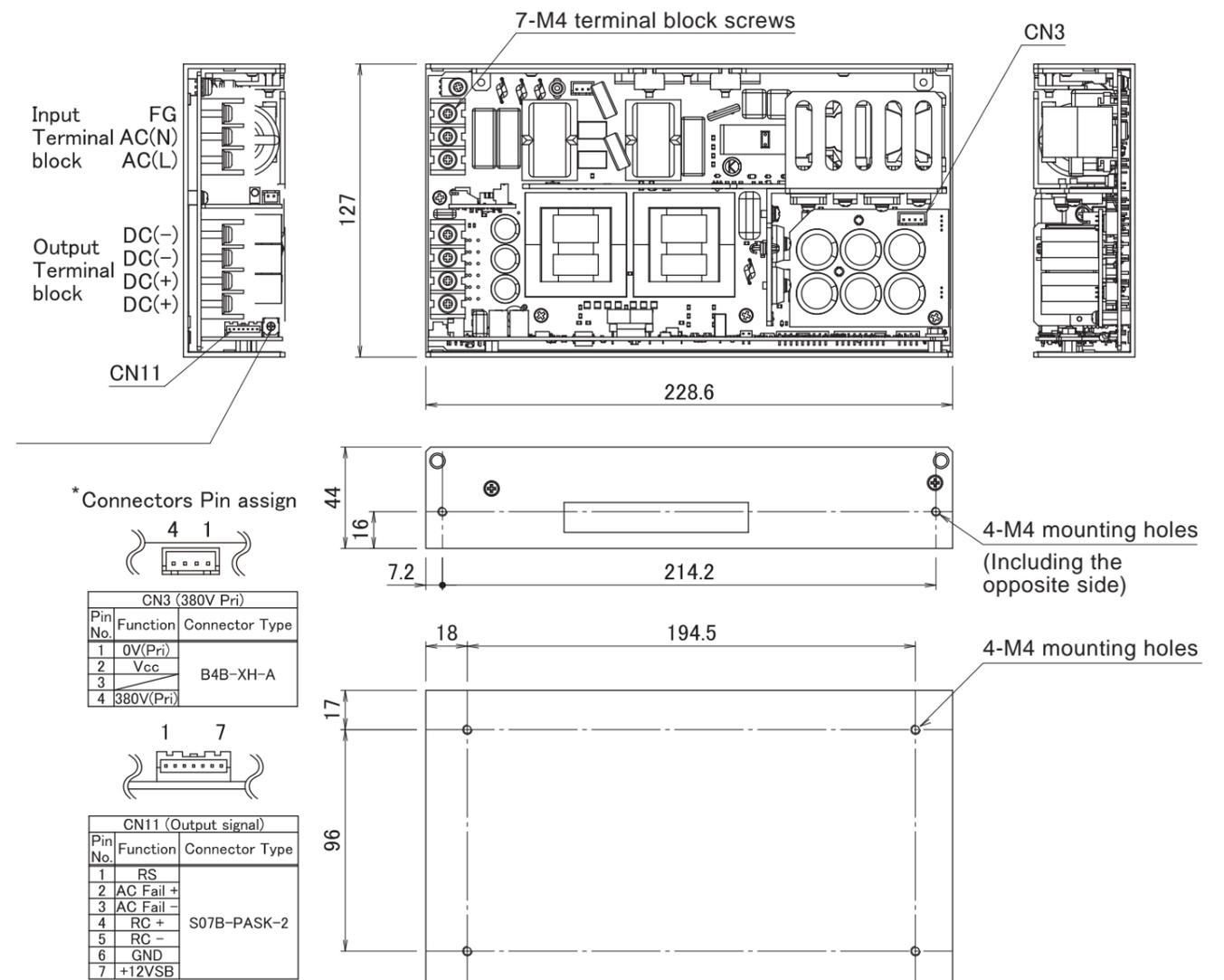
The UZP-600 is a fanless PSU with a large capacity of continuous power of 600 W, which can be increased to 800 W with forced air cooling, and the peak power of 1200 W and offers a number of advantages like fanless construction of the device, replacement of unit type PSUs, and so on.

Competitors' products	UZP-600
PCB type 300 W PSU x 2 units 	Single UZP-600 unit Continuous: 600W Peak: 1200W
Price and space for two units	<p>Cost reduction and miniaturization enabled</p>
Unit type (with a built-in fan) 600 W PSU 	Single UZP-600 unit Continuous: 600W Peak: 1200W
The trouble of servicing the fan, the risk of sucking in foreign matters	<p>Fanless construction achieved</p>

Output specifications

	UZP-600-24	UZP-600-48	Common output	
Output voltage	+24V	+48V	+12VSB	+12V FAN (optional)
Continuous current /continuous power (Natural air cooling)	25A 600W	12.5A 600W	0.42A 5W	0.25A 3W
Continuous current /continuous power (Forced air cooling)	33.4A 801.6W	16.7A 801.6W	-	-
Peak current/peak power (within 5 s)	50A 1200W	25A 1200W	-	-
Input voltage	85 - 264 VAC (with PFC, global input)			
Size (WxHxD) mm	127 (5 inches) x44x228.6 (9 inches)			

Outline drawing (Model with a vertically arranged terminal block)



* Since the product is under development, the specifications and appearance shown here may change without notice.

The new UZP-600 offers many advantages as a replacement unit. <http://www.nipron.com>

High-capacity fanless power supply suitable for motor loads <http://www.nipron.com>

Superior robustness to survive a severe and prolonged service

Optimum for deep learning and rendering, PSU for GPU servers

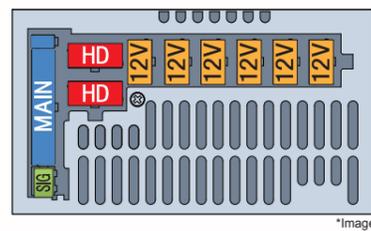


HPCSA-1500P-E2S

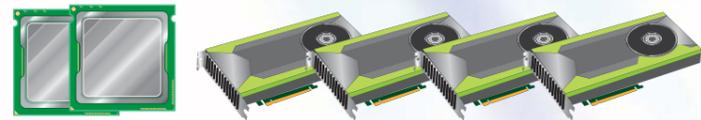
Continuous max. **1,200W**

Peak **1,500W**

- Reduced heat generation with the high efficiency design
- Low noise design by adopting a temperature controlled variable-speed fan
- Long-life design with the expected service life of 10 years or longer
- The use of through-hole plated double-sided circuit board
- With the high power output of max. 1200 W for +12 V 6ch, stable power can be supplied to the latest high-end CPUs and GPUs.
- Because the PSU supports detachable harness, with which only required cables are connected to the unit, it is possible to keep the interior of the case neat.



6ch +12 V power outputs for CPU/GPU



I/O specifications

Input	85 - 264 VAC (Global input)											
Output voltage	MAIN/HD		12V						MAIN/HD		+5VSB	
	+3.3V	+5V	+12V1	+12V2	+12V3	+12V4	+12V5	+12V6	+12V7	-12V		
Continuous maximum current/power	25A	25A	24A	24A	24A	24A	24A	24A	24A	24A	1A	3A
	Total 207.5W		Total 1200W								15W	
Peak current/power (within 5 s)	30A	30A	32A	32A	32A	32A	32A	32A	32A	1.2A	4A	
	Total 249W		Total 1500W								20W	
Minimum current	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A
Size (mm)	150(W)×85(H)×200(D)											

* Since the product is under development, the specifications and appearance shown here may change without notice.

A reliable, high-capacity ATX power supply suitable for deep learning

<http://www.nipron.com>



HPCSA-1000P-E2S

Continuous max. **822W**

Peak **1,000W**

I/O specifications

Input	85 - 264 VAC (Global input)							
Output voltage	MAIN/HD		12V			MAIN/HD		
	+3.3V	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+5VSB
Continuous maximum current/power	25A	25A	18A	18A	18A	18A	0.4A	3A
	Total 207.5W		Total 792W			4.8W		15W
Peak current/power (within 5 s)	30A	30A	25A	25A	25A	25A	0.6A	4A
	Total 249W		Total 1000W			7.2W		20W
Minimum current	0A	0A	0A	0A	0A	0A	0A	0A
Size (mm)	150(W)×85(H)×190(D)							

- High reliability design facilitating 24/7 nonstop operation at the rated power
- Reduced noise by the adoption of a temperature controlled variable-speed fan
- 3ch +12V power outputs for CPU/GPU supported



HN4-1000P-SAO

Continuous max. **822W**

Peak **1,000W**

I/O specifications

Input	85 - 264 VAC (Global input)							
Output voltage	MAIN/HD		12V			MAIN/HD		
	+3.3V	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+5VSB
Continuous maximum current/power	25A	25A	18A	18A	18A	18A	1.2A	3A
	Total 207.5W		Total 792W			14.4W		15W
Peak current/power (within 5 s)	30A	30A	25A	25A	25A	25A	1.2A	4A
	Total 249W		Total 1000W			14.4W		20W
Minimum current	0A	0A	0A	0A	0A	0A	0A	0A
Size (mm)	150(W)×85(H)×190(D)							

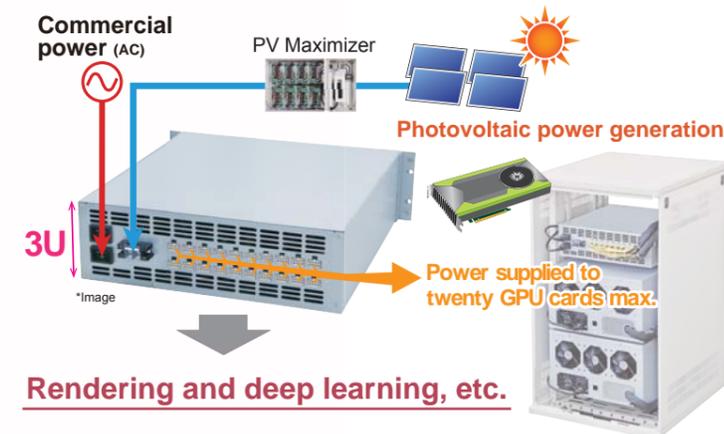
- Backup instantaneous and ordinary power failures with a connection of dedicated battery pack
- High reliability design facilitating 24/7 nonstop operation at the rated power
- 3ch +12V power outputs for CPU/GPU supported



Large capacity 12V single output power supply unit for GPU allowing the input of solar power

Supply a large 12 V power to GPUs

This is a PSU designed for computing applications involving devices with a large number of GPUs, such as rendering and deep learning, to use photovoltaic power effectively by supplying the power to devices without converting the direct current from photovoltaic power to AC.



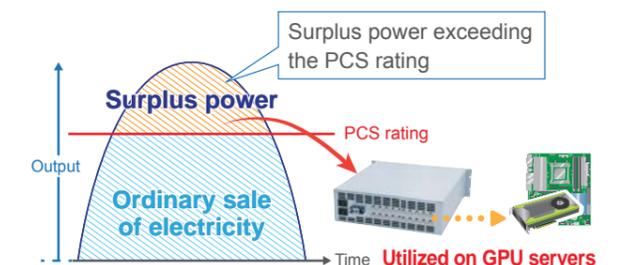
Rendering and deep learning, etc.

Continuous: **2700W** Peak: **3000W**

Size W×H×D : 430×132.4 (3U)×436

Features

- The PCS is unnecessary, the cost is reduced and the discussion for grid connection is not required.
- It takes both DC and AC, making it operable without the sunlight
- Switching can be made seamlessly
- 19" rack mount 3U power supply unit
- If the electric power is sold, it is also possible to propose the use of surplus power from overloading.



* Since the product is under development, the specifications and appearance shown here may change without notice.

Nipron offers many high-capacity power supplies for GPU servers.

<http://www.nipron.com>

President talks! TOP sales corner



30th Spotlight on the market for used solar facilities

The Importance of Renewing Essential Social Infrastructure

Recently, I have been reading newspaper articles and hearing stories from many quarters about increased activity in the sale of used facilities as well as high resale values. Many of the sellers are small and medium-sized companies that have already reaped the tax benefits of writing off all the depreciation of their equipment at once; moreover, they have already received many years of high feed-in-tariff (FIT) revenue from the sales of the electric power they have generated. It is quite evident that these companies have speculated that the current seller's market signals that this is a good time to sell.

The buyers are typically energy companies that require a low-carbon source of power, or new power companies, or infrastructure investment funds. With an eye on the post-FIT economy, I believe that solar power stations are expected to become an important element of the national social infrastructure.

The major companies that have become buyers are also targeting this sector. When one is buying used goods, any faulty parts are more likely to have been fully repaired. It is also likely that they would want to purchase a high-value-added power station with a PV Maximizer (for maximizing power generation) and the Guardmyan, an auxiliary unit that provides the ability to monitor any deterioration in power generation with high accuracy. It is possible that they would want to reduce maintenance costs as well through the O&M model. The Perfect-full O&M (PFOM) provided by Nipron allows for remote monitoring with high accuracy and eliminates the need for field inspections and the like, thus reducing costs.

On the other hand, looking at this situation from the seller's side, there are those who clearly want to improve the resale value of their power stations and sell them to take advantage of the higher value.

As for Nipron, we offer many products — including the PV Maximizer, PV Guardmyan, Power Storage Systems, and O&M contracts — that meet these needs, and we have abundant expertise and an excellent track record in this area.

If you have a need for any of the products and services I have introduced above, we would be pleased to take your order.

We would be happy to assist you through your company's EPC contact.

Setsuo Sakai

Representative Director & President

Invitation to exhibition



Participated in Embedded Systems Expo Osaka

For three days from 23rd to 25th of January, Nipron participated in the 3rd Embedded Systems Expo Osaka held at INTEX Osaka for the first time.

At the Nipron booth, the high reliability and large-capacity ATX power supply unit HPCSA-1000P, enabling 24/7 continuous operation at the rated power and suitable for deep learning and blockchain, which are becoming hot these days, and the new ATX power supply unit HPCSA-1500P to be introduced this year, with the maximum efficiency and supports output of large power — continuous power supply of 1200W and the peak power of 1500W, were featured as the main products. In addition, actual product of IoT compatible ATX power supply unit HPCSA-700P (IoT compatible model) enabling various monitoring, including the life expectancy, output voltage/current and troubles, were demonstrated. Also featured in the exhibition were the single output PSU UZP-600 series, supporting the continuous power of 600W and the astonishing peak power of 1200W with the fanless construction, and the large capacity 12V single output PSU "DC+AC hybrid power supply" for GPU which is under development, enables continuous power of 2700W and the peak power of 3000W and supports the input of solar power.

Each product attracted the attention of many visitors, leading to a number of inquiries, and the exhibition turned out to be a success.



NEW HPCSA-1500P



NEW UZP-600



A scene at the Nipron booth

Participated in the 9th INT'L SMART GRID EXPO

Nipron has participated in the 9th INT'L SMART GRID EXPO, which was held for three days from 27th of February to 1st of March at Tokyo Big Sight.

At the Nipron booth, a problematic string finding diagnosis system utilizing the PV Guardmyan with the "perfect-full 100% power sustained O&M service," the first of its kind in Japan, was introduced using a quiz format to make it easier to understand. Also included in the exhibition was the Neo eXpander, a charging/discharging rack system for medium to large-scale power storage systems that may be applied for surplus power storage and in emergency responses, along with a demonstration of "solar power x PSU for GPUs," in which a 3DCG rendering server with a large number of GPUs, which is often used for the movie production, is run on the photovoltaic power. Presentations that were popular in past exhibitions were also given and drew a large crowd who were interested in the products. It was a meaningful exhibition in which significant appeals were made for Nipron products in the field of solar power business, in which power storage and in-house power consumption are becoming hot.



A quiz to find problematic panels



A scene of presentation



A wide range of power supply units is available. Call us to find out more.

<http://www.nipron.com>

Voices of customers using the PV Maximizer



Interview

Supply of stable power from the PV Maximizer to a system with an HVDC (high voltage direct current) feeder



SAKURA Internet Inc. offers high quality Internet services centered around the data center business and undertakes the development of services and new businesses to satisfy customer needs. By using large capacity, high-speed communication lines, it runs five data centers with a high level of security and facility capabilities to offer server services like housing and hosting. It also undertakes the enhancement of computing power and dissemination of IoT services to actively develop new businesses.

Mr. Yohei Katayama, Hardware Group, Engineering Division, SAKURA Internet Inc.

[1] Backgrounds of introduction

Would you tell us what prompted you to start the photovoltaic power generation?

We run a data center business and, while studying the introduction of a technology called HVDC for the purpose of promoting energy saving activities, it came to our mind that the photovoltaic power generation, of which the output power is obtained in direct current, may have an affinity with the technology.

We started the effort with a hope of demonstrating the idea with our commercial establishments, instead of using a laboratory.

What initiated the encounter with Nipron?

As we progressed in the design and study in introducing the HVDC system, a constant voltage power supply with a built-in step-up DC/DC converter became necessary. We were told by a technical consultant that Nipron offers a product optimum for the purpose and that prompted us to contact Nipron.

What was the first impression of PV Maximizer?

At first, we had an idea that the price was a bit too high (a laugh).

Tell us why you chose PV Maximizer.

It satisfied our electrical requirements in adopting the HDVC system, of course, but it also offered an ease of handling as it did not require a separate external package when installing the system outside and allowed us to install the product in the same way as common junction boxes. The decisive factor was that it had the voltage/current/power measurement functions incorporated in the unit.

If we wanted to make an equivalent system using products from other companies, there would be an inconvenience of providing a separate measuring component, but with the PV Maximizer, the inconvenience is resolved and that was it.

We felt that the product offered a value worth the price.

Tell us about the anxiety and concerns you had before the introduction of PV Maximizer.

We were concerned if there would be any problem in the after-sales support. Especially if the product failed, we wanted an onsite service instead of sending it back. Because it is large and heavy in comparison with other power supply units offered by Nipron, it is essential that the support is provided onsite. We did not know if Nipron had such a scheme.

On the engineering aspect, we were worried if the load would be damaged by a lightning surge, with the PV Maximizer failing to stop it because the product is a non-insulation type.

[2] Effects of the introduction

Were you relieved of those anxieties and concerns after the introduction?

After the introduction, we actually experienced a failure but the sales person who took the case worked light-footedly and, in afterthought, there was no worry.

While engineering concerns have not been resolved completely, we took the step to introduce the product because common measures against lightning are taken, such as installing surge protectors and series reactors at important locations, and it was found that the theoretical probability of a lightning hitting our panels was very low at one in 200 years.

What benefits did you receive by adopting the HVDC system with the PV Maximizer?

First, because a power conditioner is not necessary, the biggest benefit is that the power conversion loss is very low. Also, because it has a strong measurement function, being able to measuring the voltage, current and power for each string, the fact that we could visualize the operational conditions of power generation equipment string by string in details was also a big benefit. Especially, being able to measure the I-V curve without stopping the operation is excellent.

[3] For the future

What do you expect from Nipron in the future?

We think that the PV Maximizer is a product like no other, based on a unique idea.

In the future, we expect Nipron to continue being a corporate that uncovers hidden user needs and protect the global environment.



Ishikari Photovoltaic Power Station, SAKURA Internet Inc.

The PV Maximizer has been adopted by many of our customers.

<http://www.nipron.com>

The Nipron Story, by Our President

Rebuilding the GP Business and Creating a Successor System

The name of the new era in Japan will be “Reiwa” as the country’s new emperor takes the throne on May 1, 2019. This represents the end of the Heisei era, a 30-year period during which the emperor and empress were instrumental in contributing to our wishes and prayers for peace. It is expected that His Imperial Highness Crown Prince Naruhito will assume the role of emperor and carry on the efforts to prolong this time of peace. I would like to express my gratitude for the dignity and blessings of this peace, and I remain dedicated to contributing to the effort to continue this legacy.

This year, Nipron hired a number of new employees, including eight university graduates and seven high school graduates. I am confident that each one of these new employees will grow to become a respectable member of society and a productive member of Nipron. I am very much determined to nurture and train these new recruits.

On the other hand, the economic environment is deteriorating at the moment due to a downturn in the Chinese economy, which has been impacted since last fall by trade tensions between the U.S.A. and China. In particular, the supply-demand balance of power supply for machine tools and semiconductor manufacturing equipment has decreased significantly. Our 38th fiscal period (the current fiscal year) is likely to fall far behind the results of our 37th fiscal period, in which we recorded 6.1 billion yen in sales. In order to achieve our sales target of 10 billion yen, we will have to undertake a fundamental review of our strategies and activities as well as our organizational structure. This will enable us to achieve a major breakthrough regarding the Green Power PSU business — positioned as a business of the future — which will be required to earn slightly more than 4 billion yen. Nipron has decided to restart its business development organization, which includes revising the strategy and organization of GP product development technology, engineering, and GP business as a new GP-PJ organization by appointing Shigekazu Miyake as general manager during this fiscal period. The era has begun to shift dramatically from the Feed-in Tariff scheme (FIT) to increased ESG investment and RE100, while in-house power consumption is beginning to play a central role. Moreover, I believe the resale market for used power stations is beginning to boom, a trend that is creating a good environment for Nipron. This is positive for the PV Maximizer, which enhances the power generation effect when repowering current power stations for renewal at the time of resale; the PV Guardmyan, an auxiliary unit that provides high-precision and high-accuracy monitoring of power generation in great detail; and the Neo eXpander, which standardizes power storage systems. I believe this presents a great opportunity for us, in light of the many products we offer. All PJ employees must commit to working hard for our big breakthrough and for the effort to achieve 4 billion yen in sales for our GP Business sooner rather than later.

The economy will likely remain sluggish, and the possibility of a temporary recession remains, but we seek to further strengthen our foundation and prepare for the expansion of our GP business. The single Chinese character chosen for this year is *hone*, the Japanese term for “bone,” so we are committed to creating an organization with a framework that is strong yet flexible, as our mission is to create a Nipron with robust vitality. This is linked to our effort put a finishing touch on our business life. We intend to work hard to attract and develop people with a strong backbone as we seek to build a solid framework.

In our 39th fiscal period (starting in July 2019), we will transition to a system of two vice presidents and transfer authority in preparation for the future. Vice-president Yoshio Matsubara will oversee the Sales Department and the R&D and Technical Departments, while vice-president Hideto Kawakita will be responsible for the Corporate Planning Department, the Manufacturing Department, and the Production and Quality Technique Department. As representative chairman and president of Nipron, I will be responsible for formulating management strategy and overseeing the entire system. In terms of personnel development, we will focus on consciously creating a successor system, with a core generation who were born between 1960 and 1980 as the next-generation management class and those born between 1980 and 2000 as the core of the third generation.

As a significant policy for creating a vital and lasting Nipron, we will continue to pursue value-added and profit-maximizing principles instead of focusing on sales for their own sake. We will reinvest profits in order to develop greater toughness and will continue to provide our customers with the products and services they expect. We will reinvest 30% of our operating income and continue to address the challenges of the new era by allocating technology and filling product needs. We will invest one-third of the amount into R&D and product development; another third in our personnel (in the form of increased compensation, training, and talent-spotting and the like); and the remaining third in modernization (reducing labor and manpower needs with robotics, and committing to domestic manufacturing). Our target for operating income margin before investment is 15 to 20% of sales, and we will actively promote ESG investments and pursuit of the SDGs, which will be translated to our GP business.

On a personal note, I intend to move forward effectively for the next five or ten years and continue to demonstrate my passion in the effort to achieve what I have been outlining in this space. In addition, I am committed to maintaining a sense of mission to contribute to Japan and society at large, and to remain engaged in my work with a buoyant attitude.

In conclusion, I would like to thank all of you for your continued guidance and look forward to your support in the future.

Setsuo Sakai
April 2019

 **Nipron Co., Ltd.** <http://www.nipron.com>

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