

Nipron Wave

Vol.76

Highlights

1 Single-output power supplies/PC power supplies

New products and power supplies with backup for momentary power failure, etc.
Upcoming new products currently in development

2 [New product] DC ground fault detector GFD-DC1000V

High voltage and wide range input DC ground fault detector

Single-output power supplies

With many features, including high peak output, high efficiency, and medical standard certification, etc.

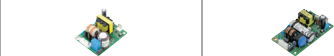
Lineup

You can find the ideal power supply for your devices.

Nipron's single-output power supplies cover various output and are designed for reliability and functionality throughout the entire series.

- Designed and made in Japan
- For safety, reliability, and high quality
- Long-term stable supply
- Essentially 10 years of stable supply since their launch
- Wide operating temperature range
- Also suitable for severe environments

Under development



FZP-025 FZP-040

Continuous output (W)	13.2-26.4	30-39.6
Peak output (W)	16.5-31.5	40-60
Output voltage (V)	3.3,5,12,15,24	5,12,15,24
Size W×H×D (mm)	50×28×62.5	50×26×87.5

Certified with medical standards



mFZP-075

Certified with medical standards



UZP-120



mUZP-120

Certified with medical standards



mUZPT-120

Certified with medical standards



UZP-150

Certified with medical standards



mUZP-150

Continuous output (W)	50-75	100.8-120	100.8-120	100.5-120	150-153.6	150-153.6
Peak output (W)	75-150	200.4-201.6	200.4-201.6	200.4-201.6	400.8-401.4	400.8-403.2
Output voltage (V)	5,12,15,24	12,24,36 ^{*1}	12,24	12,15,24	12,18,24,36 ^{*1} ,48	12,18,24,36 ^{*1} ,48
Size W×H×D (mm)	55×28×133	62×27×155	62×27×155	62×38×155	75×35×160	75×35×160

Certified with medical standards



UZP-220



mUZP-220

Certified with medical standards



mUZP-220/520P

Certified with medical standards



OZP-240/600P

Certified with medical standards



OZP-350

Certified with medical standards



mOZP-350

Continuous output (W)	180-220.8	180-220.8	220.8	201.6/240 (at 100/200 VAC)	300-352.8	300-352.8
Peak output (W)	400.8-401.4	400.8-401.4	520.8	400.8-403.2/600 (at 100/200 VAC)	504-601	504-601
Output voltage (V)	12,18,24,36,48	12,18,24,36,48	24	24,48	12,15,24,30,36,48	12,15,24,30,36,48
Size W×H×D (mm)	75×36×160	75×36×160	75×36×160	73×41×222	95×47×222	95×47×222

Certified with medical standards



UZP-400



mUZP-400

Certified with medical standards



UZP-400/1200P

Certified with medical standards



mUZP-400/1200P

Certified with medical standards



UZP-600

Certified with medical standards



UDP-120

Continuous output (W)	320.4-403.2	320.4-403.2	402-403.2	403.2	600-601.2	120
Peak output (W)	504-604.8	504-601.2	1200-1202.4	1200	1200-1202.4	201.6/300 (at 100/200 VAC)
Output voltage (V)	12,24,36,48,56	12,24,36,48	24,30,36,48	24,48	24,30,36,48	24
Size W×H×D (mm)	84×45×180	84×45×180	84×45×180	84×45×180	127×44×228.6	35×124×117.5



UDP-180



UDP-240



GPSA-600



GPSA-1000



GPSA-1500



GPSA-5000

Continuous output (W)	180	240	600-601.2	907.2/1008 (at 100 VAC/115-240 VAC)	1056-1104 (at 100 VAC) 1512-1632 (at 200 VAC)	4800-4992 ^{*2}
Peak output (W)	201.6/300 (at 100/200 VAC)	400.8	960-1200 (at 100 VAC) 1200-1440 (at 200 VAC)	1188-1200 (at 100 VAC) 1320/2016 (at 115/240 VAC)	1320 (at 100 VAC) 2040-2112 (at 200 VAC)	6000
Output voltage (V)	24	24	12,24,36,48	24,48	24,48	48,96
Size W×H×D (mm)	35×124×117.5	41×124×117.5	61×128×240	61×128×240	82×128×250	198×125×314

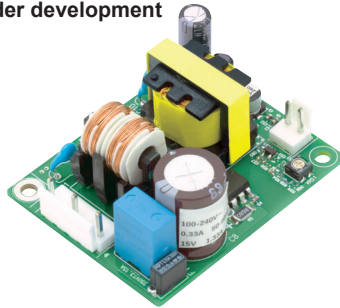
^{*1} Under development ^{*2} With three-phase 180-240 VAC input

<http://www.nipron.com>

Ultra-small, high-efficiency, single-output power supply

FZP-025 series

Under development

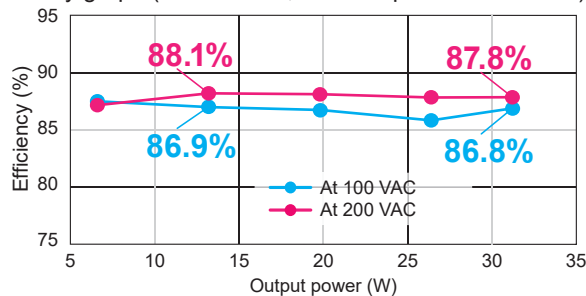


Output voltage	+3.3 V	+5 V	+12 V	+15 V	+24 V
Continuous output current/power (Convection)	4 A 13.2 W	4 A 20 W	2.1 A 25.2 W	1.7 A 25.5 W	1.1 A 26.4 W
Continuous output current/power (Forced air)	4 A 13.2 W	4 A 20 W	2.6 A 31.2 W	2.1 A 31.5 W	1.3 A 31.2 W
Peak current/power (within 10s)	5 A 16.5 W	5 A 25 W	2.6 A 31.2 W	2.1 A 31.5 W	1.3 A 31.2 W
Input voltage	85-264 VAC (worldwide range)				
Size W×H×D	50×28×62.5 mm				

High efficiency

Its high efficiency resulting in low heat generation enables miniaturization and long life.

Efficiency graph (FZP-025-24, an example measurement)



Supports peak power

Peak power support model, enabling peak output (up to 120% of the continuous rated output) for a duration of up to 10 seconds.

Peak **31.2W**

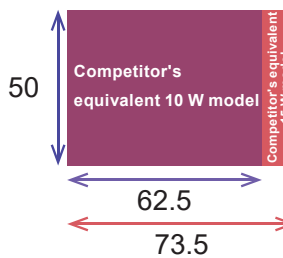
Continuous **25.2W**

^{*FZP-025-12}

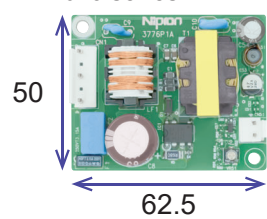
Smaller with higher capacity

Up to 25 W output in a size equivalent to competitor's 10 W model

Competitor's equivalent 10 W/15 W model



FZP-025 series

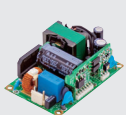


Other features

- Clears VCCI Class B for conducted emissions
- The output voltage is adjustable with the potentiometer.

Next new products that meet various needs

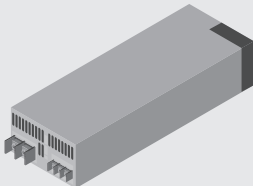
75 W board-type power supply dedicated for 100 VAC input



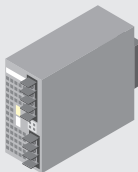
200 W-class board-type multi-output power supply



600 W fanless power supply with 2500 W peak power

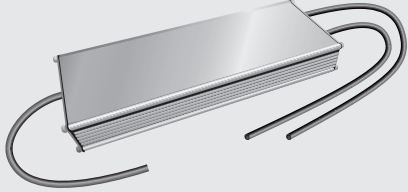


1000 W enclosed power supply



Product proposal

Fully sealed design, meeting IP67 dustproof and waterproof standards, ideal for outdoor use



Features

- IEC61000-3-2 Class C (harmonic standards for lighting equipment)
- PSE compliant
- Adjustable brightness by external signal
- Possible to enhance the resistance against external surges due to lightning

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

<http://www.nipron.com>

DIN-rail power supplies

Small sized model with slim and high efficiency design

Avoid/mitigate the risk of lightning damage

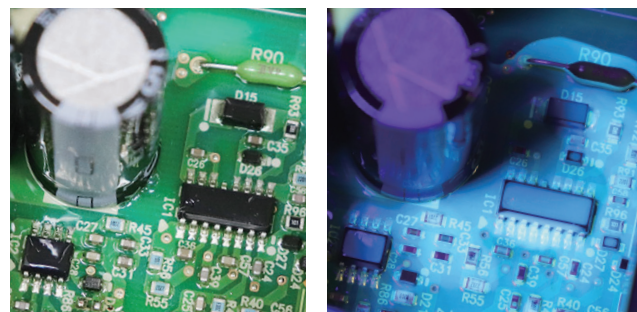
UDPseries



UDP-240-A24 Continuous: 240W Output voltage: 24V Peak: 400W Input voltage: 85-264 VAC Size (W×H×D): 41×124×117.5mm	UDP-180-A24 Continuous: 180W Output voltage: 24V Peak: 200W/300W (100/200 VAC) Input voltage: 85-264 VAC Size (W×H×D): 35×124×117.5mm	UDP-120-A24 Continuous: 120W Output voltage: 24V Peak: 200W/300W (100/200 VAC) Input voltage: 85-264 VAC Size (W×H×D): 35×124×117.5mm
--	---	---

Coated PCB as standard

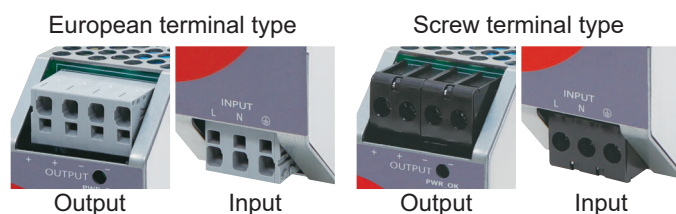
It contributes to the long service life of products in harsh environments.



Black light irradiated

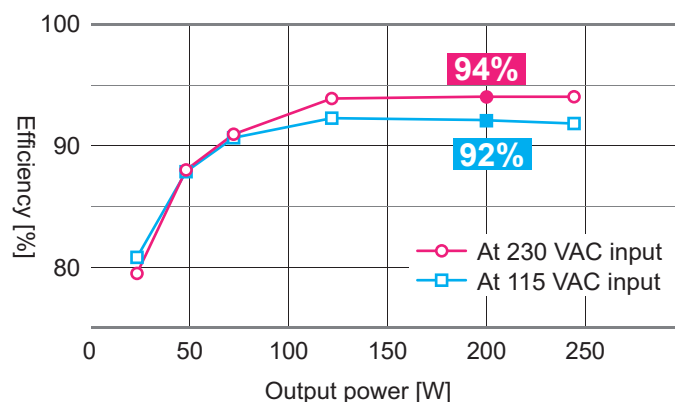
Other features

- Clears VCCI Class B for the conducted emission without an external noise filter
- Wide operating temperature range from -20°C to 70°C (derating required)
- Able to start-up at -40°C environment
- Equipped with a variable resistor to adjust output voltage
- Built-in arrester to avoid/mitigate the risk of lightning damage
- Able to support SEMI F47
- EN62477-1 OVC III compliant design
- Available for European terminal type or screw terminal type as I/O terminals



Designed for high efficiency

Efficiency graph (UDP-240, an example measurement)

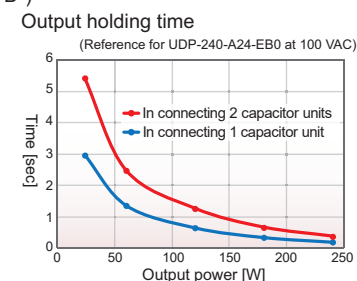


Backup for momentary power failure (capacitor units)

This product can extend the output holding time of the UDP series and take measures against abnormal input such as momentary power failure. (Compatible models: UDP-***-A24-*B*)



DS01A-EC400/172F-B
capacitor unit



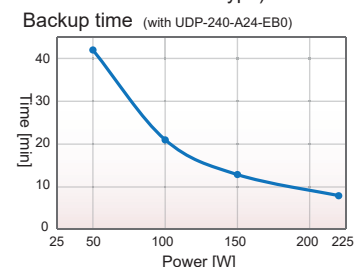
- Parallel connection of units extends the output holding time.
- Electrolytic capacitors do not require frequent replacement in contrast to batteries. (expected life: approx. 15 years)
- Blackout detection signal, AC_FAIL, comes as standard.

Backup for blackout/momentary power failure (backup units)

This product can realize uninterruptible power backup during blackouts for the UDP series. (Compatible models: all UDP series of 24 V type)



DS02A-L24/2.5L-B
backup unit



- Able to detect and notify about various battery abnormalities.
- Configurable backup time after AC power outage by setting the dip switch (4 options: 1 min., 3 min., 5 min., and until the discharge termination voltage)
- Status indicator of the backup unit by LED

UDP series with service life indicator

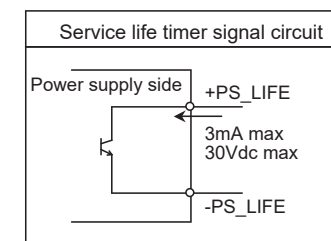
UDP-***-A24-**X-B



UDP-240-A24-**X-B Continuous: 240W Output voltage: 24V Peak: 400W Input voltage: 85-264 VAC Size (W×H×D): 41×124×117.5mm	UDP-180-A24-**X-B Continuous: 180W Output voltage: 24V Peak: 200W/300W (100/200 VAC) Input voltage: 85-264 VAC Size (W×H×D): 35×124×117.5mm	UDP-120-A24-**X-B Continuous: 120W Output voltage: 24V Peak: 200W/300W Input voltage: 85-264 VAC Size (W×H×D): 35×124×117.5mm
--	---	---

Service life indicator

The service life indicator is a feature to compute the level of degradation of electrolytic capacitors from the parts temperature and notify when the product is nearing the end of its life with a signal and LED light when the estimated remaining life drops to 20% or the cumulative operating hours reaches 15 years excluding the period in which the system is not energized.



LED display

USB PD power supply for DIN-rail

UDP-200-APD-T00-B

Under development



Port	USB-C Port 1					USB-C Port 2				
Output voltage	5 V	9 V	12 V	15 V	20 V	5 V	9 V	12 V	15 V	20 V
Output current	3 A	3 A	3 A	3 A	5 A	3 A	3 A	3 A	3 A	5 A
Output power	15 W	27 W	36 W	45 W	100 W	15 W	27 W	36 W	45 W	100 W
	Max. 100 W					Max. 100 W				
Total output power	200 W									
Efficiency	88% typ. (at 115 VAC) / 90% typ. (at 230 VAC)									
Input voltage	85-264 VAC (worldwide range)									
Safety standard	UL62368-1(c-UL), IEC62368-1, PSE (ordinance clause 2) compliant CE marking									
Size (W×H×D)	With DIN-rail bracket 41×124×117.5 mm									

Two type-C ports with an output of 100W max.

Type-C port enables a total output power of 100 W (20V 5A) max for a single port. (Output settings for each port are configured based on communication requests from devices compatible with USB PD standard.) This makes it possible to supply power to two different devices at once.



Other features

- Compact and space-saving with a slim design
- The built-in arrester enhances the resistance against external surges due to lightning or other causes.
- Wide operating temperature range from -10°C to 40°C
- Long-term stable supply designed and made in Japan

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

<http://www.nipron.com>

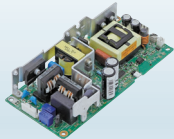
<http://www.nipron.com>

DC input single-output power supplies

DC-DC switching-mode power supplies

Uzd-150-HV series

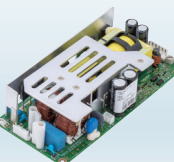
Support max. 260% high peak



Input voltage: **120-400 VDC**
Continuous: **150-153.6 W**
Peak: **400.8-401.4 W**
Output voltage: 12-48 V
Size: 75×35×160 mm (W×H×D)

Uzd-400-HV series

Small size and large capacity




Input voltage: **120-400 VDC**
Continuous: **320.4-403.2 W**
Peak: **504-601.2 W**
Output voltage: 12-48 V
Size: 84×45×180 mm (W×H×D)

Uzd-600-HV series

Under development


Small size, large capacity and high peak



Input voltage: **120-400 VDC**
Continuous: **600 W**
Peak: **1200 W**
Output voltage: 24-48 V
Size: 127×44×229.6 mm (W×H×D)

Uzd-220-HV series

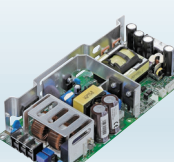
Low standby power consumption



Input voltage: **120-400 VDC**
Continuous: **180-220.8 W**
Peak: **400.8-401.4 W**
Output voltage: 12-48 V
Size: 75×36×160 mm (W×H×D)

Ozd-350-HV series


Low heat generation with a high-efficiency circuit



Input voltage: **120-400 VDC**
Continuous: **300-352.8 W**
Peak: **504-601 W**
Output voltage: 12-48 V
Size: 95×47×222 mm (W×H×D)

Udd-240-HV/A24-E00

DC input power supply meets safety standards



Input voltage: **120-400 VDC**
Continuous: **240 W**
Peak: **400 W**
Output voltage: 24 V
Size: 41×124×117.5 mm (W×H×D)

UL62368-1, CSA62368-1(c-UL) certified [Certification range: 135 to 350 VDC]
UL508 certified [Certification range: 135 to 310 VDC]

High-capacity single-output power supplies

High capacity/high efficiency/multifunction

GP1UT-6000-400-TES

1U size slim and high-capacity output power supply



Continuous max.: **6600-7200 W**
Input voltage: **Three-phase 170-264 VAC**
Size: 444×43×500 mm
(W×H×D excluding the screw terminal blocks +22 mm)

Output voltage	+400V	+12VSB
Adjustable output voltage range	240-400 VDC	12 VDC
Rated current/power At rated voltage operation	16.5 A 6600 W	0.4 A 4.8 W
Rated current/power At rated current operation	18 A typ 7200 W typ	0.4 A 4.8 W
Min. current	0 A	0 A

1U size slim design

1U size with 43 mm height enables rack mounting



Other features

- Clears VCCI Class A for conducted emissions
- Supports CVCC output
- Supports three-phase harmonic current regulation (IEC 61000-3-12 compliant)
- Power can be increased by up to 3 units in parallel, and standard accessories are also available.
- Supports output voltage/output current signal
Possible to control the output voltage (60%–100%)/output constant current (60%–100%) by external voltage input

GP6UT-10K-400-PES

Under development

High-voltage/High-capacity output power supply

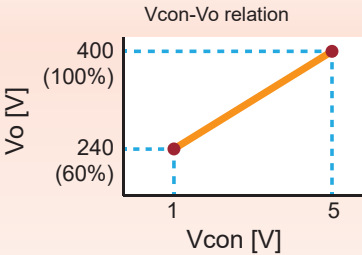


Continuous max.: **7560-10800 W**
Input voltage: **Three-phase 180-528 VAC**
Size: 255×145×460 mm
(W×H×D excluding the screw terminal blocks +22 mm)

Output voltage	+400V	+12VSB
Adjustable output voltage range	240-400 V	12 V
Rated current/power (230 VAC)	19.6A typ 7560W	0.4A 4.8W
Rated current/power (480 VAC)	27A typ 10800W	0.4A 4.8W
Min. current	0A	0A

Supports output voltage/output current control signal

Possible to control the output voltage (60%–100%)/output constant current (60%–100%) by external voltage input



Other features

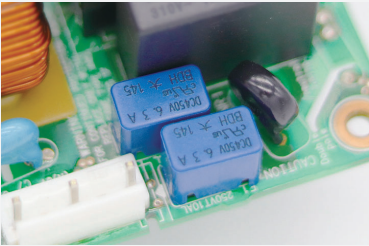
- Supports CVCC output
- Supports three-phase harmonic current regulation (IEC 61000-3-12 compliant)
- Supports three-phase 200–480 VAC input
- Low-level heat generation by reducing power loss
Achieves high efficiency of 94.5% typ. with 480 VAC input, which reduces heat generation. Also helps to cut work and costs associated with heat management.

Advantages of Nipron's DC input power supplies

External DC power fuse not required

Common AC-DC power supply units work with the supply of DC power. However, because the internal power protection fuse is made for AC power supply, an external DC power fuse is required to use such PSUs safely and this results in an added burden in arranging and connecting parts. Since Nipron's DC input power supply has a DC power fuse integrated in the unit, no added man-hours or cost are required.

We also have models certified to the safety standard as DC input power supply in our lineup.



* Feel free to contact us for DC input power supplies on this page.

<http://www.nipron.com>

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

<http://www.nipron.com>

Power supplies for PCs

Enhancing the added value of embedded devices with high reliability of domestic design and production.

(UPS function embedded) Nonstop power supplies for PCs

HNSP5-350P series

Built-in lithium-ion battery inside ATX power supply



Continuous: **245 W**
Peak: **346 W**
Size: 150×85×140 mm
(W×H×D)

Ideal for replacing existing ATX power supplies

Backup for blackouts is possible without installing an external UPS by replacing the ATX power supply already installed in the PC with the HNSP5-350P.

Space-saving with no space required for battery installation

Eliminating the need for an external battery and UPS, as the battery pack is built into the housing.

Built-in battery
in a housing



*Concept

HNSP9-520P series

ATX power supply with +24V/+48V output are available



Continuous: **400 W** Peak: **520 W**
Size: 150×86×140 mm
(W×H×D)

- 80PLUS BRONZE certified
- Minimum load current 0A for all outputs

Compatible battery packs

BS11A-P24/2.3L	Lead-acid battery pack
RBS02A-P24/2.3L	Lead-acid battery pack
BS10A-H24/2.0L	Nickel-metal hydride battery pack

HPCSF-400P-X2B

Small-sized SFX power supply



Continuous: **310 W**
Peak: **346 W**
Size: 125×63.5×125 mm
(W×H×D)

Compatible battery packs

BS28A-H350/2.5L	Nickel-metal hydride battery pack
-----------------	-----------------------------------

HPCFX-350P-X2B

Small-sized Flex ATX power supply



Continuous: **245 W**
Peak: **346 W**
Size: 81.5×41×150 mm
(W×H×D)

Compatible battery packs

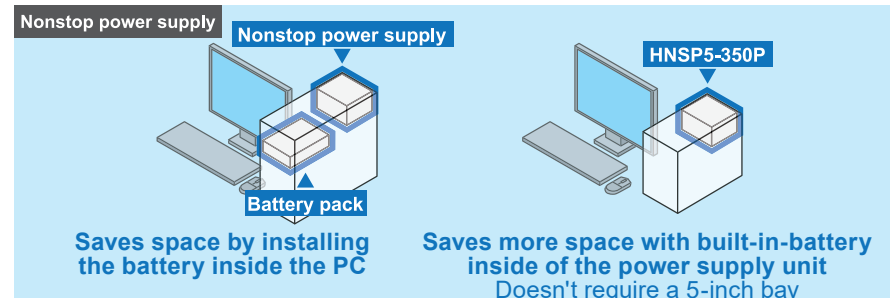
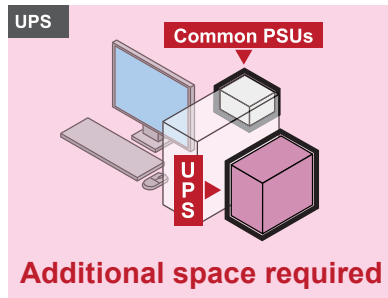
BS28A-H350/2.5L	Nickel-metal hydride battery pack
-----------------	-----------------------------------

Features of the Nonstop PSU

With our unique charging/discharging technology, uninterrupted power backup can be achieved by simply connecting a battery pack to a PSU that supports the feature.

Save space by eliminating the external UPS

The installation of a battery pack inside the housing makes it an optimum choice for PCs with the 5-inch bay occupied and replacing existing ATX PSUs.



Power feeding with no instantaneous interruption.

Nonstop power supply does not require time to switch to battery operation in case of a blackout.

High-capacity power supplies for PCs

HPCSA-1500P-E2S

High-capacity/high-efficiency power supply for PC



Continuous: **1200 W**
Peak: **1500 W**
Size: 150×85×200 mm
(W×H×D)

HPCSA-700P Series

Highly reliable ATX power supply



Continuous: **600 W**
Peak: **700 W**
Size: 150×85×150 mm
(W×H×D)

More ATX power supplies available from our lineup.

Medical standard certified PC power supplies

mPCSA-500P-X2S

IEC60601-1 Ed. 2, Ed. 3 MOPP certified



Continuous: **300 W**
Peak: **500 W**
Size: 150×86×140 mm
(W×H×D)

mHPCSF-400P-X2S1

IEC60601-1 Ed. 3.2 MOOP certified



Continuous: **310 W**
Peak: **400 W**
Size: 125×63.5×125 mm
(W×H×D)

mNSP3-450P Series

IEC60601-1 Ed. 2, Ed. 3 MOPP certified



Continuous: **300 W**
Peak: **450 W**
Size: 150×86×140 mm
(W×H×D)

Nonstop power supply

mHNPS4-1000P Series

IEC60601-1 Ed. 3 MOOP certified

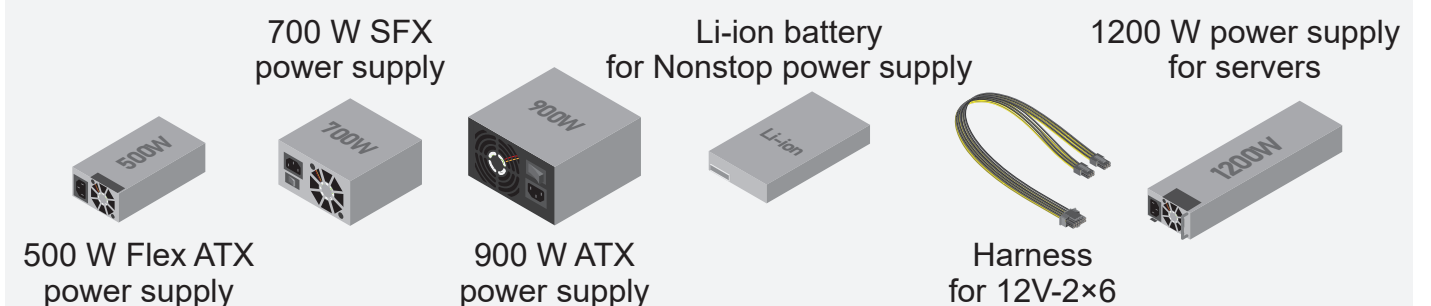


Continuous: **822 W**
Peak: **1000 W**
Size: 150×85×190 mm
(W×H×D)

Nonstop power supply

*Please use the battery pack, BS25A-H350/2.5L, together as this power supply has obtained safety standards as a set.

Next new products that meet various needs



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

<http://www.nipron.com>

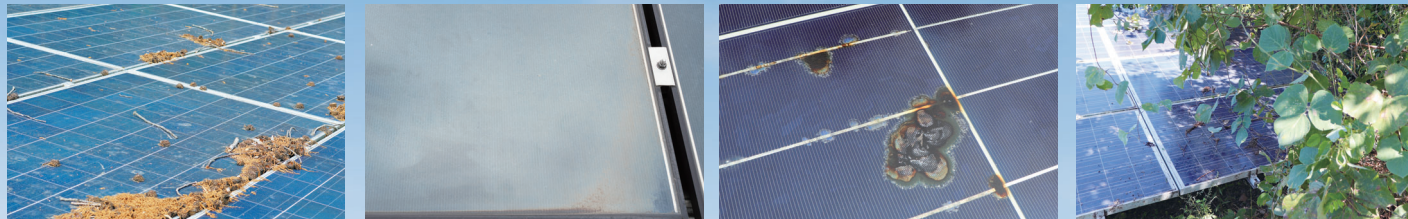
<http://www.nipron.com>

Improve Repowering with PV Maximizer

Just replace the power conditioner? Well, you can do more.

In PV power stations, solar panels also deteriorate with age in addition to the power conditioner and the power generation will drop with time. The speed of deterioration varies depending on the panel and the panel with the highest level of deterioration may affect the power generation of entire string.

MPPT for PV Maximizer operations offer the best performance of energy creation in every PV string without affected by changes in condition.



Degradation of solar panels

In general, the string voltage would drop if solar panels deteriorate. The progress of deterioration varies depending on the panel and strings with deteriorated panels affect other strings with less deterioration, reducing the power generated.

Failures and shades of solar panels

Failure of solar panels and those in shades not only drop the power generation of respective panels, but also affect the string, reducing the power generation of entire system.

MPPT for PV Maximizer operations offer the best performance of energy creation in every PV string.

DC/DC converters for solar power generation

PV Maximizer

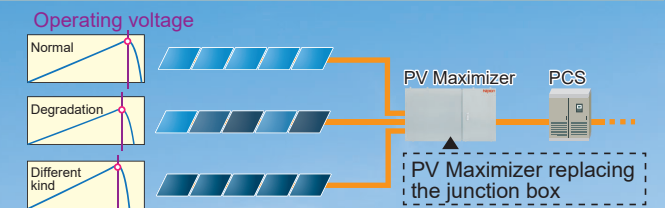
- Supports a max. input current (operating current) of 14 A
- Remote monitoring/diagnosis of all strings
- High reliability and long life attained because of the elimination of electrolytic capacitors and fans.



<http://www.nipron.com>

Mixture of different types of solar panels is possible

There are reports that replacement panels are not available when it is necessary to replace existing solar panels for maintenance purposes, If a string consists of panels that are different from existing solar panels, their power generation capacity may not be fully utilized. PV Maximizer performs MPPT control for each string. It prevents the drop of string voltage caused by uneven number of panels in series connection and mixture of different panels and maximizes power output.



Individual and optimum control of string operating voltage with PV Maximizer
Enable power generation at the maximum point for all strings

The power generation efficiency of PV Maximizer

On the rooftop of Nipron's Hanshin Factory, plots of PV string output and actual measurements of insolation were taken by switching the PV Maximizer ON and OFF every 24 hours. Approximate lines were drawn for actual measurements obtained in both periods in which the control was ON and OFF to compare the power generation amount under the same insolation condition.

Solar plant overview

[Location] Hanshin Factory (Amagasaki, Hyogo)
[Total Generating Capacity] 123.5 kW [Total Number of Strings] 104 rows
[Installation] 2008 [Testing Period] April 1st to 30th, 2019
Mitsubishi Electric solar panel module (polycrystalline) Solar Frontier solar panel module (CIS)
Completed in September 2008 Completed in September 2015 (addition)
101.75 kW (550 panels) 21.76 kW (128 panels)

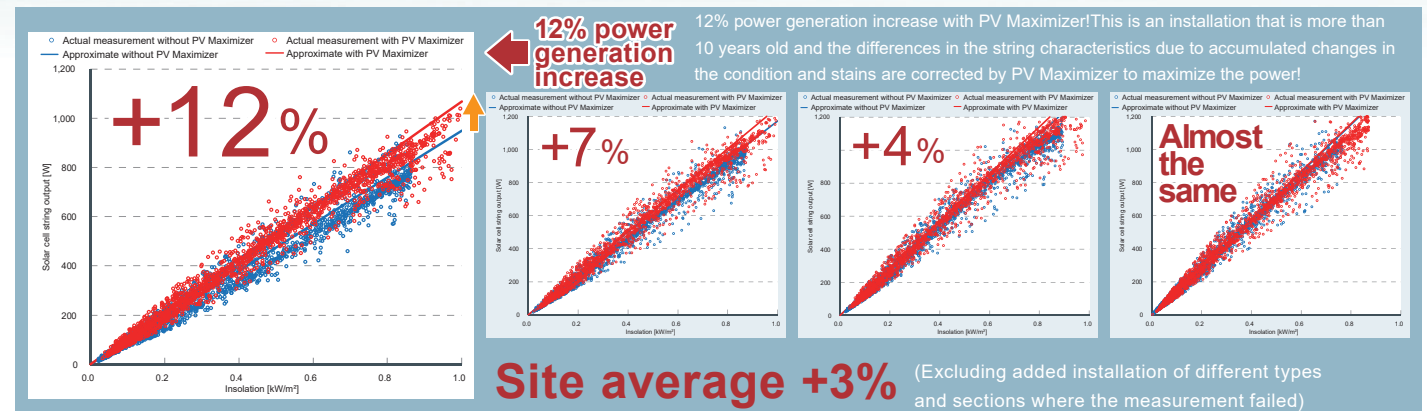
Over 10 years of operation as solar power generation for roof installation



Solar Frontier (CIS)
Mitsubishi Electric (polycrystalline)

Result

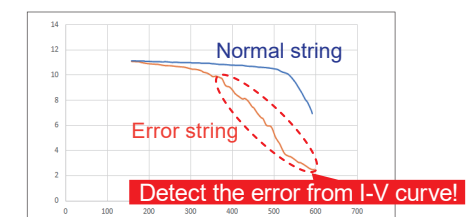
The effectiveness depends on the condition of strings. Especially for old installations, there is a big difference in the effect because of varying conditions of strings and it is assumed that PV Maximizer is more effective for strings with smaller power production.



* The examples provided are based on actual measurements from field tests conducted by our company and calculated values derived from these measurements under specific conditions. We do not guarantee that similar results will be obtained in all environments and conditions.

High-precision monitoring system for each string that will not miss abnormalities

PV Guardmyan reports irregular conditions or its signs remotely by managing and analyzing big data (power generation strings) stored on a cloud server and I-V curves show the strings' conditions. By recognizing power generation losses at an early stage, it allows the user to take preventive measures and achieve field maintenance cost reductions.



I-V curve comparison

Measuring I-V curves simultaneously for 365 days a year.

Detect the error from I-V curve!

<http://www.nipron.com>

DC link in-house consumption system

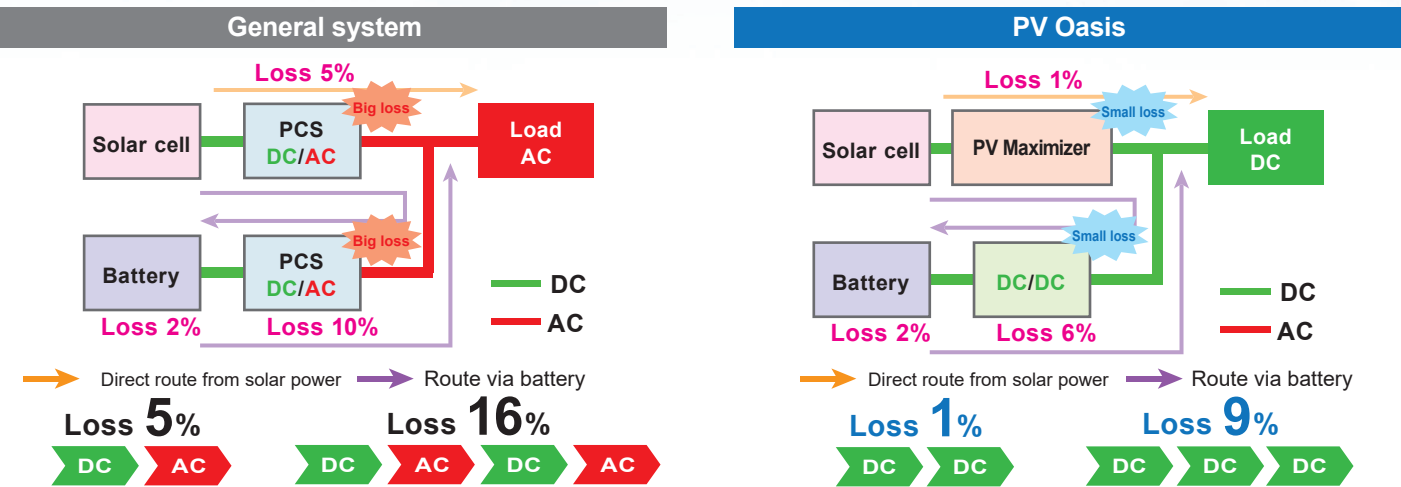


PV Oasis

The power generated during the day is consumed in the factory and for charging EVs and the surplus energy is stored in batteries by integrating the PV power generation and batteries. The surplus power will be discharged when the power cannot be generated, such as at night, to utilize the power without wasting it.

Realize the next generation DC power distribution for small-scale systems

In conventional power storage systems, power conversion from DC to AC and then back to DC are necessary and power losses are caused. Since PV Oasis uses a unique power system to connect the PV power to batteries without converting the DC power, it reduces the power loss associated with power conversion compared to conventional systems. Also, DC compatible devices can be connected and systems can be built with significant reduction in power conversion losses.



Advantages of PV Oasis. ▶▶▶▶▶

CO ₂ reduction	BCP measure against power outages utilizing batteries
Off-grid operations become possible	Reduce electricity costs and mitigate the risk of price increases
Utilizes Japanese lithium-ion battery cells/system	Accelerate promotion of EV charging infrastructure

PV Oasis installation example: P13-14 ▶

<http://www.nipron.com>



NEW

DC ground fault detector GFD-DC1000V

Nipron's original circuit design
High voltage and wide range input DC ground fault detector

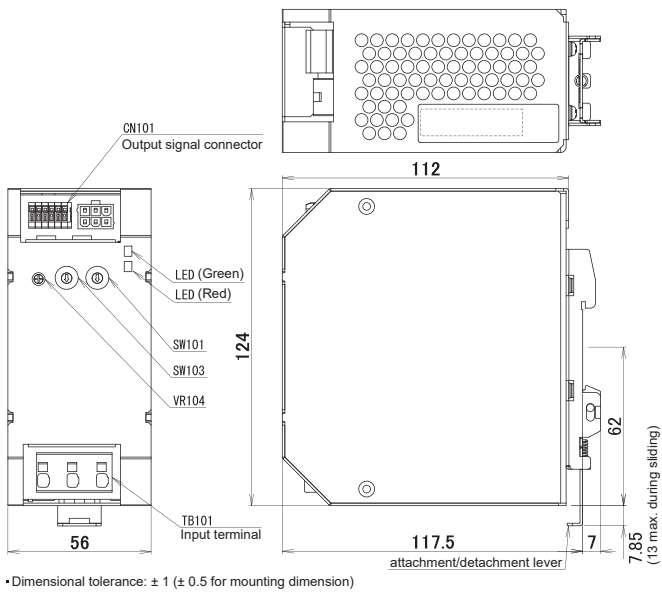
Features

- Wide operating temperature range from -10°C to 70°C
- Wide operating voltage from 50 VDC to 1000 VDC
- Notifies with a signal and LED light when ground fault is detected
- Adjustable detection current in 10 steps from 1 mA to 10 mA
- External power supply is not required.
- Compatible with DINrail mounting

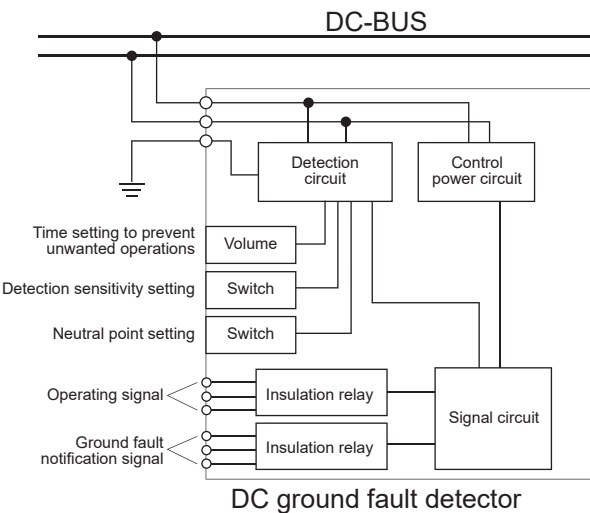
Specification

Items	Specification	Notes
Input	Input voltage range	50-1000 VDC
Detection	Detection object	Positive ground fault, negative ground fault, positive and negative simultaneous ground fault (*)
	Detection sensitivity	1-10 mA
	Notification method	LED and relay contact output
Display	Operating (LED)	LED (Green) in operation
	Ground fault notification (LED)	LED (Red) at detecting ground fault
Temperature	Operating temperature	-10 - 70 °C
Others	Installation method	DIN-rail installation
	Weight	0.8 kg
	Cooling method	Convection cooling
	Number of installations	One unit only in the non-insulated connection range within the system. (Combination with ground fault detectors produced by other companies is also prohibited.)
		It must be electrically insulated from other ground fault detectors to prevent interferences between detectors.

Outline drawing



Block diagram



<http://www.nipron.com>

FUKUSHIMA GALILEI CO.LTD. has introduced PV Oasis at the innovation hub, MILAB.

DC power supply system with PV power

PV Oasis has been introduced in the demonstration of DC power supply using a refrigeration showcase at MILAB of FUKUSHIMA GALILEI CO. LTD.

With this demonstration, visitors can personally see an in-house consumption system utilizing the DC power supply system that consists of PV power generation, batteries, and an AC/DC compatible refrigeration showcase.

The DC-powered in-house consumption system offers a high level of affinity with PV power generation with a small power conversion loss, and realizes a high-efficiency operation of refrigeration showcase using renewable energy. It also enables the operation of the refrigeration showcase in blackouts utilizing the batteries.



Left: PV Oasis Right: Refrigerated showcase

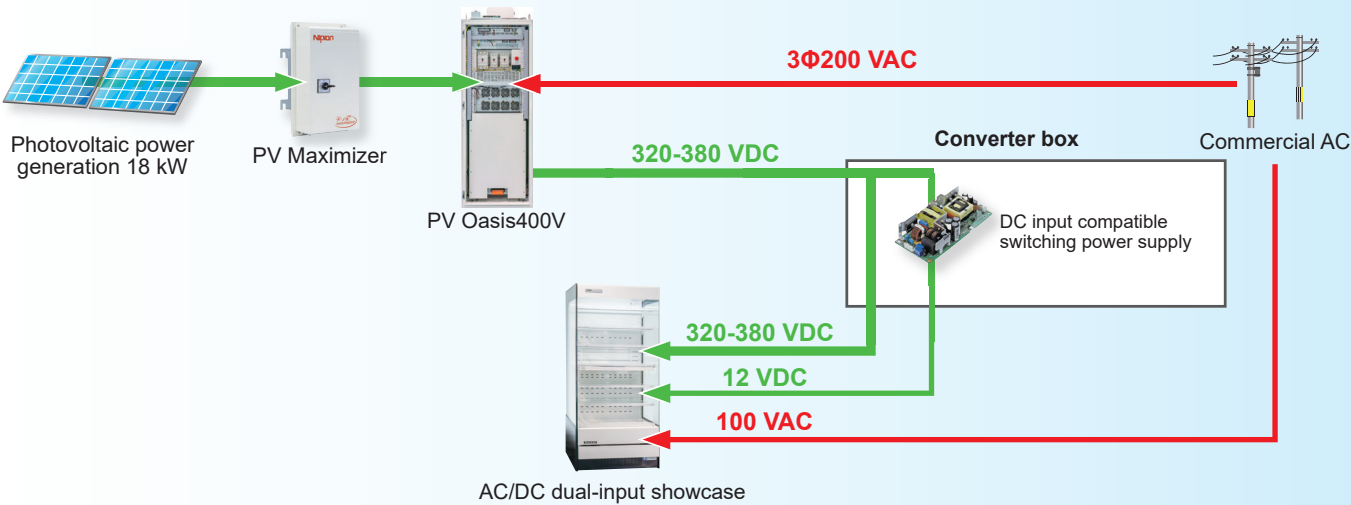


Solar panels



PV Maximizer

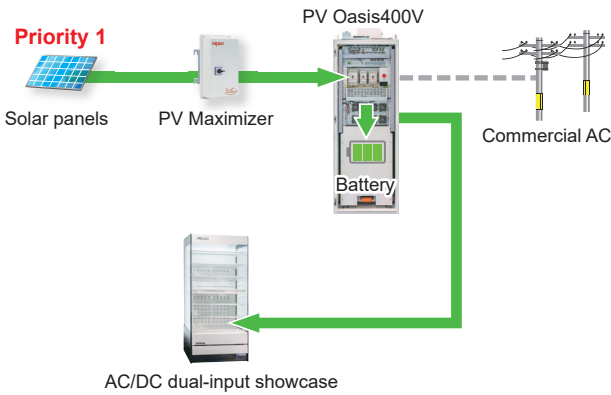
System configuration



Concept of system operation

Sunny weather

Priority 1: In the daytime, the solar power is used as much as possible, and surplus electricity is stored for charging.

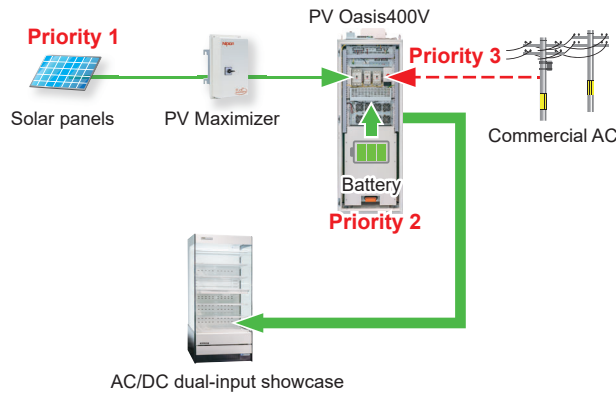


Bad weather

Priority 1: Power shortage happens due to the drop in photovoltaic power.

Priority 2: Cover the power shortage with the battery.

Priority 3: Cover the power shortage of 1 and 2 above with the commercial AC power supply.



Location: Innovation Center MILAB of FUKUSHIMA GALILEI CO. LTD.

"MILAB" is an open innovation center that connects peoples, people and technologies, and technology and technology It attracts corporates in different business sectors, universities, R&D organizations, entrepreneurs, etc. and creates epoch-making technologies and ideas.

GALILEI

Address: 2-6-18 Takeshima, Nishi-Yodogawa Ward, Osaka City, Osaka Prefecture, 555-0011, Japan
TEL: 06-6477-2031



The Nipron Story,
as told by our Chairperson

I'm going to join the Green Power product sales force! Let's achieve 2 billion yen in Green Power product sales and 10 billion yen in company-wide sales!

All hands on deck for Nipron's 2-billion-yen Green Power product sales

On July 1, 2024, Nipron entered the new fiscal year, its 44th term. In the 42nd term, the fiscal year before last, we achieved record sales of 7.52 billion yen; however, the results of the 43rd term were severe with a 20% reactionary decline. The main cause of this was the significant slowdown in the Chinese economy, which exerted a massive negative impact on the industry as a whole, and this situation will linger through this fiscal year, with the first half of the year still being difficult. Nevertheless, sales are expected to turn toward recovery in the second half year and to increase by 10% or more year-on-year, with products for new customers developed in the previous fiscal year growing and the orders from large customers recovering.

Nipron's 44th beginning-of-term executive meeting held on July 12, 2024, where its sales strategy and policy were announced under the title of "Here's an opportunity to achieve 2 billion yen in Green Power business for 45th term! Toward achieving the long-awaited goal of 10 billion yen," resolved on the sales expansion of Green Power products during the two-year period from the 44th to the 45th term (through the end of June 2026), in a concerted effort of the sales and all other departments.

The key products in this effort are the PV Maximizer (a power supply that maximizes photovoltaic power output) and the cubicle-type PV Oasis Power Storage System (a 100% in-house produced device consisting of in-house developed rectifier power supply, GBM power supply for charging and discharging lithium-ion batteries, ground fault detector, and various switching power supplies), which configure a self-consumption system in combination with an EV charging system that is capable of operating solely with solar power generation and supplying 100% renewable energy.

Many major companies must be now moving into the implementation of their initiatives to address a major issue throughout Japan, or the energy crisis (soaring oil prices and significantly rising electricity prices), and the global issue: decarbonization and CO₂ reduction. I assume that many of the companies that purchase Nipron's switching power supplies are looking for ways to cope with the steep rise of costs in their factories which is becoming increasingly required. I also believe that the environmental departments of those companies working to reduce CO₂ emissions toward a decarbonized society are waiting for our system proposals that will help them achieve these goals.

As mentioned above, we have decided to make a cross-departmental effort including sales to sell Green Power products. However, the sales department of our power supply business is mainly engaged in selling switching power supplies, and a completely different sales style is needed to propose our Green Power products to major companies. It may also be difficult for the sales department of the power supply business to sell Green Power products because it will be done through the customer company's environmental department or a department in charge of facilities and other internal infrastructure, instead of the department for regular transactions.

Having said that, times are changing dramatically, and the realization of a decarbonized society is a global issue. I believe that major companies are beginning to discuss the need to take a positive approach from CSR and other perspectives. In addition, it does not look like the sharp rise in crude oil prices is going to end anytime soon amid the deteriorating situation in the Middle East and the new Cold War. Particularly in Japan, which is facing one national crisis after another, including the yen's depreciation, the energy crisis is serious, and soaring electricity prices are a major issue that affects business activities. Given that, from a long-term perspective, the shift to inexhaustible, zero-cost solar energy is considered absolutely necessary. If that is the case, I am convinced that our main customers for switching power supplies are strong companies representing their respective industries, and they will listen to the proposals of Nipron, who is a supplier with a close relationship. I believe that this kind of sales activity should be spearheaded by managers, and executives should also be in charge.

In October last year, Nipron built a new factory (Mie Smart Dream Factory) in Taki-cho, Mie Prefecture, to which operations of the former Matsusaka Dream Factory were relocated. The new factory was completed as an in-house consumption model aimed at 100% in-house power generation for the entire factory that demonstrates the PV Oasis Renewable Energy Storage System (capable of simultaneously charging six EVs with renewable energy), which was then under the plan.

We would greatly appreciate it if you could take this opportunity to visit our site that demonstrates this system, which boasts a host of features and functions. We will plan a factory tour and inform you separately.

Setsuo Sakai
July 2024



Nipron Co., Ltd.

<http://www.nipron.com>

Sales Department and R&D Department

1-3-30, Nishinagasu-cho, Amagasaki-city, Hyogo, 660-0805, Japan.

TEL: +81-6-7220-3657 FAX: +81-6-6487-2212

