

All Products

Power Supply & Power Semiconductor

Always at the origin.
Yet being at the forefront.



Cultivating the future through the merging of semiconductors with power supply devices.

As the world struggles with solutions in energy conservation, resources conservation, and the use of clean energy technologies as the measures for preventing global warming, advanced power electronic technologies offer practical solutions. These technologies are being implemented in photovoltaic power generation, wind power generation, fuel power cell generation and also in a wide range of industries such as IT-related home electric appliances, automobiles and vast other industries. Simply put, power electronics refers to "controlling electric power with semiconductors", and Sansha Electric is a company which has been accumulating the know-how for the core technologies for "power control" and "power semiconductor" which are essential for power electronics, for over half a century. These core technologies have enabled "development of power semiconductor devices that are suitable for various equipment applications", whereas we set our mission to provide customer satisfaction by developing power electronics products where power supply equipment and power semiconductors are merged together.

Information Technology



Enviroment

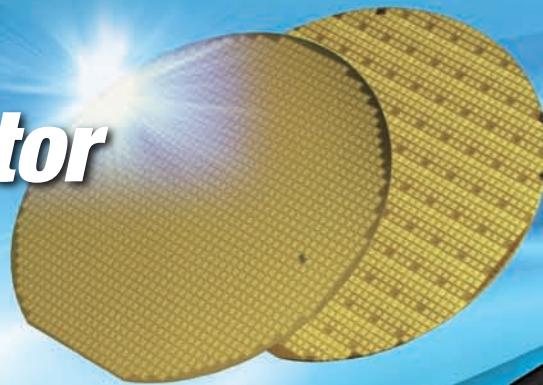


Power Semiconductor

Power Module



Wafer & Chip



Discrete





All Products Contents

Power Source for Surface Treatment

Electric Power Regulator

Cleaning Systems

Power Supply for Light Sources

Uninterruptible Power Supply

Grid Connected PV Inverter

Charge / Discharge System

Large Capacity Industrial Power Supplies

Power Semiconductor

Total Solution

Sansha Electric's wide range of products will provide a total solution. We contribute by offering solutions to various problems.

DCAUTO HK-G series

Supports Open Field Network DeviceNet CC-Link Ethernet



HKE TYPE
HKE : limited function type

HKD TYPE

- Realized further energy saving by incorporating our own high efficiency switching circuit.
- Largely decreased input current by utilizing power factor correction circuit (PFC) technology
- Max. 37% down-sizing compared to the existing models.
- Cooling fan with self check
- High speed communication (RS-485)
- Output Current integration function
- GOLDWAVE (Free waveform) mode (optional)

Inverter Power Supply for: Electronic Component, Precious Metal Plating and Laboratory Purposes

Highest functionality and lowest environmental ingress models available.

Common Specifications

Control Method		PWM Control Switching Method		
Input Specifications	Voltage	Single-Phase	100/200V switching*1 100/110/120*2/200/208*2/220/230V Except, 15V100A is exclusive use for single-phase 200V	
		Three-Phase	200/400V switching 200V - 220V/380V - 440V	
	Frequency	50/ 60Hz		
Output Specifications	Voltage Tolerance	±10%		
	Control	Constant Voltage (CV) or Constant Current (CC)		
	Adjustment Range	10% to 100% of Rated Value (voltage / current)		
	Accuracy	Variance of Input Power	Rated Value ±0.5% or below	
		Load Variance	Rated Value ±0.5% or below	
Ripple	RMS 1% or below (of rated value at rated input / output)			

*1: Input voltage is automatically detected and can be selected with a single press of a button.
*2: 120V, 208V models are available thru special order.

Input Requirements (kVA)

Output Current (A)	5	10	20	30	50	100	200	300	
Output Voltage	8V	0.11	0.15	0.23	0.32	0.53	1.01	2.56	4.00
	15V	0.14	0.22	0.37	0.54	0.90	1.76	3.92	6.38
Chassis Type	A			B		C	D		

*: In addition to the above rectifiers with different voltage/current can be manufactured.
Please contact us for inquiries.

External dimensions

Chassis Type	Case Dimensions (mm)			Mass (Approx.) (kg)	Cooling Method
	Width	Height	Depth		
A	285	145	335	7	Natural cooling
B	420	145	335	10	Forced air cooling
C	420	145	500	18	Forced air cooling
D	420	145	670	24	Forced air cooling

MRM series (500A~4000A)



Modular type Power Supply for Metal Surface Treatment

Flexible output current capacity

Common Specifications

Model		MRM-PM-15005 Power Modular	
Input Specifications	Voltage Tolerance	Three-Phase 200V - 240V / 380V - 480V 50/60Hz	
	Select Input Voltage	Manual	
Input Capacity	10.5kVA		
External Dimensions	W×H×D	435mm×150mm×550mm	
Mass	Approx. 24kg		
Cooling Method	Forced Air Cooling		
Output Specifications	15V / 500A		
Output	Control	Constant Voltage or Constant Current	
	Accuracy	Both Voltage / Current	Rated Value ±1% (FS) or below
	Accuracy (Warranty) Range	Both Voltage / Current	10% to 100% of Rated Value

Model		MRM-CM Control Modular	
Input Specifications	Voltage Tolerance	Single-Phase 200V - 240V / 380V - 480V 50/60Hz	
	Select Input Voltage	Auto	
Input Capacity	0.2kVA		
External Dimensions	W×H×D	435mm×128mm×300mm	
Mass	Approx. 6kg		
Cooling Method	Natural Cooling		

Product List

Model	MRM-15005	MRM-15010	MRM-15015	MRM-15020	MRM-15025	MRM-15030
Output Specifications	15V/500A	15V/1000A	15V/1500A	15V/2000A	15V/2500A	15V/3000A
Power Modular	1 unit	2 units	3 units	4 units	5 units	6 units
Rack Dimension	3 stacks configuration			6 stacks configuration		
MRM-RK W×H×D	520mm×835mm×570mm			520mm×1,370mm×570mm		
Mass (Approx.)	66kg	92kg	118kg	152kg	178kg	204kg
Input Specifications	3-phase		200V - 240V/380V - 480V 50/60Hz			
Input Capacity	10.7kVA	21.2kVA	31.7kVA	42.2kVA	52.7kVA	63.2kVA
Output	Control	Constant Voltage or Constant Current				
	Accuracy	Both Voltage / Current Rated Value ±1% (FS) or below				
	Accuracy (Warranty) Range	Both Voltage / Current 10% to 100% of Rated Value				

*: 1 control modular enables to control up to 8 units (of power modular)

Power Source for Surface Treatment

MRT series (500A~3000A)



Inverter Power Supply for Various Plating Applications

IGBT Inverter Mini-Rex

Common Specifications

Input Voltage	Three-Phase AC 200/ 208*/ 220V ±10% or AC 380/ 400/ 440V ±10% 50/ 60Hz
Output Range	10 – 100% of the rated value for both the voltage and current
Cooling Method	Continuous Forced-Air Cooling
Control Method	Regulator control of IGBT switching

*: 208V model is available thru special order.

Input Requirements (kVA)

Output Voltage	Output Current (A)				
	500	1000	1500	2000	3000
10V	6.5	13.0	20.0	26.0	39.5
15V	11.1	20.4	30.2	40.7	–

MRT-HPR series



High Speed PR (Positive/ Reverse Switching) Pulse Power Supply for High Precision Plating

- Positive / Reverse High Speed Pulse Control
- Positive / Reverse High Speed Switching

Common Specifications

Model		MRT-800.4HPR	MRT-8001HPR	MRT-8003HPR	MRT-8005HPR	
Output	Positive Electrode Peak Current	A	40	100	300	500
	Reverse Electrode Peak Current	A	100	300	900	1500
	Constant Current (CC) Control Accuracy	%	±3.0			
	Positive Electrode Pulse Width	ms	10 – 99.9			
	Reverse Electrode Pulse Width	ms	0.1 – 2.0			
	Positive / Reverse Current Switching Time	µs	50 (TYP)			
	Positive Electrode Peak Voltage	V	8			
	Reverse Electrode Peak Voltage	V	15			
	Positive / Reverse Pulse Ratio		5 : 1 or larger			
	Input Voltage		Three-Phase AC 200V/ 208V*/ 220V ±10% 50/ 60Hz			
Main Circuit Control Method		IGBT Inverter PWM Control Switching				
Cooling Method		Continuous Forced-Air Cooling				
Ambient Temperature Range		0 – 40 °C				
Size W×H×D	mm	500×265×450	360×750×570	360×800×670	360×900×750	
Mass (Approx.)	kg	50	80	120	170	

*: 208V model is available thru special order.

MRS series MRS-PR series



Thyristor Rectifier for Electrolytic Degreasing and Hard Chromium Plating

Large Capacity Thyristor Based series Equipment

Common Specifications

Input Voltage	Three-Phase AC 200/ 208*/ 240*/ 480*V ±10% 50/ 60Hz
Output Range	Voltage: 1/3 – rated voltage Current: 10 – 100% of the rated current
Cooling Method	Continuous Forced-Air Cooling
Control Method	Continuous non-staged control using the thyristor

*: 208V, 240V, 480V models are available thru special order.

Input Requirements (kVA)

* The values in red are for the MRS-PR series.

Output Voltage	Output Current (A)													
	500	1000	1500	2000	3000	4000	5000	6000	7000	8000	10000	12000	15000	
12V	8	16	24	32	47	63	79	96	110	126	158	191	239	
	9	18	25	35	50	70	82	–	–	–	–	–	–	

Digital Direct-Integrating Current Meter

DIGITAL-7

Plating Management

- Easily Identifiable Digital Displays
- Touch-Panel LED Display
- Multifunctional - 4 Functions Within a Single Meter
- Memory Function
- Rich in Optional Features



Specifications

Model	SHA-7 (DIGITAL-7)
Power Source Voltage	Single-Phase AC 90 – 264V 10VA 50/ 60Hz
Shunt Detection Input	DC 0 – 50mV / DC 0 – 60mV
Voltage Detection Input	DC 0 – 50V
Display Functions	Voltage / Current / Count Display mode can be switched between preset values and total values using the Touch-Panel.
Rated Current Range	0.010A – 9999kA

CALPOTE series

CALPOTE series Power Regulator

Thyristor Based Power Regulator Units

High Performance Power Regulator Units

Supports Open Field Network **DeviceNet** **CC-Link**



UF-1 series

Single-Phase Applications
25 – 1200A
Supports Open Field Network



UF-3 series

Three-Phase Applications
25 – 1200A
Supports Open Field Network



Common Specifications

Input	Number of Phases	UF-1: Single-Phase, UF-3: Three-Phase	Control Method	Phase-Control, Cycle-Control (continuous, intermittent)					
	Voltage	100V unit (100/ 110/ 120V ±10%) 200V unit (200/ 220/ 240*/ 254V ±10%) 400V unit (380/ 400/ 440/ 460/ 480V ±10%) *Control Power Requirement AC 200/ 220V		Control Input	(1) ON / OFF signal (Output is enabled when temperature is lower than the set temperature) (2) Current signal DC 4 – 20mA (input resistance 250Ω) (3) Voltage signal DC 1 – 5V, DC 0 – 5V (input resistance 13kΩ) (4) For other current or voltage signal levels, a signal converter is required.				
	Frequency	50/ 60Hz ±5%			Start / Stop Method	Soft Start / Soft Stop (Standard: 0.5 sec., setting adjustable by using the display panel)			
Output	Current	25/ 35/ 50/ 75A (Self-Cooling) 100/ 150/ 250/ 350/ 450A (Forced-Air Cooling) 600/ 800/ 1200A (Special Order Units / Forced-Air Cooling)				Current Control	Adjustable from 50 – 110% of the units rated current (phase control only)		
		Operating Environment	Ambient Temperature	Operation: –10 – +50 °C Storage: –20 – +70 °C			Output Characteristics	Linearity: ±3% of F.S. at 10 – 90% of the output Low point setting: Minimum output voltage setting. Gradient setting: Maximum output voltage setting.	
			Relative Humidity	30 – 90% RH				Protection Features	(1) Overcurrent protection (2) Short circuit protection (3) Overtemp protection (100 A and higher rated units)
Dielectric Strength	Dielectric Strength Voltage	AC 2000V/1min. (100 / 200V units) AC 2500V/1min. (400V units)		Accessories (per unit)	Variable resistor (1), Knob (1)				
		Dielectric Resistance	20MΩ or higher (DC 500V megger)						

*: 240V model is available thru special order.

UF-1 Single-Phase Unit Ratings

Model	Rated Current (A)	Cooling Method
UF1- *1 025 *2	25	Self-cooling
UF1- *1 035 *2	35	
UF1- *1 050 *2	50	
UF1- *1 075 *2	75	
UF1- *1 100 *2	100	
UF1- *1 150 *2	150	Forced-Air cooling
UF1- *1 250 *2	250	
UF1- *1 350 *2	350	
UF1- *1 450 *2	450	
UF1- *1 600 *2 (made to order)	600	
UF1- *1 800 *2 (made to order)	800	
UF1- *1 1200 *2 (made to order)	1200	

*1 ⇒ 2: 100 and 200V units, 4: 400V units

*2 ⇒ F: Equipped with internal fuse

Blank: Not fuse equipped (Note: All 400V units are manufactured with internal fusing as standard and are thus marked with F)

UF-3 Three-Phase Unit Ratings

Model	Rated Current (A)	Cooling Method
UF3 - 0025 *1 F	25	Self-cooling
UF3 - 0035 *1 F	35	
UF3 - 0050 *1 F	50	
UF3 - 0075 *1 F	75	
UF3 - 0100 *1 F	100	
UF3 - 0150 *1 F	150	Forced-Air cooling
UF3 - 0250 *1 F	250	
UF3 - 0350 *1 F	350	
UF3 - 0450 *1 F	450	
UF3 - 0600KF (made to order)	600	
UF3 - 0800KF (made to order)	800	
UF3 - 01200KF (made to order)	1200	

*1 ⇒ K: Six-arm configuration. Recommended for inductive loads.

(Note: All units 600 – 1200A are manufactured 6-arm as standard)

(Three-Phase is common for Full range.)

Electric Power Regulator

Sansha Electric's Thyristor-based Power Regulators are being used in various applications worldwide for their superior performance and reliability. We have implemented complete development from the core semiconductors and thyristor elements to manufacturing in a consistent manner, providing highly reliable power regulators. The highly functional and versatile "UF series" type is the latest in a long history of power regulator development. The UF series, developed by utilizing our past success, uses our isolated thyristor module for the main circuit along with a fully digital control circuit that makes the product small, compact and light weigh. The mounting density has also been improved enabling the mounting of a large number of units onto a single control panel. These power regulators are equipped with various control / protection circuits that, and with the addition of optional conversion boards (purchased separately) offer functionalities to largely improve performance.



Common Specifications

Input	Number of Phases	Single-Phase
	Voltage	100V unit (100/ 110/ 120*/ 200V $\pm 10\%$) 200V unit (200/ 208*/ 220/ 240*/ 254V $\pm 10\%$) *Control Power Requirement AC 200/ 208*/ 220V
	Frequency	50/ 60Hz
Output	Current	20/ 30/ 45/ 60/ 80/ 100A (Self-cooling)
Operating Environment	Ambient Temperature	Operation: $-10 - +50^{\circ}\text{C}$ Storage: $-20 - +70^{\circ}\text{C}$
	Relative Humidity	30 - 90%
	Atmosphere	No exposure to corrosive gases, dust or vibrations
Dielectric Strength	Dielectric Strength Voltage	AC 2000V/1min.
	Dielectric Resistance	20M Ω or higher (DC 500V megger)

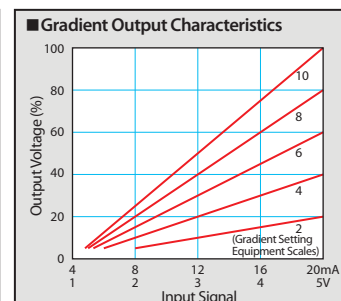
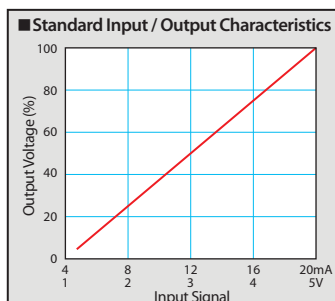
*: 120V, 208V, 240V models are available thru special order.

Control / Protection Features

- Waveform control ...**
Phase-Control, Cycle-Control (continuous, intermittent)
- Standard Input / Output Characteristics ...**
Manual, Automatic. The standard I/O characteristics of the SPU unit is shown in the figure below. (Phase Control, Cycle Control)
- Gradient output characteristics ...**
By installing a gradient setting equipment (variable resistor), you can optionally set the maximum output voltage to be variable.

SPU Unit Ratings

Model	Rated Current (A)	Cooling Method
SPU-2020	20	Self-cooling
SPU-2030	30	
SPU-2045	45	
SPU-2060	60	
SPU-2080	80	
SPU-2100	100	



UF/SPU series units contribute to society as the most appropriate high precision heating control units used worldwide in the following industries.

Aircraft

- Carbon fiber
- Body molding

Thin display panels

- Glass substrates
- Filters
- Films
- Polarization plates

Automotive

- Sheet Steel
- Tires
- Aluminum
- Lamps
- Harnesses
- DPFs

Electronic components

- Capacitors
- LEDs
- Resistors
- Semiconductors

Others

- PET bottles
- Biomass
- Food processing machines
- Fuel cells, batteries, etc. ...

Induction Heating

We also produces power supplies for direct current and induction heating.



Ultrasonic Cleaning Systems **Clean Rex** Electrostrictive series

Digital Control Significantly Improves Performance and Functionality

Practical series - Perfected by a simple design with multiple functionalities all in a compact size



Supports Open Field Network **DeviceNet** **CC-Link**

Ultrasonic Cleaning Unit

Vibrator

High output power ensures even and thorough cleaning

Produced using a special structure where the equipment is completely sealed.

- Thin vibrators (compared to the standard Sansha Electric's products) are available for installation into the smallest of tanks.
- Lead wire connections are produced using a special structure enhancing the sealing property.
- Lead wires employ a flexible shield wire within a PTFE tube that is all encased in a stainless steel braided sleeving for maximum flexibility and durability. Additionally, the blade, made with stainless steel is covered. (for the 2.5 m opening part)
- Resistant to solvents, alkaline aqueous solutions and other chemicals.
- Employs Bolt-clamped Langevin Transducers (BLT) that allow use in higher temperature cleaning solutions between 60 – 100 °C.
- The elements are directly and mechanically connected to the stud bolts enabling superior performance even when using high temperature cleaning solutions.
- A series of bottom mounted transducers is available.

Ultrasonic Cleaning Unit

Oscillator

High reliability and stable output power

- Compact lightweight design.
- Large operating range of input voltage (180 – 240 VAC).
- Structure is tightly sealed to ensure superior durability even in harsh environments.
- Maintains ultrasonic output at a constant level regardless of input power fluctuations or variations caused by the removal or insertion of cleaning objects.
- Built-in automation and energy saving functions.
- Equipped with a sweep function to reduce uneven cleaning and shot function for improved degassing performance.
- Built-in display timer provide warning when vibrator lifetime approaches.



Ultrasonic Cleaning System Line-up **Rich line-up of Clean Rex series where you can select according to your application**

Vibrator		Oscillator			
		600W		1200W	
Nominal Input Power	Nominal Output Power	28kHz	40kHz	28kHz	40kHz
	Nominal Frequency	GED028060	GED040060	GED028120	GED040120
Model					
600W	TE028063				
	TE028063A				
	TE028066				
	TE028067				
	TE028067A				
	TE028064				
	TE040063				
	TE040063A				
	TE040066				
	TE040067				
1200W	TE028128T16				
	TE028121				
	TE028121A				
	TE040121				
	TE040121A				

Power Supply for Light Sources

Ballast Power Supplies

Always the industry leader – in the past, present, and future

The movie film industry is being transformed as the digitization wave surging in the video projection world has created the digital cinema experience. The development of these "digital cinemas" is being accelerated, enabling the creation of images that are almost as good as the conventional film images, proving that the film industry is facing an age of significant transformation.

Our projector lamp power supplies, which are one of the products we have been providing since our inception over 80 years ago, have been designed to incorporate semiconductor elements we have developed utilizing the technologies and know-how we have accumulated over the long history of the company.

We are continuously developing various projector power supply devices for use in digital cinemas as well as other light projection purposes that are small, light-weight, highly energy efficient while exhibiting superior performance characteristics. The value of this superior performance of the SanRex brand has resulted in the approval by major projector manufacturers in the U.S., Europe and Japan, making our projector power supply devices essential for the industry.

The advancement of the technologies is an eternal theme, and our semiconductors, whose development has originally started from the development of selenium, has moved onto the production of the cutting edge power semiconductors. Our manufacturing style of using internally manufactured semiconductors for the core elements in the power supply devices is unprecedented throughout the world.

Today, light source technologies are widely applied for general industries, where our light source power supply devices are used in many production facilities for the manufacturing of printed circuit boards, semiconductors, optical fibers and digital appliances.

Lamp Power Supply for Digital Cinema



● 7kW

In order to respond to the exact demands for digital cinemas, the highly reliable 4kW/ 7kW thyristor type power supply design exhibit an output waveform of low ripple with less flicker. In addition to the simple and sturdy thyristor type, we also offer high frequency inverter types which support subtle light control into our extensive line-up.



● 2kW

● 1kW

Features

1. Equipped with communication capability.
2. Supports worldwide input power voltage standards within a single unit.
3. Compliant to international standards.

Lamp Source Power Supply for Exposure Equipment



● 5kW

Highly stable and powerful illumination is required for the printing exposure of wiring pattern using the photography process such as the high density / high precision printed circuit wiring boards. This is increasing the demand for high power light sources that match characteristics with those lamps perfectly well for extended life of the lamps. In order to improve the precision level and the productivity for the exposure equipment, lamp output has been increased from between 5kW – 8kW for the general models to higher outputs ranging between 10kW – 35kW.

Features

1. External output adjustment function with built-in reinforcement.
2. Realized smaller size and lighter weight.

Lamp Power Supply for Film Cinema



● 2kW – 8kW

The film projector lamp power supply which has been part of our product line-up from the time of the company's establishment is still a best-seller at various movie theaters. Our product has maintained the largest share in the industry. This thyristor rectifier has been re-designed to be smaller in size and lighter in weight, while maintaining best-in-class performances as a rectifier perfect for lamp applications.

Lamp Power Supply for UV Irradiation



● 10kW

By utilizing the fact that mercury-vapor lamps generate ultraviolet (UV) rays, the equipment is being utilized for various purposes at industrial and private manufacturing sites for such processes as wafer cleaning, sterilization, and resin curing.



● 100W – 400W

Features

1. Supports both 100 and 200 input voltage ranges. Perfect for any input power.
2. Internal igniter makes the product user-friendly.

We also manufactures other light source power supplies that are applicable for a variety of discharge lamps types. Please inquire for your specific needs.

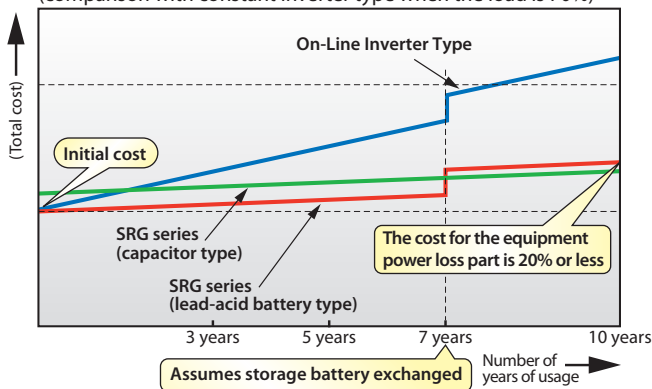
Uninterruptible Power Supply

"SRG" series Stand-By Type Uninterruptible Power Supply

Features

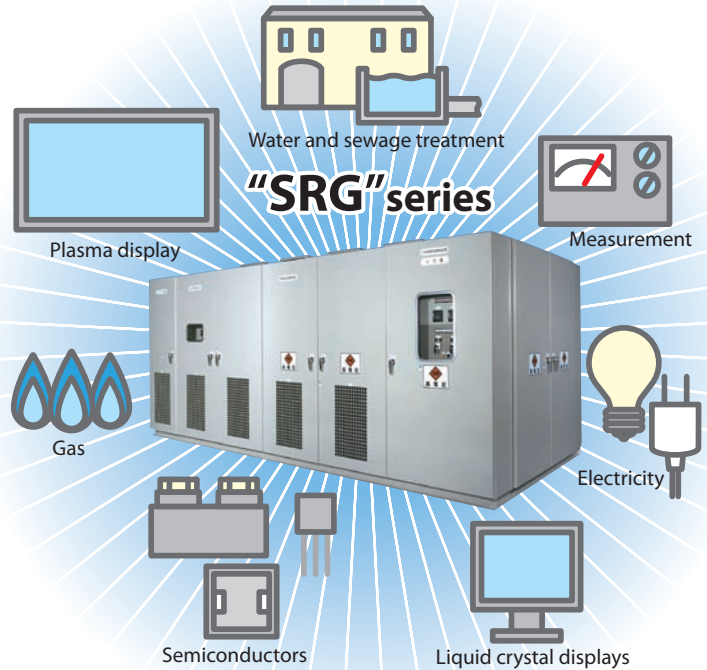
- **Running cost largely reduced due to its high efficiency**
(Loss reduced by 80 – 90% in comparison to our constant inverter type equipment)
- **Using lead-acid storage battery for backup**
Where backup is required for 10 seconds or less, it is possible to use an electric double layer capacitor (EDLC) as the power storage device for instantaneous power interruption compensation.
- **Using our semiconductors for the switching circuit, switching can be realized with no instantaneous interruption**

Total cost of use for 10 years
(comparison with constant inverter type when the load is 70%)



Basic specifications

High voltage: For 6600V systems Capacity: 500kVA – 2000kVA
 Low voltage: For 200/400V systems Capacity: 50kVA – 400kVA



50 – 2000kVA

Supporting sophisticated industrial facilities to provide backup from instantaneous power interruption to outages

On-Line Inverter Type Uninterruptible Power Supply

Redundant operation series

Three-Phase output: 20 – 3000kVA
(500kVA × 6 units in parallel)

- Highly reliable due to the parallel redundant operation
- Expandable: Additional capacity is available in the future according to the load requirements of the facility
- Display of various internal information available on LCD display panel
- Special specification capable



BACKUPS 1000 series

Single-Phase output: 5 – 75kVA
 Three-Phase output: 10 – 100kVA

- Major improvements include:
 - Overload capacity
 - Peak-cut function
 - Battery life management system
- Special specification capable



Grid Connected PV Inverter

Supports a wide range of system types from small capacity distributed generation systems to large capacity utility scale power generation systems.

The energy obtained from sunlight is converted into electric energy by the solar cell. We have developed these large capacity power conditioners units that convert the photovoltaic energy generated by the solar cells into a stable, commercially accepted electrical power for local use or linked to the utility electric system to provide power.



500kW
Forced air-cooled outdoor use PV inverter unit

Highest Efficiency Embedded Isolation Transformer Models

Maximum Efficiency
96.0% (100kW)
96.6% (250kW)
96.8% (500kW)

High Efficiency Models

Stand-alone indoor units
Everything included in one easy to install PV inverter unit



100kW

250kW

500kW

DC 1000V Models Available

Model	PV-100K-42 / 44T-03 MVJ	PV-250K-42 / 44T-03 MVJ	PV-500K-42 / 44T-03 MVJ	PV-500K-42 / 44T-13 MVJ
Rated Output Capacity	kW 100	250	500	500
Structure	Stand-Alone Indoor Unit			Outdoor Use
AC Rated Voltage	V (*1, *2) 420 / 440		(*2) 420 / 440	
Linkage Point Electricity Method	Three-Phase 3-wire or Three-Phase 4-wire			
Isolation Method	Isolation using commercial transformer			
Output Power Factor	% 99 or higher (power factor available to be controlled to maintain a certain value)			
DC Rated Voltage	V	(*3) 500		
Maximum Input Voltage Allowed	V	(*3) 750		
Operable Voltage Range	V	(*3) 330 – 750		
MPPT Operation Range	V	(*3) 340 – 650		
Maximum Efficiency (including commercial transformer)	% 96.0	96.6		96.8
Self-support Operation Function	Available as an option		None	
Usage Environment Temperature Range	°C –10 – +40			
Size (W × H × D)	mm 1,100 × 2,150 × 900	1,300 × 2,150 × 1,200	1,600 × 2,350 × 1,300	2,250 × 3,010 × 2,480
Mass (Approx.)	kg 1,400	2,400	3,500	4,800

(*1): Support AC input 200V systems available. (*2): 420V / 440V will be determined automatically according to the frequency.

(*3): Operable voltage range 270 – 600V (rated DC 400V). For equipment with operable voltage range of 440 – 1000V (rated DC 650V) is available, please inquire.

*Efficiency tolerance: IEC / TC82 (CO) 19 (of JIS-C8961)

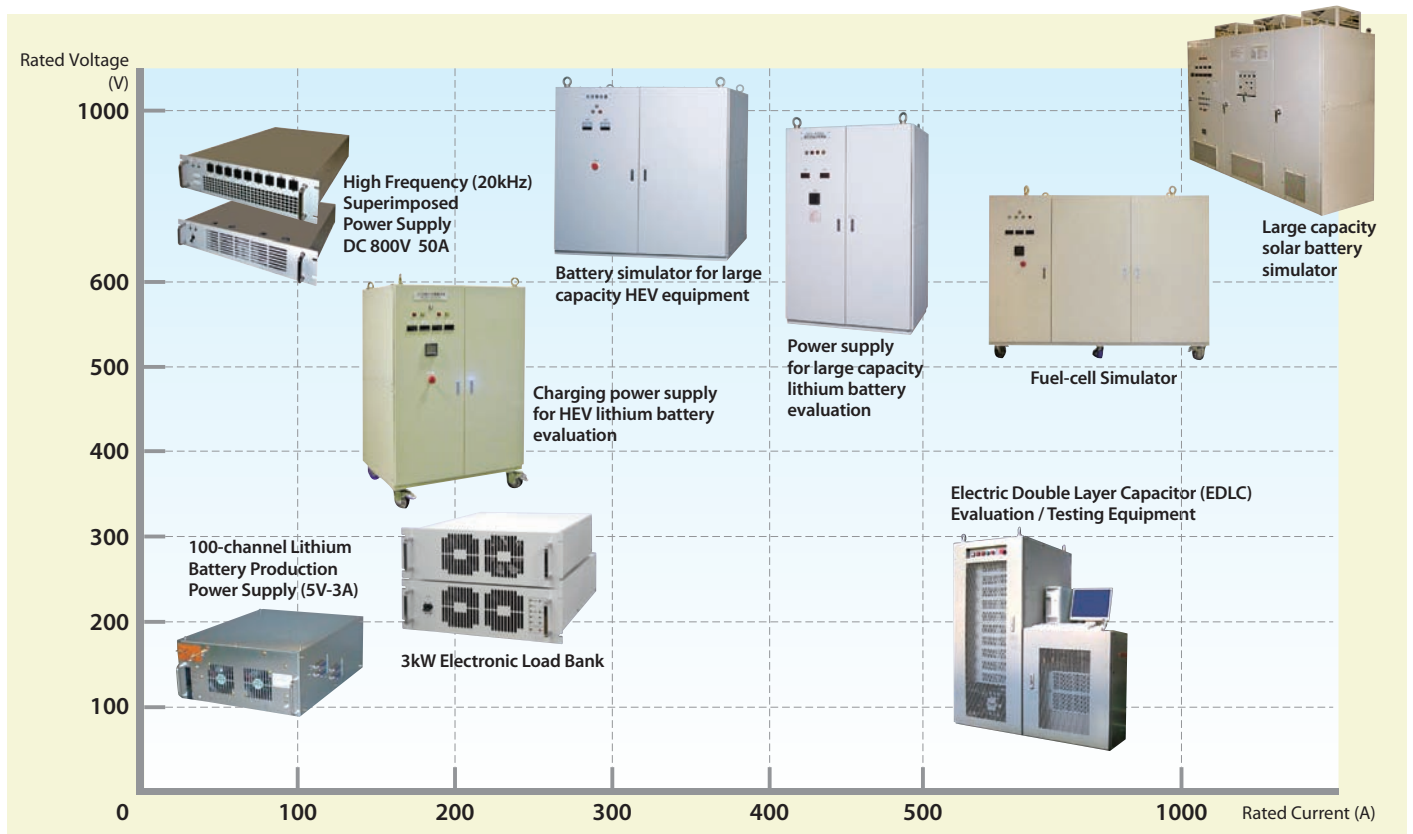
• Integrated battery units available.

Charge / Discharge System

Sansha Electric is a leading manufacturer specializing in the area of charging-discharging equipment and development evaluation equipment for new power storage devices.

With superior past results for delivering our equipment for various specialized production systems, our control technology supports the production, development and reliability evaluation tests for the latest power storage devices.

Electronic load bank / battery simulator / charging-discharging system for production manufacturing.



Sansha Electric's power electronics supporting the "new power storage devices / fuel batteries"



Large Capacity Industrial Power Supplies

The materials industry supports the basics for human society.

Many industries such as the automotive, information technology and the consumer product industry are manufactured using high value-added materials. For the chemical, construction, power generation and control, manufacturing and distribution industries, Sansha Electric's inverter technologies will support the daily businesses in key industries while being environmentally and energy conscious. Specify Sansha Electric's power supply equipment for your material production and processing equipment needs.

Power Supply for Copper Foil Manufacturing



Various Applications for Large Capacity Industrial Power Supplies

Steel and copper related processes (EGL, CGL, ETL, reflow)

Silicon manufacturing

Copper foil manufacturing

Capacitor foil manufacturing

Ash melting for waste disposal plants

Aluminum anodized and electrodeposition

Chemical electrolysis

Grid-connection clean energy inverters

Environmentally Sensitive Issues - being solved using our large capacity industrial inverter power supplies

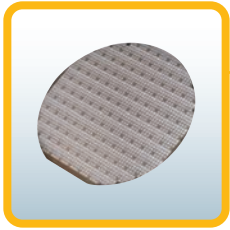
Our products also support the latest in energy and environment conservation measures. Our 2 MW class power supply equipment is being used for high temperature plasma arc furnaces that detoxify and solidify incineration ash for safe reuse / disposal. Our inverter based power supplies support mega-solar photovoltaic systems installed in regions with no supply of electricity and our micro-grid power supplies are used for distributed power supply systems.

Power Supply for Waste Disposal Plant



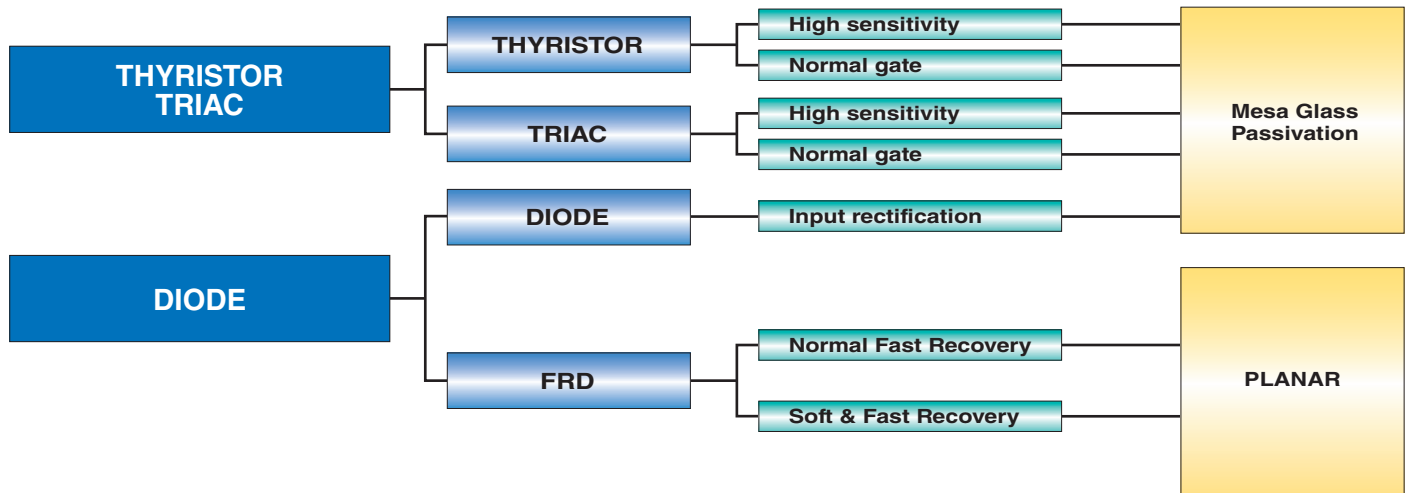
• 2 MW Class

Custom Power Supplies are our specialty. Please contact us for your large capacity power supply requirements.



WAFER / CHIP

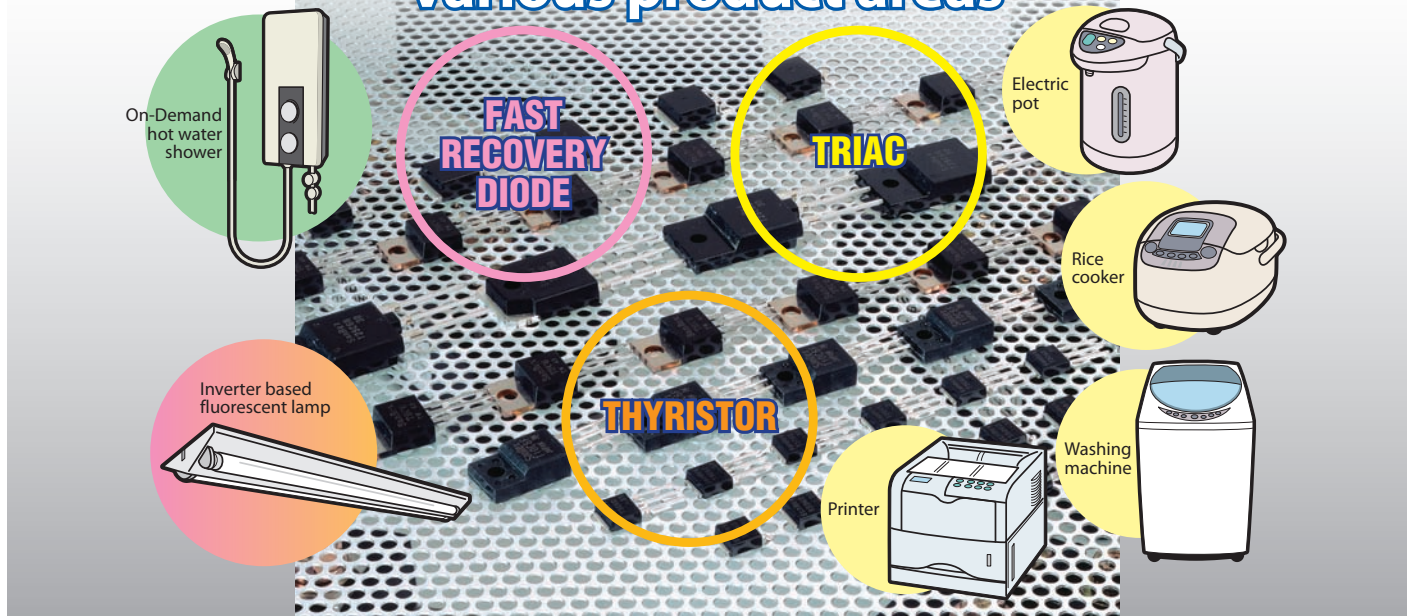
Our product line-up includes high voltage diodes / thyristors / triac chips, all which have been developed based on the knowledge for modules used in primary side rectification and AC control. The high speed diode chips were designed to reduce electricity loss and noise generation when rectifying the high frequency secondary side output of inverters.



DISCRETE SEMICONDUCTOR

Our Triac line-up includes specific series for high-withstand voltage, high sensitivity and $T_j = 150^\circ\text{C}$ guaranteed in addition to the standard specification types. Our thyristors line-up also includes series that support both consumer and industrial purposes. Semiconductor packages include through-hole and surface-mount types.

Discrete Semiconductors are applied to various product areas





POWER MODULES

Our power modules, such as the FRD (Fast Recovery Diode), which are perfect for present day high frequency inverter technology or the SBD (Schottky Barrier Diode) which aims to reduce power loss, are designed with specifications based on our manufacturing concept of fully utilizing our know-how gained through our industrial product business as well as the users' requirements.

FRD	SBD	DIODE		THYRISTOR DIODE	THYRISTOR	TRIAC	SiC	
DCA, DKA, FRS, DKR etc.	BKR, BKA	DD, KD, DKA	DF	DFA	PD, SCE	PK, SCA	TG	FCA
25A~400A 200V/400V/500V/ 600V/650V 1200V/2000V	200A 50V/100V	60A~300A 800V/1600V/ 2200V	20A~200A 800V/1600V	50A~200A 800V/1600V	25A~250A 800V/1600V 2000V (SCE)	25A~250A 800V/1600V	16A~70A 600V	150A 1200V
Welding machine Large capacity SMPS		Inverter for industrial use Air conditioner		Welding machine Solar (PV) power generation	Power control	Power control AC switch	Industrial inverter	

High Reliability Transfer Mold Modules



110A
Diode/Thyristor
2-in-1 Module

A next generation package which is small in size and light in weight and superior in reliability. The product line-up covers a wide range of capacity from 20A to over 100A. New products are always being added to the line-up. Please feel free to contact us.



20/30A
Three-Phase Diode
Bridge Module



60A
Three-Phase Diode
Bridge Module

Low Height Compact Modules



Low height (17mm)
Three-Phase Bridge Module

Our product line-up includes the increasingly popular 17mm low height form factor type package. By providing a wide range of package types with various heights allows selecting a product that best matches the shape of the peripheral package for the module mounting environment.

Note: Package form may change without notification.
Please contact our sales office for the latest details.

<Attention>

- Although we make every effort to improve quality and reliability, semiconductor products may fail or malfunction due to various factors. When using this product, safety measures should be taken for the equipment on which the product will be used, such as redundancy design, design for prevention of the spread of fire, design for prevention of malfunction, etc. in which safety is taken into consideration, so that no accident resulting in personal injury or death, or no damages due to fire, will occur.
- We will not be held responsible for any accidents or damages that have occurred due to use exceeding the rated values or non-observance of precautions.
- If a product described in this material is subject to regulations under the Foreign Exchange and Foreign Trade Act, permission for export is required to be obtained from the Government of Japan under the said Act, in order to export the product.
- Do not use the product for purposes of development, etc. of weapons of mass destruction or for purposes of military utilization, etc.
- Consult us if you have any questions about the product.

Development and Manufacturing Facilities



● Head Office



● Shiga Plant (Power supplies)



● SANSHA ELECTRIC EASTERN CO., LTD.
(Compact power supplies)



● Okayama Plant (Power semiconductors)



● [China]
SANSHA ELECTRIC MFG. (GUANGDONG) CO., LTD.
(Power supplies)



● [China]
DONGGUAN EASTERN ELECTRONICS CO., LTD.
(Compact power supplies)



Caution Read and understand the entire Operating Manual and your employer's safety practices before installing, or using the equipment. Do not install the equipment in an area where water, high humid, steam, dust or oil are located. It may cause damage to the equipment or result in a fire or electrical shock.

If the product is intended to be used for any of the following applications, consult us in advance.

- Use for medical devices, systems, etc. directly influence human lives
- Use for transportation systems such as electric trains, elevators, etc. that can lead to damage to human bodies
- Use for trunk systems that play important roles socially and publicly
- Devices and systems that are similar to any of the above

For devices and systems that are involved in the safety of people and have serious influence on the maintaining of public functions, special considerations are required to be given to their operation, maintenance, and management, such as multiplexing of systems, installation of power generation equipment for emergency use, and the like. Even in the case of an accident caused by our product, we are not in a position to make compensation for any and all damages including damages related to abnormality and failure of devices, connected equipment, and software as well as other secondary and consequential damages.

- SanRex, DCAUTO, CALPOTE are trademarks or registered trademarks of Sansha Electric Manufacturing Co., Ltd.
- DeviceNet is a trademark of ODVA, Inc.
- CC-Link is a trademark or a registered trademark of CC-Link Partner Association.
- Ethernet is a trademark or a registered trademark of Fujii Xerox Co., Ltd.
- Some of the products named in this catalog are trademarks or registered trademarks of their respective holders.
- None of these organizations are affiliated with Sansha Electric, nor do they sponsor or endorse Sansha Electric products.
- Please note that the parts such as fan or fuse needed to be replaced are chargeable when replacing. Also, keep accessory parts in a safe place.
- Please contact us if the equipment is used for any other applications not specified in this catalog.
- Specifications are subject to change without any notice.

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