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MITSUBISHI ELECTRIC ANNOUNCES PHOTOVOLTAIC INVERTER FOR EUROPEAN MARKET

Tokyo, June 8, 2006 – Mitsubishi Electric Corporation (President and CEO: Setsuhiro Shimomura) announced today it will introduce 2 models of photovoltaic inverters to the European market on September 1st. The inverters, which convert the DC current from solar cells to AC for power grid use, have one of the highest conversion efficiency (Max. 96.2%) and input voltage (Max. 700V) ratings in the industry, and will be displayed at the Intersolar 2006 exhibition in Freiberg, Germany, Europe's largest solar products trade fair, starting June 22.

Summary of Sale

Name of product	Model name	Rated AC power	Shipping Date	Forecasted sale
Photovoltaic Inverter	PV-PNS04ATL-GER/ -IT	3300 W	9/1/2006	5,000 units in 2006
	PV-PNS06ATL-GER/ -IT	4600 W		

Aim of Sale

Europe is the largest market in the world for photovoltaic power generation systems, and continues to grow at an annual rate of about 50%. This is due in part to the rapid expansion caused by Germany's new Feed-in Tariff subsidy system and other similar systems established in Spain and Italy.

In its 25 years of business history in Japan and recent market research on the European market, Mitsubishi Electric Corporation will be the first Japanese manufacturer to launch independently developed and manufactured photovoltaic inverters to the European market, we expect stable growth and aim to strengthen our photovoltaic power generation system business in the world's largest market.

The new products are similar to the safe, high efficiency, high reliability models produced for the Japanese domestic market. Sales will begin initially with indoor installation types, and then expand into other areas like outdoor installations, etc.

Special features of new products

1. One of the industry's highest conversion efficiency (max. 96.2%).

We have developed a new power module mounted photovoltaic inverter for the European market. The internal circuitry uses a new 3-level inverter system[1] (patent pending), as well as a high output low-loss new ferrite core material reactor filter to adjust electric current waveform, all allowing for optimal control and high conversion efficiency.

[1]reduces loss from switching between high, mid, and low potential

2. One of the industry's highest input voltage (max.700V)

We achieved one of the industries highest input voltages by using a newly developed input circuitry (patent pending) to minimize reduced conversion efficiency from high input voltage. Responses to high input voltage can make reduction in numbers of input strings, increasing the numbers of modules in series per one string, and improve the installation work.

3. Long term reliability using newly developed cooling and clean structure

Dust from cooling fans used to cool circuit boards has reduced the reliability of previous photovoltaic inverters. In this new inverter, we've mounted a temperature control fan that runs only when and where it is needed. This newly developed construction works only as a heat dissipation fan, and does not blow air onto the circuit board, blocking excessive flow to the circuit board. This maintains cleanliness in the circuit board section, giving the inverter superb and long lasting reliability. This structure can also operate in a wide temperature range of -25 degrees C to +60 degrees C fit for strict European installation conditions such as basements.

Other features of new products

1. High MPPT efficiency of 99.7%

The amount of electricity from solar modules are fed to the grid depends on conversion efficiency and the Maximum Power Point Tracking (MPPT) efficiency. We realized a MPPT efficiency of 99.7% with almost no loss by developing new software that controls the solar module to its maximum operating point

2. Long-term reliability using original derating design concept

There are more than a thousand electric devices in a photovoltaic inverter. We were able to reduce the number of electric parts and secure long-term reliability by using a derating design concept. All electronic parts of the inverter are value rated so it can be used with less operating parameters.

3. High safety and easy installation using internal terminal block connection

Based on many years of experience, Mitsubishi Electric uses a terminal block connecting method inside the photovoltaic inverter for connecting the cable from the solar module with the inverter, enhancing irrefragability and safety of installation. This also lowers costs and installation by eliminating the need for specialized tools to connect the inverter and modules by using general use ring tongue terminals commonly used in electric devices.

4. Highly fireproof metal cover enclosed structure

Photovoltaic inverters require a high level of safety since they are connected at high voltage to solar modules over extended periods of time. Mitsubishi Electric adopts metal enclosed housing structure that improves fireproofing of the inverter.

5. Lightweight 19 kg wall mounting unit simplifies installation

We were able to reduce the size and weight of the inverter due to high conversion efficiency. The inverter can be wall mounted, easing and simplifying installation.

6. Increased internal temperature control in parallel installation using asymmetrical air trunk structure

Asymmetrical trunk structure for the fan section side of the product prevents heat transfer between the inverters in case of parallel installation, realizing installation layout flexibility and optimal systems for each customer's requirements.

7. Large buttons and display with backlight improve usability

Numbers and letters can be easily read with a large, backlit display even in poorly lit areas. Large, user -friendly buttons can show many kinds of information easily such as generated output, maximum generated output in a day, accumulated generated power in a month, and accumulated generated power in a year.

8. Compliance with European RoHS[2] Directive and WEEE Directive[3]

Mitsubishi Electric is in compliance with European Directives ahead of photovoltaic contributing to environment sustainability.

[2] EU Directive on the restriction of the use of certain Hazardous Substances in electrical and electric equipment. This decree is structured to regulate the use of six specified hazardous substances in all electrical and electronic equipment sold in European Union member countries from July 2006.

[3] EU Directive on Waste Electrical and Electronic Equipment, rendering producers liable for the recovery and recycling of used electrical and electronic equipment.

Specifications

Model	PV-PNS04ATL -GER	PV-PNS06ATL -GER	PV-PNS04ATL -IT	PV-PNS06ATL -IT
Recommended generator power	4300 W	6000 W	4300 W	6000 W
Max. DC voltage	700 V_{DC}			
Min. DC voltage	150 V_{DC}			
PV-voltage range, MPPT	160 V_{DC} - 650 V_{DC}			
Max. input current	18 A_{DC}			
Max. numbers of strings	3			
Surge voltage protection	varistors, surge absorbers			
Personnel protection	ground fault monitoring			
Max. AC power	3500 W	5000 W	3500 W	5000 W
Rated AC power	3300 W	4600 W	3300 W	4600 W
Max. AC current	15.2 A	21.7 A	15.2 A	21.7 A
Rated AC current	14.3 A	20.0 A	14.3 A	20.0 A
THD of grid current	< 5%			
Possible range of AC Voltage	184V - 265 V		184V - 276 V	
AC frequency	47.5 Hz - 50.2 Hz		49.7 Hz - 50.3 Hz	
Phase difference	Approx. 1			
Connection to utility	Terminal Block			
Internal consumption in stand-by	< 0.5 W			
Max. efficiency	96.2 %	96.2 %	96.2 %	96.2 %
Euro. efficiency	95.1 %	95.4 %	95.1 %	95.4 %
MPPT efficiency[4]	99.7 %	99.7 %	99.7 %	99.7 %
Protection degree	IP41 <indoor>			
Cooling	Controlled forced ventilation			
Ambient temperature	-25 C - +60 C			
Relative humidity	30%- 90%			
Dimensions (W x H x D)	300 x 170 x 500 mm			
Weight	Approx. 19 kg	Approx. 20 kg	Approx. 19 kg	Approx. 20 kg
Noise level	< 45 dB			
Display	Integrated LCD display with backlight			
Display language	3 languages（German, English, Italian）			
Insulating style	Transformerless			
External communication	RS485 interface			

Regulation/ Certificate	CE conforming	
	DIN VDE0126-1-1	DK5940, CEI 11-20
	DIN EN50178	
	DIN EN6100-3-2	
	DIN EN6100-3-3	
	DIN EN6100-6-2	
	DIN EN6100-6-3	
	DIRECTIVE 2002/95/EC (RoHS Directive)	
	DIRECTIVE 2002/96/EC (WEEE Directive)	

[4]at rated output

About Mitsubishi Electric

With over 80 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation (TSE:6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. The company recorded consolidated group sales of 3,604 billion yen (US$ 30.8billion*) in the fiscal year ended March 31, 2006. For more information visit http://global.mitsubishielectric.com

*At an exchange rate of 117 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2006.