



PV Inverters from the World's
Largest Power Electronics Company

Delta RPI: 6kW, 10kW

Grid-connect PV Inverter

RPI Commercial Series: M6A, M10A

Product Features

- Transformerless design
- Dual MPP trackers
- Wide voltage range
- Class-leading peak efficiency of 98.3%
- Power limiting options available
- IP65 protection level
- Built-in AC/DC isolation switch
- Aluminum die-cast enclosure
- LCD display
- Easy installation
- Wall mountable





High Efficiency Performance

Class-leading efficiency up to 98.3% for 6-10kW systems, using advanced transformerless topology developed by Delta, the global leader in power electronics. The ultra-high efficiency is consistent across the entire voltage and power range, providing reliable and stable performance.



Wide Working Voltage Range

Ultra-wide operating voltage range from 200-1000V allows greater flexibility in string configuration. Even under harsh environmental conditions, the wide MPPT range makes it easy to configure PV arrays to stay within the maximum power operating range.



Dual Maximum Power Point Trackers

Two MPPTs optimise power harvesting from separate arrays with different pitch and orientation. The inverter will track the optimal power point for each array independently. Alternatively, both inputs can be paralleled and the inverter used in single MPPT mode.



Asymmetrical Loading

Symmetrical and asymmetrical loading can be supported, for greater design flexibility and performance. The ability to handle unbalanced DC inputs allows different sized strings to be configured without compromising the system performance.



AC/DC Safety Switch

To ensure safety during installation, the inverter is equipped with a mechanical AC/DC switch that is designed to manually disconnect both AC and DC power sources simultaneously. At this point, the inverter is completely powered off to prevent the possibility of electric shock.



High Quality Design

Revolutionary light and compact design, with a robust die-cast case to ensure quality and durability. Each inverter satisfies IP65 protection level and rigorous reliability testing, such as highly accelerated life testing (HALT).



Communication Options

The inverter is equipped with a standard RS485 communication port and a digital input interface, which provide options to connect an external third party zero export control device.



Simple installation

The lightweight, compact design and unique wall bracket allow easy and cost efficient installation. Universal multi-contact MC4® DC connectors allow fast and safe connections.



Passive Cooling

Innovative heat-sink design for passive cooling reduces the operating temperature of the inverter through a natural convection process, eliminating the need for fan and filter maintenance. The enhanced cooling helps to protect sensitive electrical components and extends the life of the inverter.



Power Limiting

Able to select and lock different AC output power settings during installation to meet specific grid requirements for greater versatility in application.



External Alarm

Compliant with IEC62109, the inverter is equipped with an internal dry contact, which can be configured to trigger in case of an earth fault.



Power Quality

Various active and reactive power factor modes. Constant $\cos(\phi)$ is the most common setting for Australia.

About Delta

Delta is the world's largest power electronics company and a leading manufacturer of switching power supplies, telecom power supplies, DC brushless fans, thermal management solutions, industrial automation, datacentre solutions, networking, and renewable energy products. With over 40 years' experience in manufacturing, Delta specialises in OEM and ODM, meaning it designs and manufactures electrical products for some of the largest electronics brands in the world.

Headquartered in Taiwan, Delta's entire global operation consists of over 153 offices, 38 manufacturing plants, 60 R&D centres, and 70,000 employees dedicated to the pursuit of innovative and efficient technologies that deliver the brand's promise of: "Smarter. Greener. Together."

Delta's vision for a greener, cleaner, more energy-efficient future, is inspiring people to change the way they manage and consume energy. Leading by example, Delta's green manufacturing processes, recycling and waste management programs and the construction of Diamond and Gold LEED certified green buildings has earned its place in the Dow Jones Sustainability™ World Index (DJSI World) for the last four years.

Delta began developing its solar inverters at its German research and development centre almost 20 years ago and with their unsurpassed experience in power electronics, have been able to achieve some of the best in efficiency, reliability and power conversion rates in the industry, with leading efficiencies including:

- The world's first server power supply certified as 80 Plus Titanium, with over 96% efficiency,
- PV inverters at up to 98.7% efficiency,
- Switching power supplies at over 90% efficiency, and
- Telecom power with up to 97.5% efficiency.

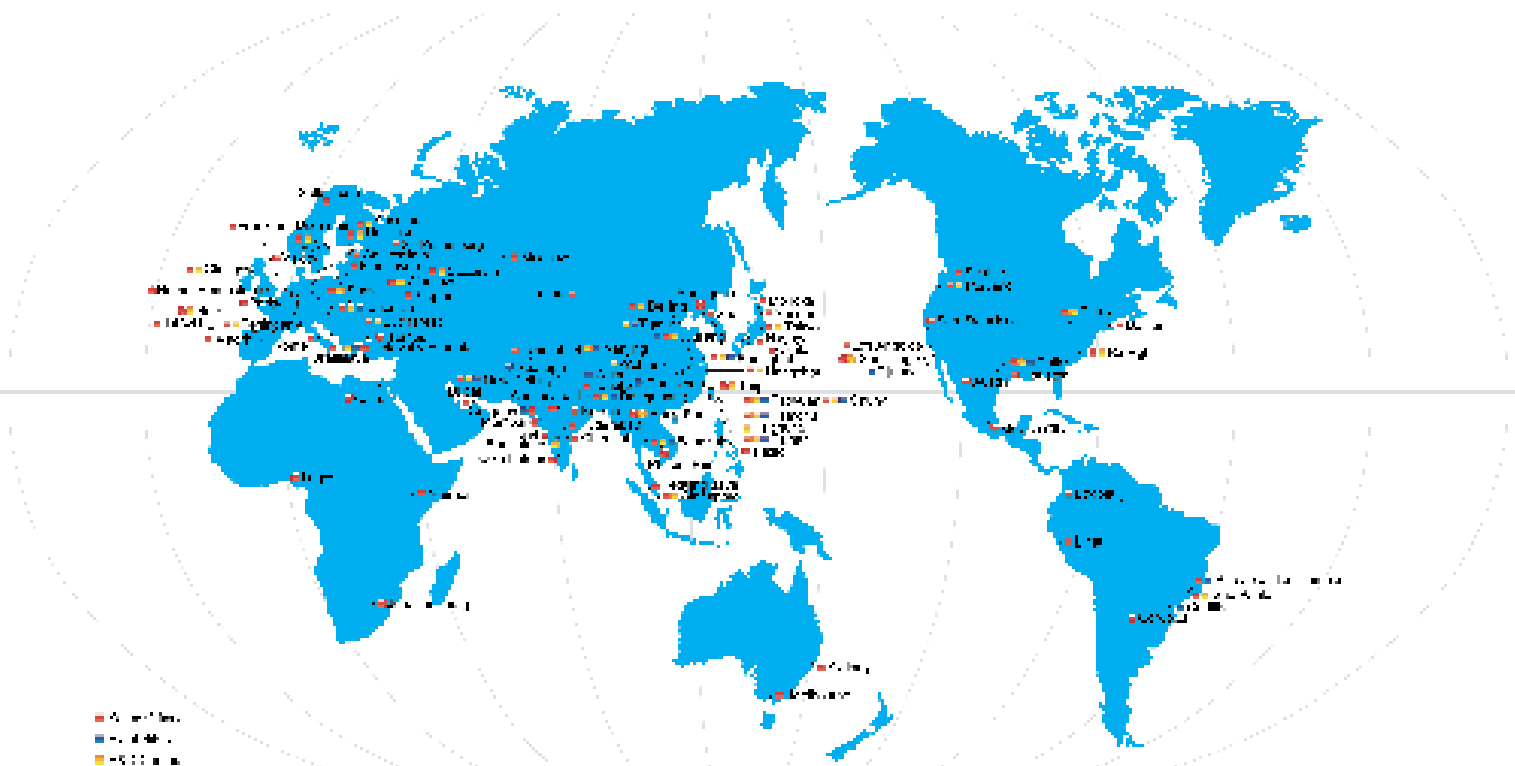
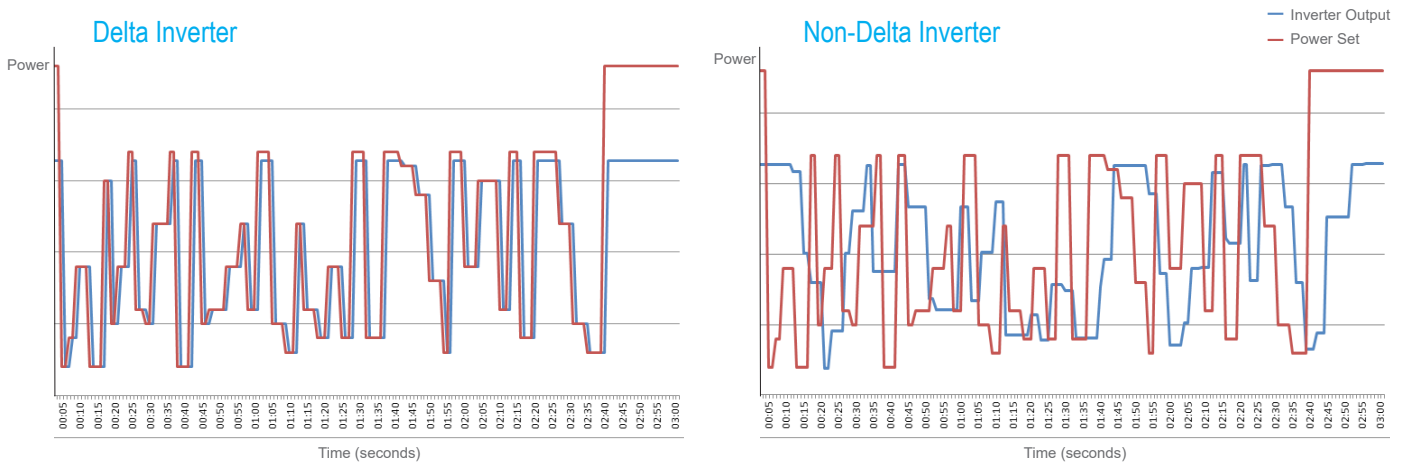
Export Control

Delta's inverters are compatible with a large range of third party Zero Export solutions, offering highly responsive RS485 load-following as well as universal 4-bit digital input control, maximising self-consumption.

Quick load following response times are critical to achieve efficient export control from a PV system. Delta's advanced algorithms enable their inverters to follow the power set more precisely and respond faster to changes in the load, avoiding disconnection due to reverse power protection.

The graphs below are from a test conducted in Australia to simulate a real-world application. They demonstrate the response times of two different brands of inverters over a three minute period, in 2-5 second intervals.

As illustrated below, Delta's algorithms enable their inverters to follow the load more precisely and respond faster to changes; resulting in the maximum possible PV power being used on site. In contrast, the non-Delta inverter tested was erratic and unable to ramp up and down in accordance with the changing power set, which inevitably leads to lost production.



Technical Specifications

Input (DC)

	M6A	M10A
Maximum recommended PV power	7,500W	12,500W
Maximum input voltage	1,000V	1,000V
Operating voltage range	200 ~ 1,000V	200 ~ 1,000V
MPP voltage range - symmetrical	315 ~ 800V	415 ~ 800V
MPP voltage range - asymmetrical	425 ~ 800V	415 ~ 800V
Start-up voltage	>250V	>250V
Nominal voltage	600V	600V
MPP tracker	2	2
Maximum asymmetry (%)	60 / 40	60 / 40
Maximum input current (DC1 / DC2)	10A / 10A	15A / 10A
Maximum input current (total MPPT)	20A	25A
Connection type	2 pairs MC4 (1 / 1)	3 pairs MC4 (2 / 1)

Output (AC)

Maximum apparent power	6,300VA	10,500VA
Power limiting options	4,990W	N/A
Maximum output current	9.7A	16A
Rated voltage	3Ph 230/400V Y or Δ	230V
Operating voltage range	±20%	-20% / +22%
Operating frequency range	50 / 60Hz ± 3Hz	50 / 60Hz ± 3Hz
Power factor (adjustable)	0.8 ind ~ 0.8 cap	0.8 ind ~ 0.8 cap
Total Harmonic Distortion (THD)	<3%	<3%
Night time loss	<2W	<2W

Efficiency

Peak efficiency	98.30%	98.30%
Euro efficiency	97.60%	98.00%

Information

DC Switch	Yes	Yes
Communication port	RS485 / Dry contact	RS485 / Dry contact
Display	20x4 LCD	20x4 LCD





Certification

	AS4777 AS3100 IEC 62109-1 IEC 62109-2 EN 61000-6-2 EN 61000-6-3 IEC 31000-4-2 IEC 31000-4-3 IEC 31000-4-4 IEC 31000-4-5 IEC 31000-4-6 IEC 31000-4-8
	EN 61000-3-2 EN 61000-3-3
	EN 61000-3-11 EN 61000-3-12

General Data

Operating temperature range	-25 ~ 60°C	-25 ~ 60°C
Protection level	IP65	IP65
Cooling	Natural convection	Natural convection
Dimensions (W x H x D)	510 x 445 x 177mm	510 x 445 x 177mm
Weight	25kg	26kg
Delta part number	RPI602FA0E1000	RPI103FA0E1000

Delta Energy Systems Australia

 20-21 / 45 Normanby Rd, Notting Hill VIC 3168
 (03) 9543 3720
 info@delta-es.com.au
 www.delta-es.com.au

