



The power behind competitiveness

# Delta Utility Scale Inverter

Grid-Tied Solar Inverter

C1000 Outdoor Rated Central Inverter



## Product Features

- Peak efficiency 98.7%
- CQC\_NB/T 32004 / Golden Sun LVRT certified
- Wide DC input voltage rang 520-1000V
- Compact size
- Reactive power control
- IP65 protection level
- 5" graphic LCD display
- 6 optional language display

# Delta Central PV Inverter

## High quality enclosure for outdoor environment

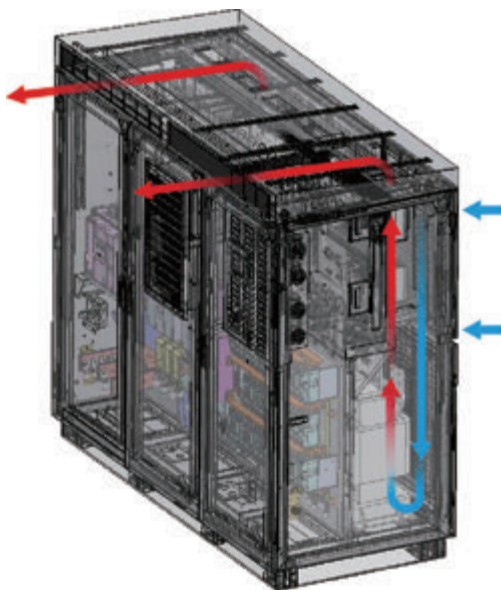
C1000 Central inverter is manufactured to meet high standard quality to maximize yields of every solar plant with peak efficiency up to 98.7%. IP65 protection level enclosure and corrosion resistant features ensure the inverter protection in both indoor and outdoor environment. Building an additional machine room for inverters is no longer necessary to save the cost for power plant construction.



## High reliability & durability

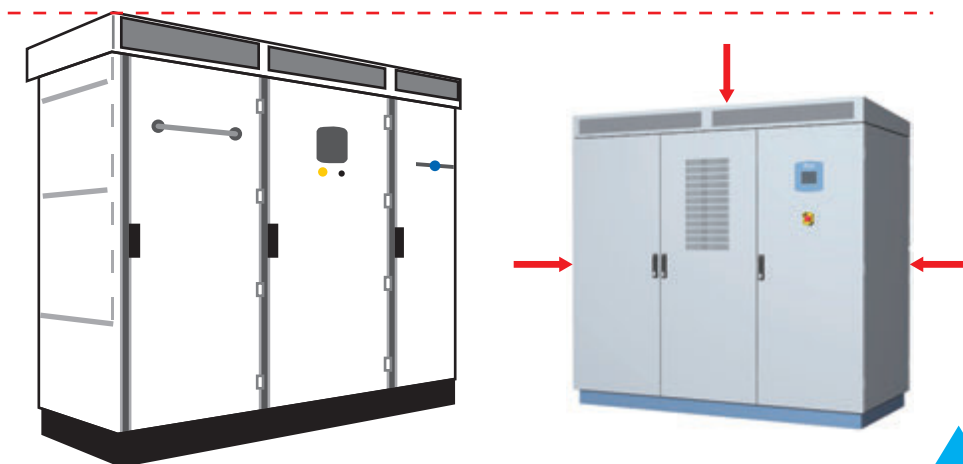
Delta C1000 central PV inverter is designed with fresh air flow circulation feature. This increases PV system performance by ensuring less power wasting due to unnecessary cooling. There are suction holes in the back of the enclosure to bring fresh air flow into the enclosure and lower down the system temperature. The hot air will flow out from top of the enclosure to create a perfect air flow circulation. The enclosure isolates all the electronic components into the front compartment with IP65 protection level to prevent any possible interferences from the air circulation or dusts from outside.

This protects all electronic components to maintain its performance, and also increase the durability and reliability of the inverter.



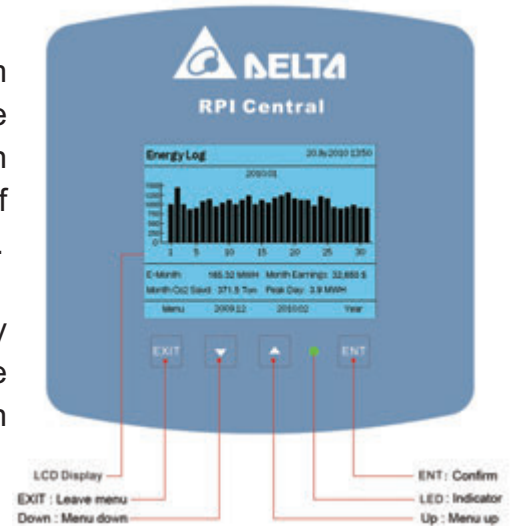
## Compact size

Delta Central PV inverter design is based on transformerless topology which occupies only 2/3<sup>rd</sup> of space compared to other transformerless inverter in the market. The compact size of C1000 central inverter allows more flexibility to install in different location and save more construction cost.



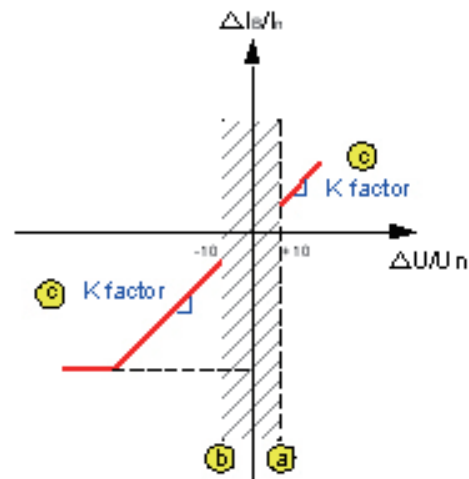
## Smart communication & logger

5" LCD display on the inverter shows all the relevant system information and settings. Easy to use push button interface enables to access all important data stored inside the built-in data logger. Logger will automatically record information of electricity generated by solar system in several periods of time. Power generation data, every 5 minutes data will be saved for 1 day and every 15 minutes data will be saved for 1 month. Daily total power generation data will be saved in the system for one year. Monthly total power generation data will be saved in the system for 10 years.

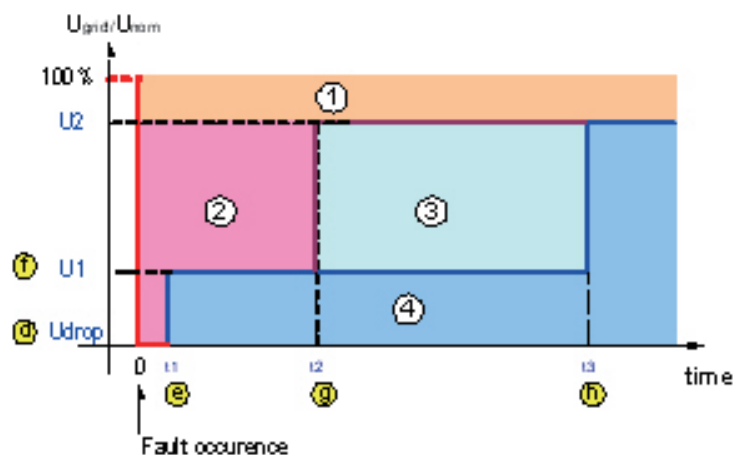


## Easy LVRT configuration

FRT - 1/2		21. Jun 2010 13:50	
a	Dead band - Vh	[ +10 ]	%
b	Dead band - Vl	[ -10 ]	%
c	K factor	[ 2.0 ]	
d	Vdrop	[ 5 ]	%
e	t1	[ 150 ]	ms
f	U1	[ 20 ]	%
g	t2	[ 1.5 ]	s



FRT - 2/2		21. Jun 2010 13:50	
i	t3	[ 3.0 ]	s
l	Mode	[ 0N ]	



Delta central inverter is certified with LVRT (Low Voltage Ride Through) regulation. LVRT manages the system to stay online during grid disturbances and also to support network voltage by feeding a reactive current into the network. When Delta central inverter is connecting to medium grid, LVRT function will be activated automatically with default settings. Site operator can easily access the LVRT configuration from LCD panel on the inverter to setup/change the configurations (such as voltage / time range) according to local regulation.

# Delta Utility Scale Inverters

## Technical Data - C1000

<b>MODEL</b>	<b>C1000</b>
Topology	Transformerless

### INPUT (DC)

Max. Input Voltage	1100 Vdc
DC Voltage Range	520 ~ 1000 Vdc
Start-up Voltage	650 Vdc
MPPT Voltage Range	550 ~ 850 Vdc
MPP Voltage Range, Full Power	550 ~ 850 Vdc
Rated Input Current	2050 A
No. of Independent MPP	01 No
No. of DC Inputs	14 No's
Input Connection Type	Ring terminal lug (M8, Max.150mm <sup>2</sup> )
DC Disconnection Isolator Protection	DC Breaker (250A/1000Vdc) Type 2 DC SPD

### OUTPUT (AC)

Rated Output Power	1000 kVA
Rated Output Current	1650 A
Nominal AC voltage	3 Ph 350 Vac
AC Voltage Range	-10% ~ +10% (315 to 385 Vac)
Nominal Frequency	50/60 Hz
Frequency Range	±5 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Ind ~ 0.8 cap
Total Harmonics Distortion (THD)	<3% at Rated Power
No. of Conductors	3P3W + PE, Ring Terminal lug (M12, Max. 240mm <sup>2</sup> )
AC Disconnection Type Protection	ACB (2000A/690Vac) Type 2 AC SPD

### EFFICIENCY

Maximum Efficiency	98.84%
Euro Efficiency	98.40%

### PROTECTION

Input-side Disconnection Device	Yes, DC Breaker
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	Type II SPD
Output-Side Disconnection Device	Yes, AC Breaker (ACB)
LVRT (FRT)	Yes
PID Off-set Function	Yes

### GENERAL DATA

Dimension (H/W/D)	1980 x 2100 x 950 mm
Weight (kg)	2030 kg
Operating Temperature Range	-25°C ~ 60°C (>50°C Derating)
Relative Humidity	5~95%, Non-Condensing
Operating Elevation	<3000 m
Degree of Protection	IP65 (Outdoor)
Noise Level (Typical)	80dB @ 1 m
Self Consumption at Night	<55 W
Cooling	Forced Fan Cooling

### SAFETY / STANDARDS

Anti-Islanding Protection/ Grid Regulation	IEC 62116 / IEC 61727
EMC	EN 61000-2/4
Safety	IEC 62109-1/2
Efficiency	IEC 61683
Environmental Testing	IEC 60068-2
LVRT	GB/ T : 19964 : LVRT

### COMMUNICATION

Communication	RS 485
Display	5" Graphic LCD
Built-in Energy Data Logger	Yes
Emergency Power Off (EPO)	Yes

### WARRANTY

Standard Warranty Years	5
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### Notes

1. Anti-PID function: C1000 has built-in Anti-PID function which can prevent/compensate the PID effect on PV modules. PV Modules Grounding is not allowed.
2. SVG (Night time reactive power): C1000 can generate reactive power at night to meet the utility's requirements to compensate/stabilize the grid.
3. Please refer to our Standard Warranty Terms and Conditions for details.

For Any Sales / Application Engineering Support, Please Contact:

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The Power Behind Competitiveness

# Delta Utility Scale Inverters

Grid-Tied Solar Inverter  
DeICEN 1000



## Product Features

- High Efficiency up to 98.6%
- Dynamic and Adaptive MPPT Algorithm
- Reactive Power Control (0.8 Lagging - 0.8 Leading)
- Powerful Black Box Diagnostics Tool
- Temperature Derating starts only after 55°C ambient temperature
- Make in India Product

[www.deltaelectronicsindia.com](http://www.deltaelectronicsindia.com)

 **DELTA**  
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# Delta Utility Scale Inverters

## Technical data DelCEN 1000

<b>Model</b>	<b>DelCEN 1000</b>
<b>Topology</b>	Transformerless

### INPUT (DC)

Recommended Max. DC Power	1250 kWp
Max. Input Voltage	1000 V
DC Voltage Range	550 - 1000 V
Nominal MPPT Voltage range	610 - 930 V
Rated input current, continuous	1670 A
Isc PV absolute maximum	2100A
No. of independent MPPT	1
Input connection type	Bus Bar (10 Nos.)
DC disconnection Isolator	Yes (inbuilt)

### OUTPUT (AC)

Rated Output Power	1000 kVA
Max. output power	1100kVA <sup>4</sup>
Rated output current, Continuous	1445 A
Max. output current	1590 A
Nominal AC voltage	3 Ph, 400V
AC voltage range	400V ± 10% (360V ~ 440V)
Nominal Frequency	50 Hz
Frequency Range	50 Hz ± 10% (45Hz ~ 55Hz)
Power factor at rated power	Unity
Reactive Power (adjustable)	0.8 Lagging ~ 0.8 Leading
Total Harmonics Distortion (THD)	<3% at rated power
No. of conductors	3 Wire (L1, L2, L3)
Output Connection type	Bus Bar (4 runs per phase)
AC disconnection	ACB

### EFFICIENCY

Maximum Efficiency	98.60%
Euro Efficiency	98.40%

### PROTECTION

Input-side disconnection device	Yes, DC Isolator
Input-side Fuse protection (String Fuses - 10 Nos. per MW)	Yes (Positive only)
Ground fault monitoring / Grid monitoring	Yes
DC reverse polarity protection	Yes
DC over voltage / current limitation protection	Yes
AC short circuit protection	Yes
AC over voltage / current limitation protection	Yes
DC / AC side surge protection - inbuilt	SPD (Type I + II)
AC side disconnection device	ACB
Reactive Power at Night Time	Available (Optional) <sup>3</sup>
LVRT (FRT)	Yes

### COMMUNICATION

Field Bus Communication	MODBUS TCP IP
Local Monitoring / Display	10.1" LCD Display (HMI) - Touch Screen
Built-in Energy data logger	Yes
Emergency Power Off (EPO)	Yes
Analog Input	Yes (4 nos)
Digital Input	Yes (4 nos)

### GENERAL DATA

Dimension (H/W/D)	2200 x 2200 x 935 mm
Weight (kg)	1500 kg
Operating temperature range	-10°C to +60°C (full power: -10°C to 55°C)
Relative Humidity	5~95%, non-condensing / non dripping
Operating elevation	<2000 m
Degree of Protection	IP54 (Indoor)
Noise level (typical)	75 dbA
Self consumption at night	<50 Watts
Cooling	Advanced Liquid Cooling
Auxiliary Power	Derived internally (no need for external power) <sup>5</sup>

### CERTIFICATION

Anti-islanding Protection	IEEE 1547
EMC	IEC 61000
Safety	IEC 62109-1,- 2:2011
Efficiency	IEC 61683:1999
MPPT Efficiency	BS EN 50530
Harmonics	IEEE 519
Environmental stress tests	IEC 60068
IP test	IEC 60529

### WARRANTY

Standard Warranty Years	5
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### Notes

1. If PV Module is Grounded (Negative / Positive Grounding), 2 nos of DelCEN 1000 can be hard paralleled for higher block size requirement. This can be further extended to have 4MW, 6MW and 8MW block sizes using multi-winding transformers.
2. Parallel operation is possible up to 4 Inverters provided the PV Module is not grounded (ungrounded system).
3. DelCEN 1000 comes with night time reactive power compensation capability of 1MVAR as optional.
4. Grid voltage should be within operational limit; Ambient temperature should be <40°C to achieve 1100kVA.
5. Grid Phase Sequence should be R-Y-B only

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The power behind competitiveness

# Delta All in One Storage Solutions

Single Phase Solar Inverter  
E5

- Hybrid inverter Model : E5
- 6.0 kWh Li-ion Battery Model : BX\_6.0
- Smart monitor & control Model : R4
- Power meter Model : P1E / P3E



It is time to embrace truly energy independence.

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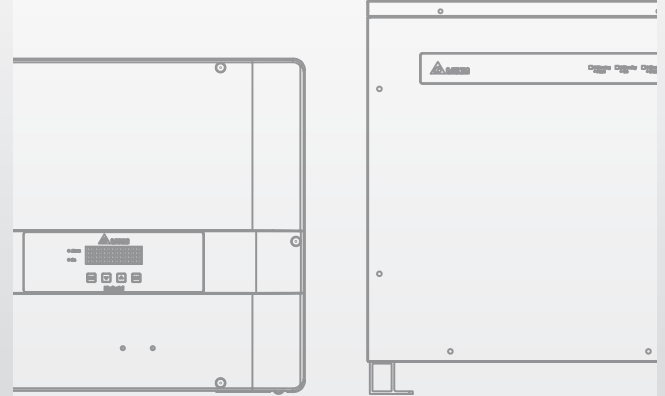
# All in One, All Delta



Seamless integration with 5KW hybrid inverter, Li-ion battery and touchable monitor system. The best solution to reach energy independence from the grid.

# Outdoor is Must

# IP65 IP55



Are you concern to install battery inside your house? Don't worry, Delta storage systems (inverter and battery) are all outdoor ready.

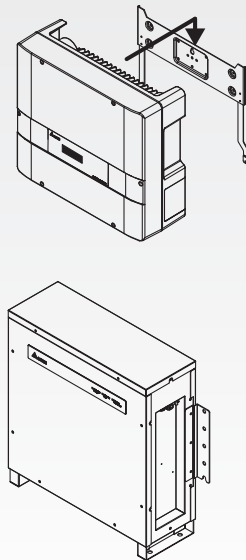
## Product Features

### Absolutely Quiet



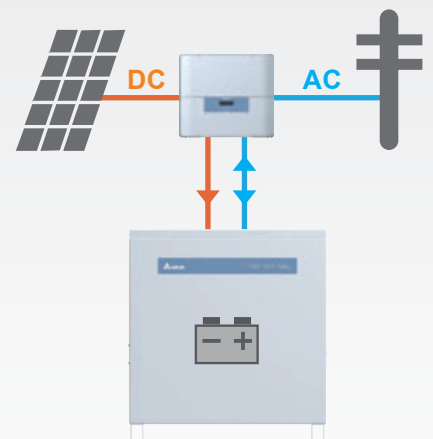
Brilliant design without any fan inside the inverter and battery optimize the user experience.

### Easy Installation



Hassle-free installation for inverter and battery. Delta BX6.0 battery even supports wall mount and floor mount.

### Truly Hybrid



Integration with DC & AC coupling, Delta E5 hybrid inverter can maximize the flexibility for different energy storage scenario and demand.



# The Safest Battery



Over Voltage

Short Circuit



Over Temperature

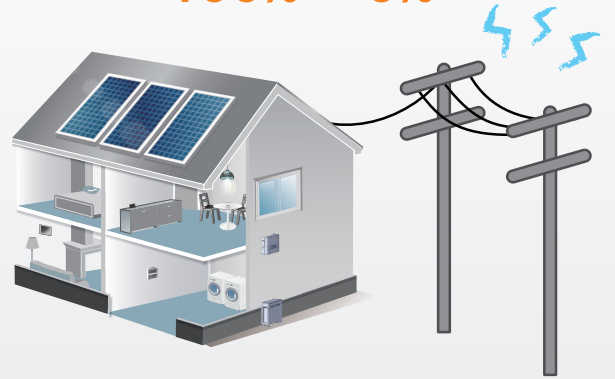
Over Current

BX\_6.0 is the most reliable battery. Water and dust proofed for indoor and outdoor environment. Resistible for 5000kg stress and 1100 degree temperature.

- \* Heat resistance temperature up to 1100 degree which will not cause flame out of battery cabinet even since spontaneous combustion.
- \*\* Built by Panasonic's Li-ion battery pack with 18650 cell.

# Zero Export

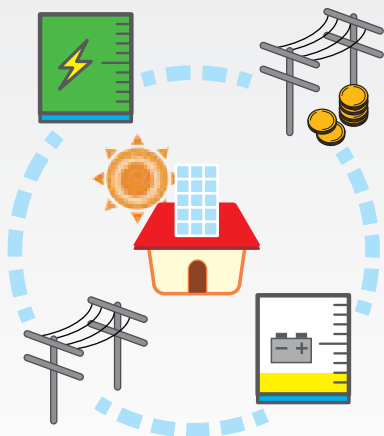
100% ~ 0%



With the complete Delta storage solution which can execute the feed in power limitation from grid, home users still can enjoy the optimized power output from PV system. Delta storage system fulfill the demand of home usage and chargeable battery capacity, then limit the power generation from PV system dynamically.

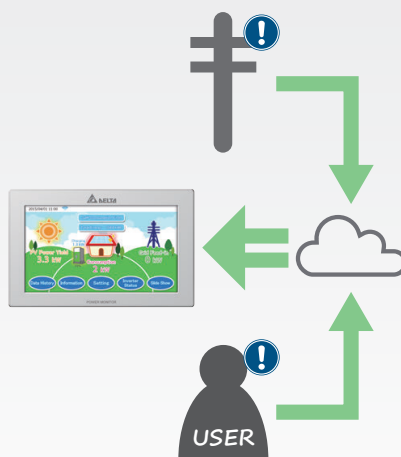
## Product Features

### Smart Multiple Control



7 operation modes, select the favorite application for your home by one touch.

### Remote Control



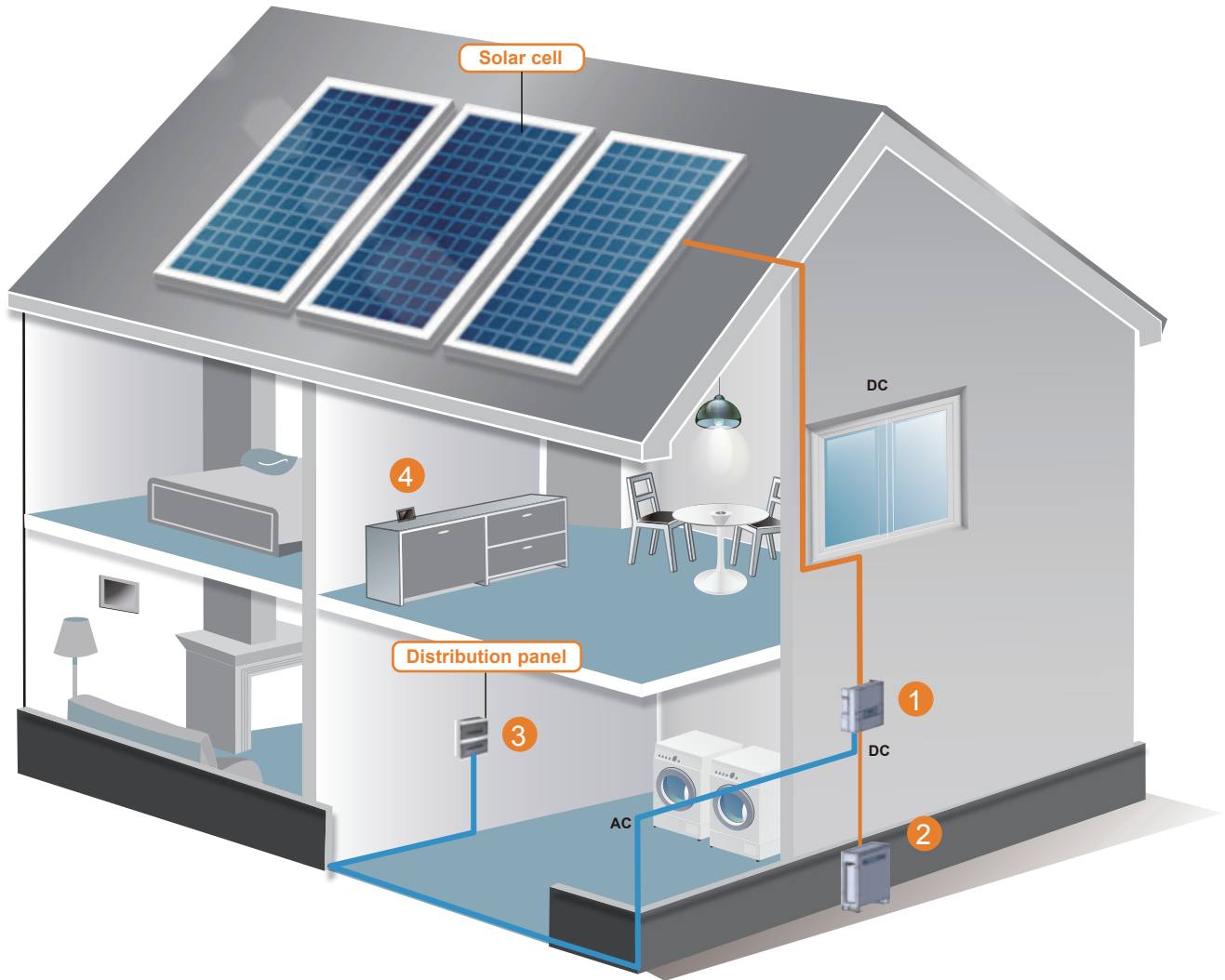
Well integrated of communication interface, E5 can Execute the instruction from grid or user remotely.

\* FW upgradable for receiving the signal from grid operator, then implement the instruction.

### Touch Screen Local Monitoring



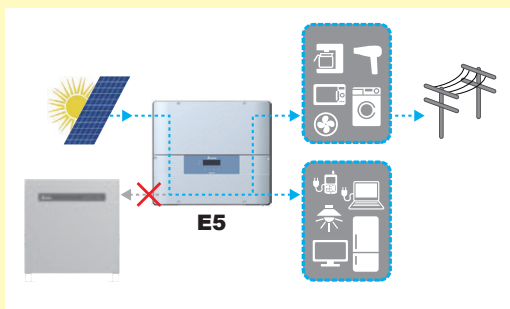
7" touch screen monitor, user can ensure for completely local monitoring without encryption concern.



The Hybrid E5 energy storage system consists of a single phase 5kW hybrid inverter, an external battery cabinet equipped with a high capacity 6 kWh Li-Ion battery, power meter and Smart Monitor. The Hybrid E5 storage system has been designed to integrate seamlessly with the battery and features dual MPPT, standalone function and a high charging efficiency of up to 97%. This is made possible as the inverter can send DC electricity generated by the PV system directly to the battery, without any additional power conversion steps or equipment required. The E5 inverter and battery cabinet are compact and detach from each other, allowing for greater flexibility and simplified installation. The power meter measures energy flow and displays the data on the Smart Monitor, which can be used to control the system operation modes to maximise use of self-generated solar energy.

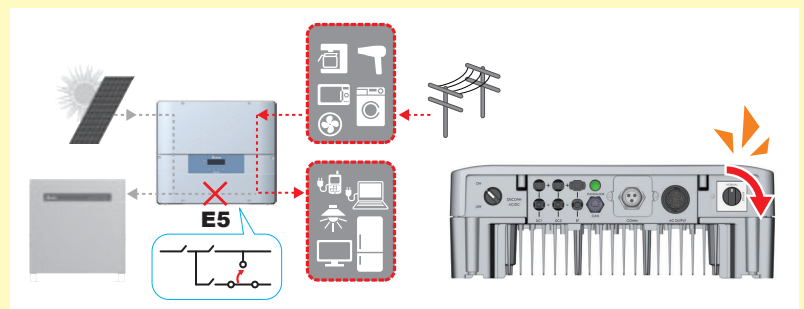
### PV inverter only

If battery is not installed yet, the E5 inverter can work independently as a regular PV inverter.



### Manual bypass

If the E5 system works abnormally, the manual bypass function can provide energy continuously.



## 1 Hybrid Inverter

The hybrid inverter can power household loads.  
The rest power can charge to battery or feed-in to grid.  
At nighttime, it can adjust electricity and make it possible to charge battery from grid.



## 2 Battery

6 kWh high capacity Li-ion battery can provide power and by storing solar energy at daytime for nighttime use.  
Extendable to max. 2 sets of BX\_6.0.



## 3 Power Meter

Smart meter can calculate power consumption and feed-in to grid.  
It also can calculate how much power purchased from utility company at daytime and nighttime.



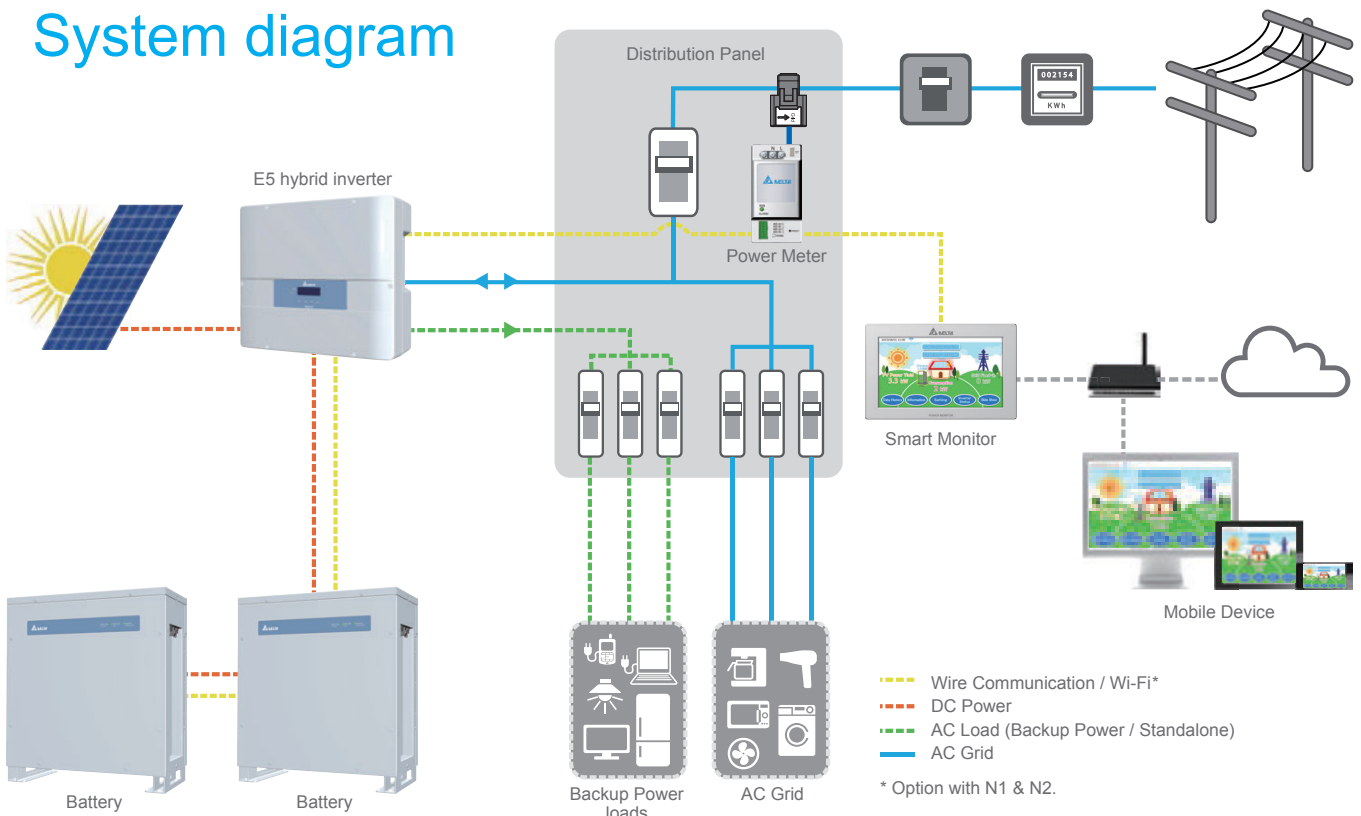
## 4 Smart Monitor

Owner can simply read power produced, power consumption and convert and control to different operation modes via smart monitor.

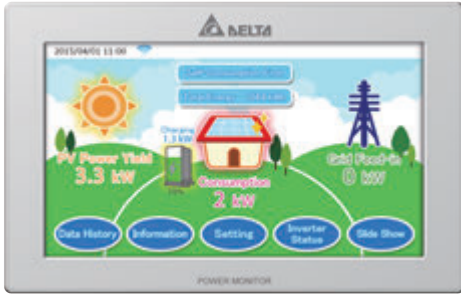


## 5 Delta Solar Cloud Service

24/7 remote monitoring for your electricity consumption.  
E-mail notification for warning and alarm information.  
Data storage up to 20 years.



# Smart monitor



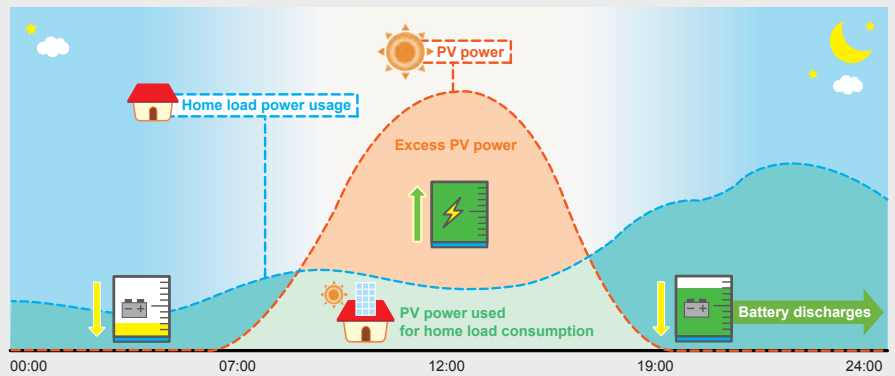
Smart energy monitor to control and optimize the system and the power usage of the owner.

It provides all power consumption and battery status data to the user online.

# Maximized energy application

## Self-Consumption Mode

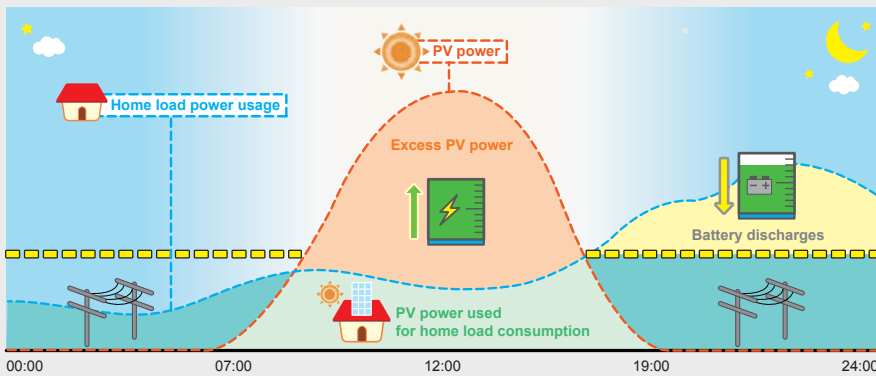
This setting allows the owner to maximize the use of self-generated solar energy by storing the excess solar energy produced during the day for later use. In this mode the inverter will essentially act as a standard hybrid inverter with the added advantage of being able to programme different battery charge and discharge times for purchasing and exporting energy to the grid. When there is no PV power, the battery will supply home load until the available energy is depleted (night time).



## Peak Cut Mode

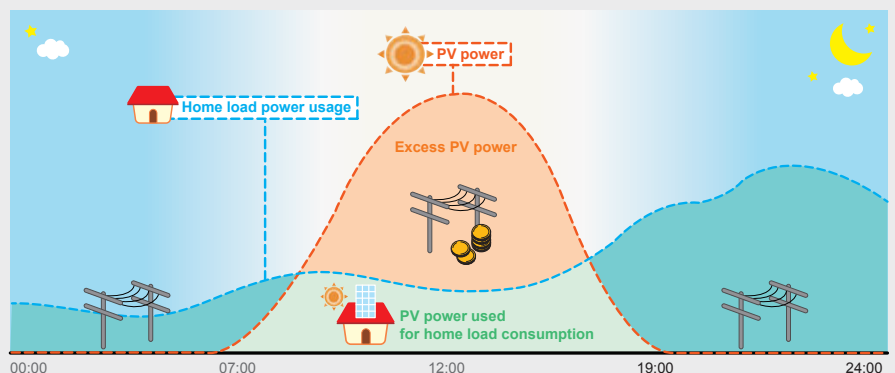
This setting helps reduce peak demand and subsequent cost from the grid provider by discharging batteries at a predefined 'peak level'. When the home load exceeds the 'peak level' (set by the installer), the battery will discharge to assist the home power usage.

This allows the stored energy to be used at times of the day when savings are greatest.



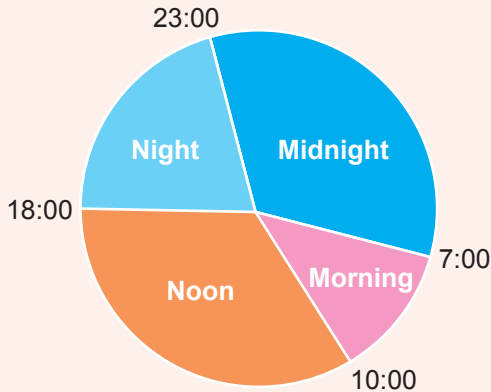
## Without Battery Mode

This allows the E5 hybrid inverter to operate as a standard grid-connected inverter until the home owner is ready to add the battery unit. In the event of a battery fault, the system can also be programmed to supply localised loads directly from the available PV source (battery bypass).





# -Scheduling-



Both Monitor and Display provide time setting for purchasing and feeding in energy. Even Monitor is no installed, it's also convenient for user to operate.

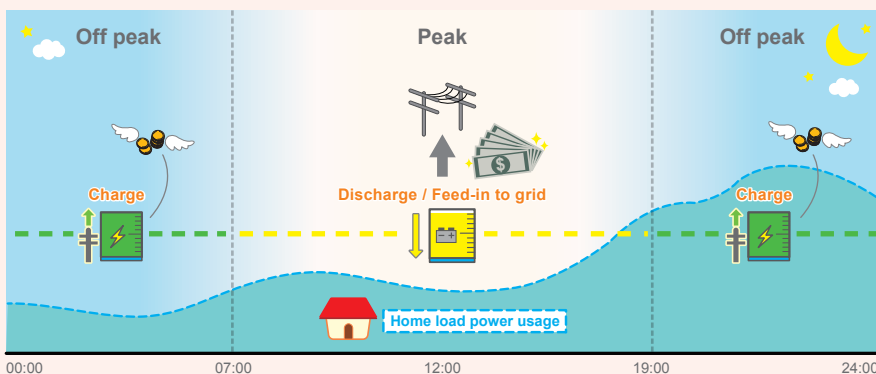
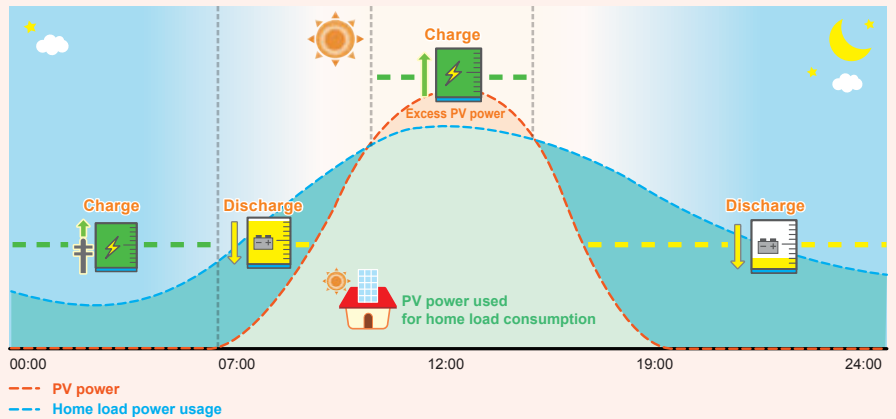
## Time Settings

Time settings can be separated into Battery charge time and Battery discharge time. Each setting can set 3 time intervals. These 6 time intervals cannot overlap with each other. When the inverter operation mode set to self-consumption or selling first mode, time settings is enabled. Hybrid inverter will automatically change the mode to charge first / discharge first in the time intervals you set and return to self-consumption / selling first mode outside the intervals.



## Application for TOU Rates (Time of use rates)

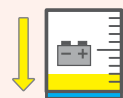
Time-of-use is a rate plan in which rates vary according to the time of day, season, and day type (weekday or weekend/holiday). Higher rates are charged during the peak demand hours and lower rates during off-peak demand hours. Rates are also typically higher in summer months than in winter months. By using the time setting function, home user can set to purchase electricity to charge the battery from grid during off-peak demand hours, and limit the power purchase from grid during peak demand hour.



Thanks to the time setting functions, home user can easily set up the schedule according to the user habits, TOU rates and grid standard. Benefit and optimize the power utilization from Delta Storage System!



Charge



Discharge

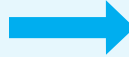
# Backup power supply

The stand-alone function of the Hybrid E5 inverter allows the owner to use the battery to power critical loads when the grid is not available. This function will activate automatically during a power outage, although the E5 also has a button to manually switch the system to stand-alone mode. This function is particularly useful in regions where grid power is not regularly reliable. The inverter is still able to enter stand-alone mode even when the battery is not connected, as long as there is sufficient PV production to power the loads.

## Power outages



After  
3 seconds\*



## ON



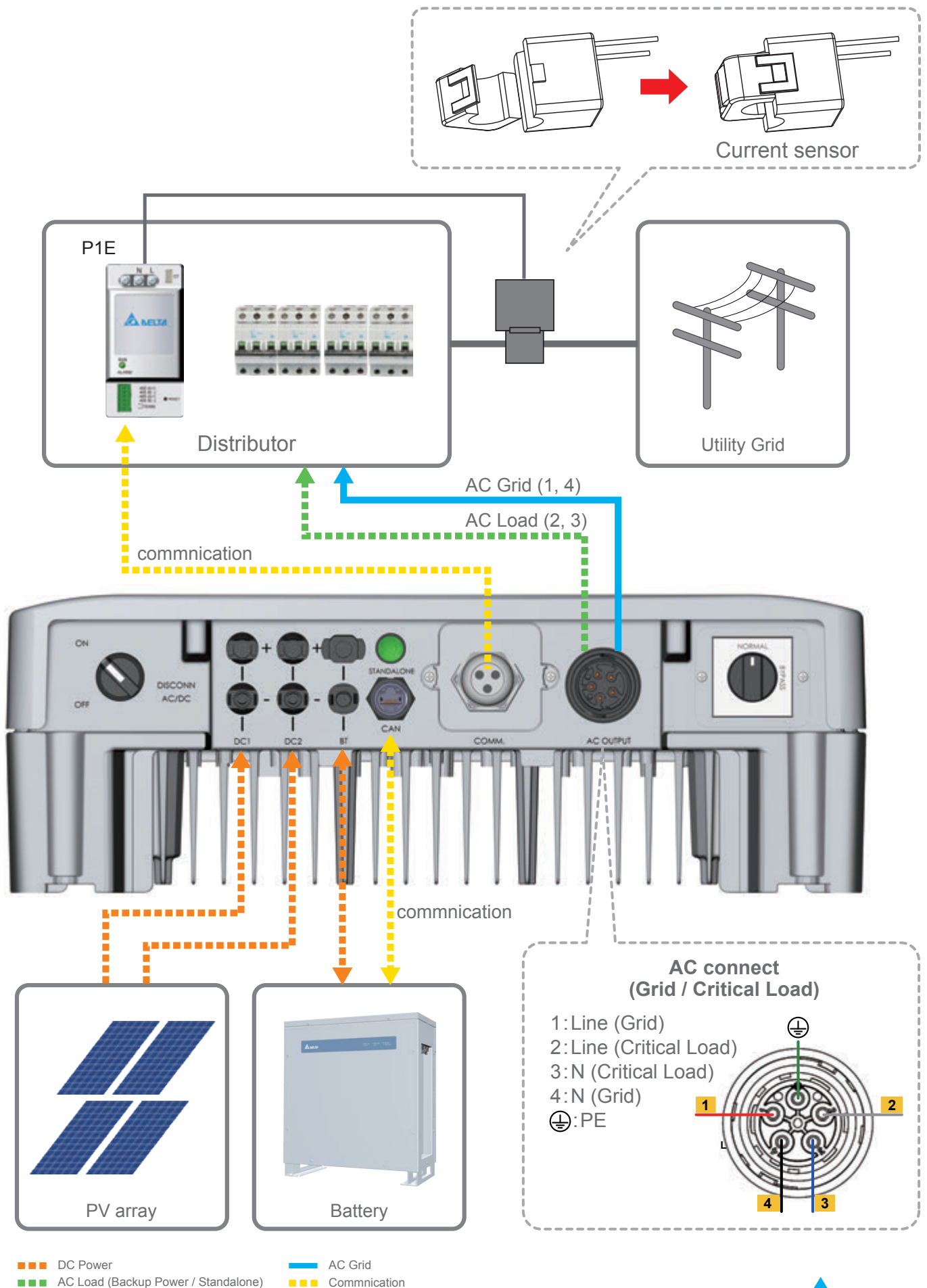
\* Delta storage system is completely complied with the grid standard which stands for maintain the stability of feed in power, E5 will only change to back-up mode 3 secs after black out.

# Solar standalone power supply

The E5 system allows the owner to use battery to generate power when the grid is not easily available like in an island or mountain or grid available cost is high. At daytime, it can convert to DC power from PV cell for household load and store the rest power to battery. At nighttime, battery can provide power for loads. From this cycle usage, E5 system can make globe greener.



# Input / Output Interface



- DC Power
- AC Grid
- AC Load (Backup Power / Standalone)
- Communication

# Design For Battery Safety

## Exterior



### Safe and Powerful

Built by Panasonic Li-ion battery pack with 18650 cell. A range of different alloys were integrated into the battery to make it safer, increase its lifespan the power output.



### Floor or Wall Mounted

Install easily on the wall or floor and mounting bracket included without extra charge.



### Water-resistant and dustproof

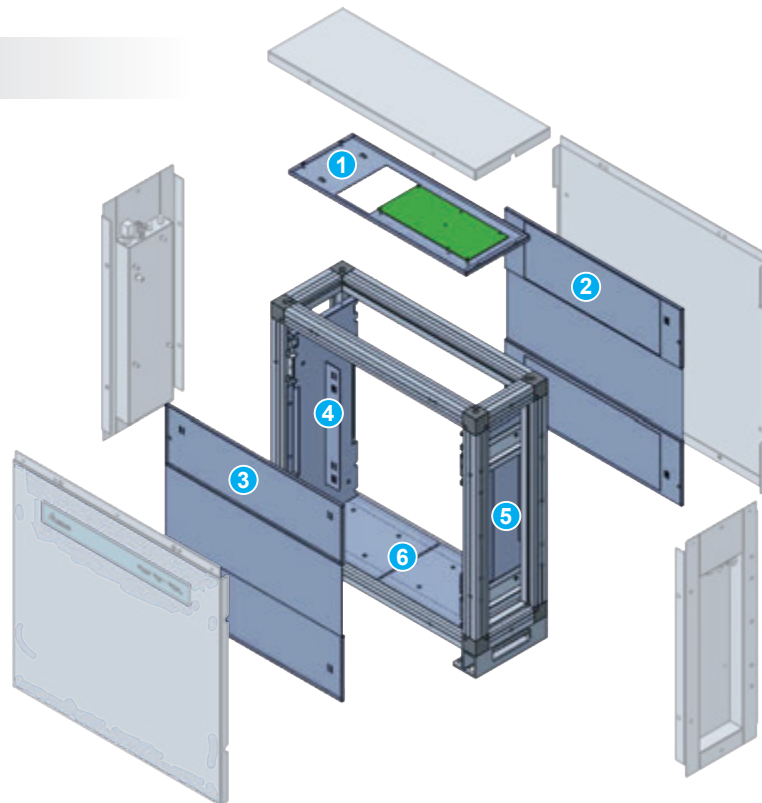
IP55 protection level allows BX 6.0 to be installed indoor and outdoor.



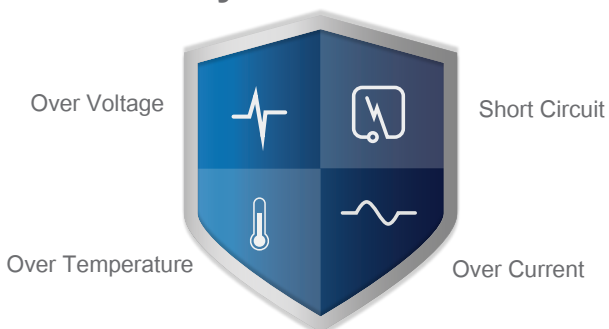
### Absolutely Quiet

Almost no noise during the BX 6.0 daily operation.

## Interior



### 4X Battery Module Protection



**1 ~ 6 :**



6 Steel plate design provides the solid protection if there is any explosion happened inside the battery. The explosion proof design of BX\_6.0 is to deliver the safest residential energy storage pack for consumer.



High-strength metal framework design promise the robust quality to survive any accidents. Delta BX\_6.0 pass the 5000KG stress test which is equal to 4 sedan pressure on the BX\_6.0 cabinet.

powered by Panasonic



## Hybrid Inverter

Model		E5
DC Input	Rated voltage	370Vdc
	Recommended PV power	7kW
	MPPT	2
	Max. input current	2×12Adc
	Operating voltage range	100Vdc ~ 550Vdc
	MPP voltage range	220Vdc ~ 450Vdc
AC Output	Rated output power	5000VA
	Rated voltage	230Vac
	THD	< 3% at rated power
Efficiency	Peak efficiency	97.2%
	European efficiency	96.5%
Information	Communication port	RS-485
	Display	20 x 4 LCD
Standalone power		3600VA
Communication		Wi-Fi(option) / RS-485
Environment		Outside
Operating temperature		-25 ~ 60°C
Relative humidity		0 ~ 100%, non-condensing
Dimensions(unit)		510 x 445 x 177 mm
Weight		27kg
Cooling		Natural cooling
Installation type		Indoor/outdoor
Enclosure rating		IP65
Certificates		IEC 62109-1/2 IEC 62040 ARN-4105

## Power Meter

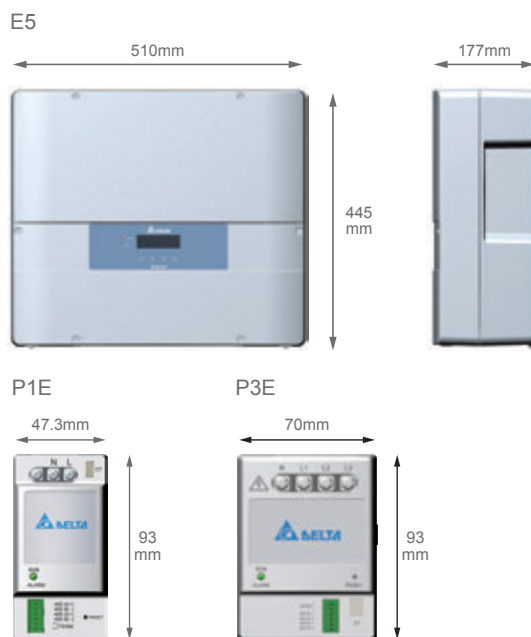
Model	PPM P1E-000	PPM P3E-000
Phase	1	3
Communication	Wi-Fi(N1) / RS-485	Wi-Fi(N1) / RS-485
Information	LED indicator	LED indicator
Rated operating voltage(L – N)	100Vac ~ 240Vac	230Vac
Operating voltage range(L – N)	85Vac ~ 264Vac	130Vac ~ 260Vac
Operating current limit	120A	120A
Rated frequency	45 ~ 65 Hz	45 ~ 65 Hz
Power consumption	Max. 2 Watt	Max. 3 Watt
Power consumption with N1	Max. 4 Watt	Max. 6 Watt
Safety standard	IEC 60950-1	
Emission	EN 55022 class B	
Immunity	EN 61000-6-2	
Operation temperature	-20°C ~ 50°C	
Storage temperature	-20°C ~ 60°C	
Relative humidity	30% ~ 85%	
Dimension	93 × 47.3 × 66.5 mm	93 × 70 × 66.5 mm
Weight	145 g without CT	200 g without CT

## Battery

Model	BX_6.0
Battery supplier	Panasonic
Nominal capacity	6kWh
Usable capacity (80% DoD)	4.8kWh
Cycle stability (80% DoD)	6000
Voltage range	85 ~ 104 VDC
Nominal charging power	2.5kW
Nominal discharging power	3kW
Max. charging current	30A
Max. discharging current	35A
Battery technology	Li-ion
Dimensions	552 x 596 x 200 mm
Weight	75kg
Enclosure rating	IP55
Installation type	Indoor/outdoor
Ambient temperature range	-10 ~ 45°C
Permitted humidity	0 ~ 90%
Certificates	UN38.3
Warranty	10 years

## Smart Monitor

Module	PPM R4
Rated operating voltage	12Vdc
Operating voltage range	10Vdc ~ 16Vdc
Power consumption	< 6 Watt (Without USB port)
Safety standard	EN 62109-2
Emission	EN 55022 class B
Immunity	EN 61000-6-2
Information	LCD Display
	Touch resistive screen
	7 inch TFT LCD, 800 x 480 pixel, 24 bit RGB
Communication	RS-485 / Wi-Fi
Operation temperature	-20°C ~ 50°C
Storage temperature	-20°C ~ 60°C
Relative humidity	30% ~ 85%
Dimension	120 × 190 × 32 mm
Weight	440 g



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# Delta Home Series

Single Phase Solar Inverter  
H3

## Product Features

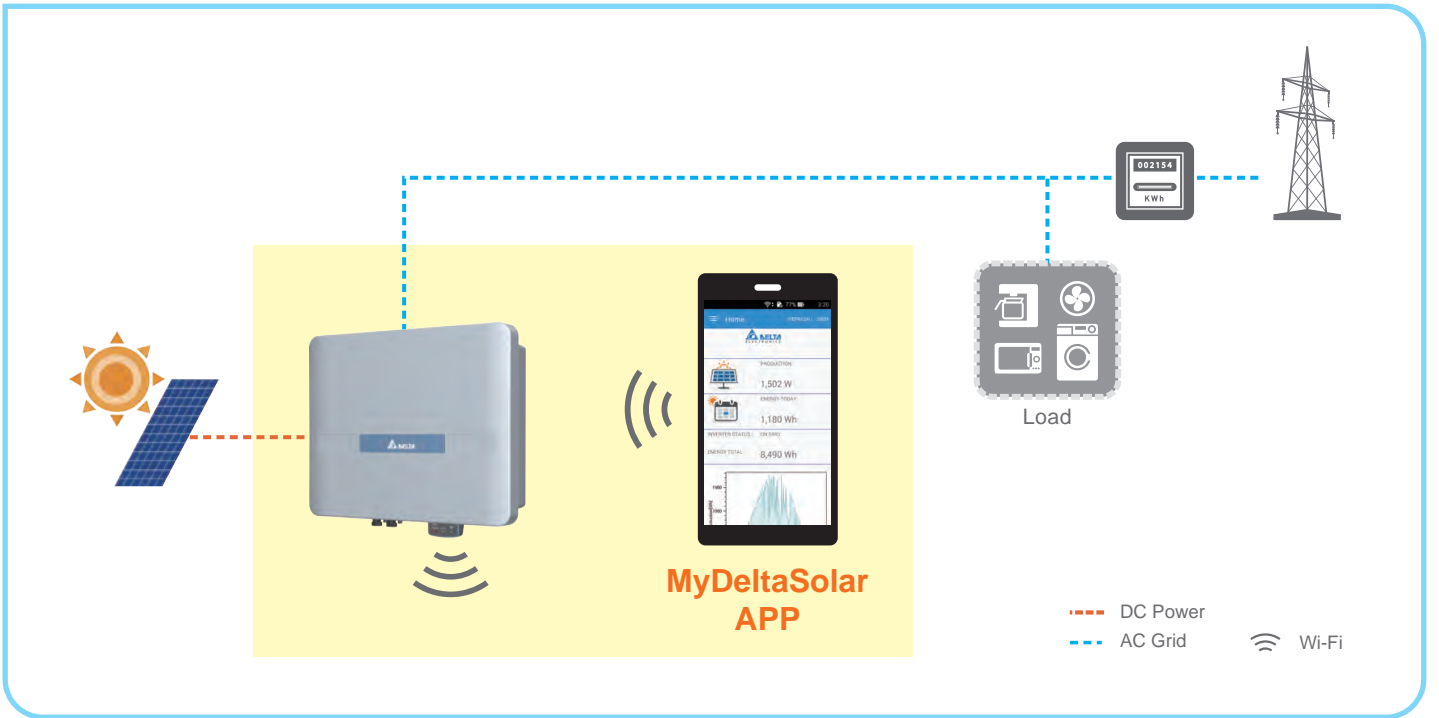
- Wide input range 30~600Vdc
- Max. efficiency up to 97.5%
- Ultra light weight
- Inbuilt Wi-Fi communication
- Commissioning via App (iOS/Android)
- MyDeltaSolar cloud online monitoring
- Low noise emission with only 20dB
- IP65 protective level

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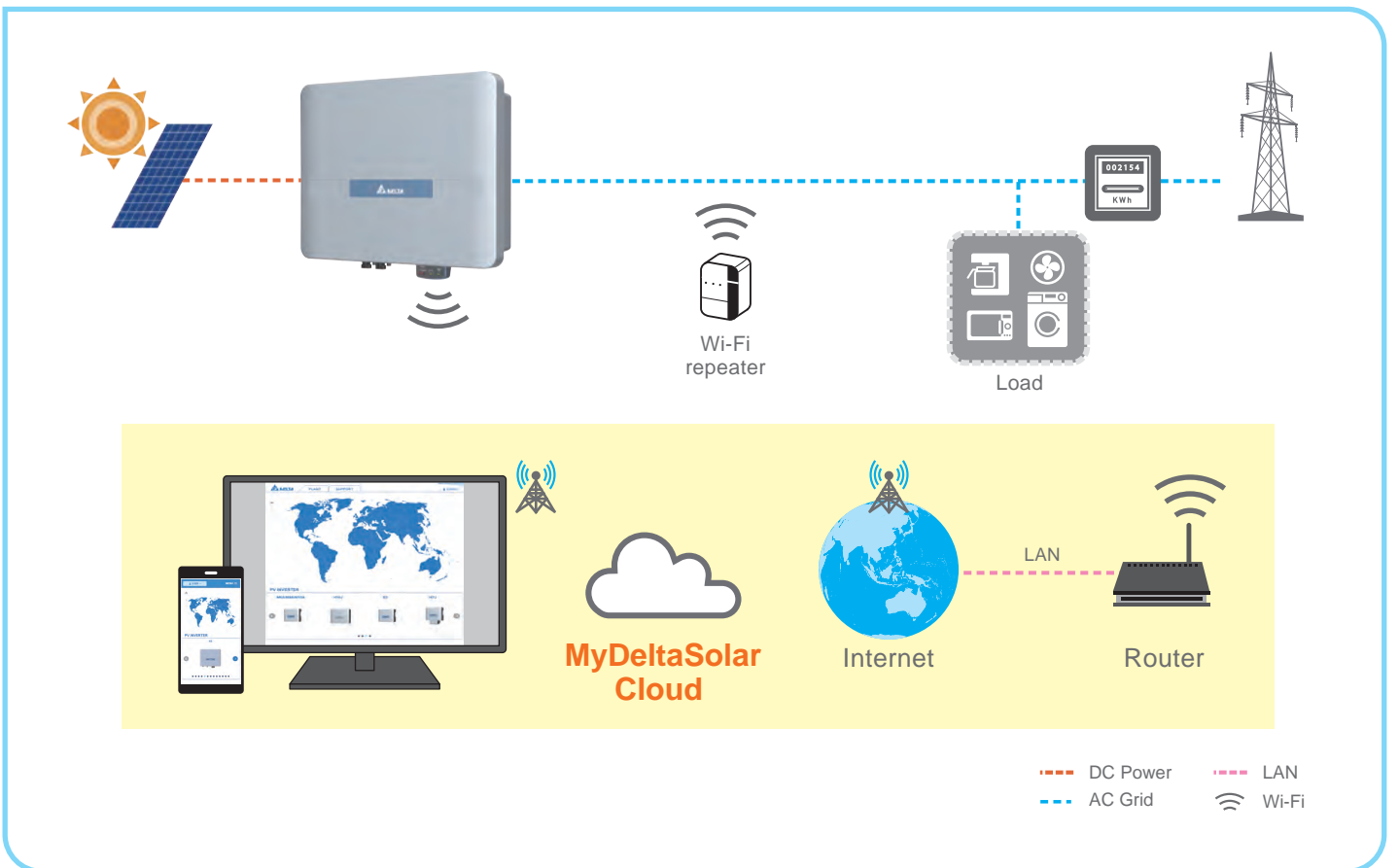


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# APP System Diagram



# Cloud System Diagram



# MyDeltaSolar WIRELESS SOLUTION

## APP

Installation & Setting via Wi-Fi.



MyDeltaSolar  
APP

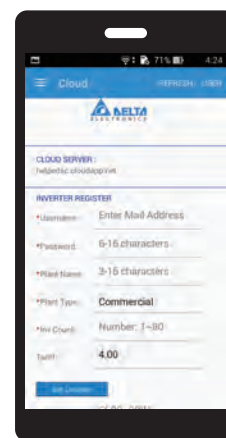


Install



Home

and



Setting

## Cloud

Monitor inverter anytime, anywhere.



LAN



Router

Internet



MyDeltaSolar  
Cloud

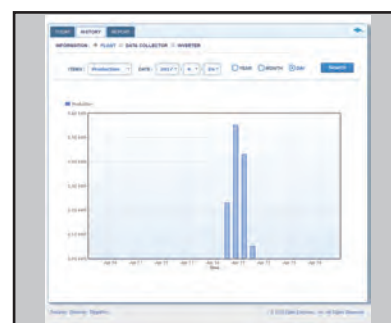
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MANAGEMENT



ENERGY



HISTORY



- MyDeltaSolar cloud offers home user an online monitoring service
- Proactive e-mail notification during inverter alarm (i.e. ground fault alarm)

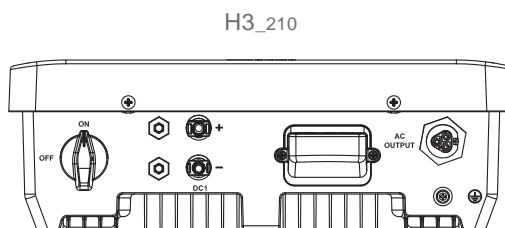


## Technical Specifications

Model	H3_210			
<b>Input (DC)</b>				
Max. input voltage	600V			
Operation voltage range	30-550V			
MPP range with Max. power	290-500V			
Start up voltage	>35V			
Rated voltage	360V			
Max. input current	11A			
MPP tracker	1			
Connection type	MC4 1 pair			
DC switch	Yes			
<b>Output (AC)</b>				
Max. output power	3000W / 3000VA			
Max. output current	14.3A			
Rated voltage	220/230V			
AC voltage range	180-280V			
Frequency range	50/60Hz (± 5Hz)			
THD	<3% at Rated Power			
Reactive power	0.8 Ind ~ 0.8 Cap			
Night time power consumption	<2W			
<b>Efficiency</b>				
Peak efficiency	97.5%			
Euro efficiency	97.0%			
<b>Information</b>				
Communication	Wi-Fi			
Indicator	LED			
Display	MyDeltaSolar APP ( iOS / Android )			
Cloud	MyDeltaSolar Cloud			
Alarm	Mail Notification			
<b>Certification</b>				
	VDE-AR-N 4105	AS4777.2:2015	EN 61000-6-2	IEC 62109-1/-2
	VDE 0126-1-1/A1	EN50438	EN 61000-6-3	G83/2
<b>General Data</b>				
Operating temp. range	-25°C ~ 60°C			
Protection level	IP65			
Noise emission, typical	20dB (A)			
Operating elevation	<2000m			
Cooling	Natural cooling			
Dimensions (W x H x D) (mm)	380 x 318 x 130			
Weight (kg)	9.2			

- All specifications are subject to change without prior notice.

## Inverter Interfaces



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The power behind competitiveness

# Delta Home Series

Single Phase Solar Inverter  
H5A

## Product Features

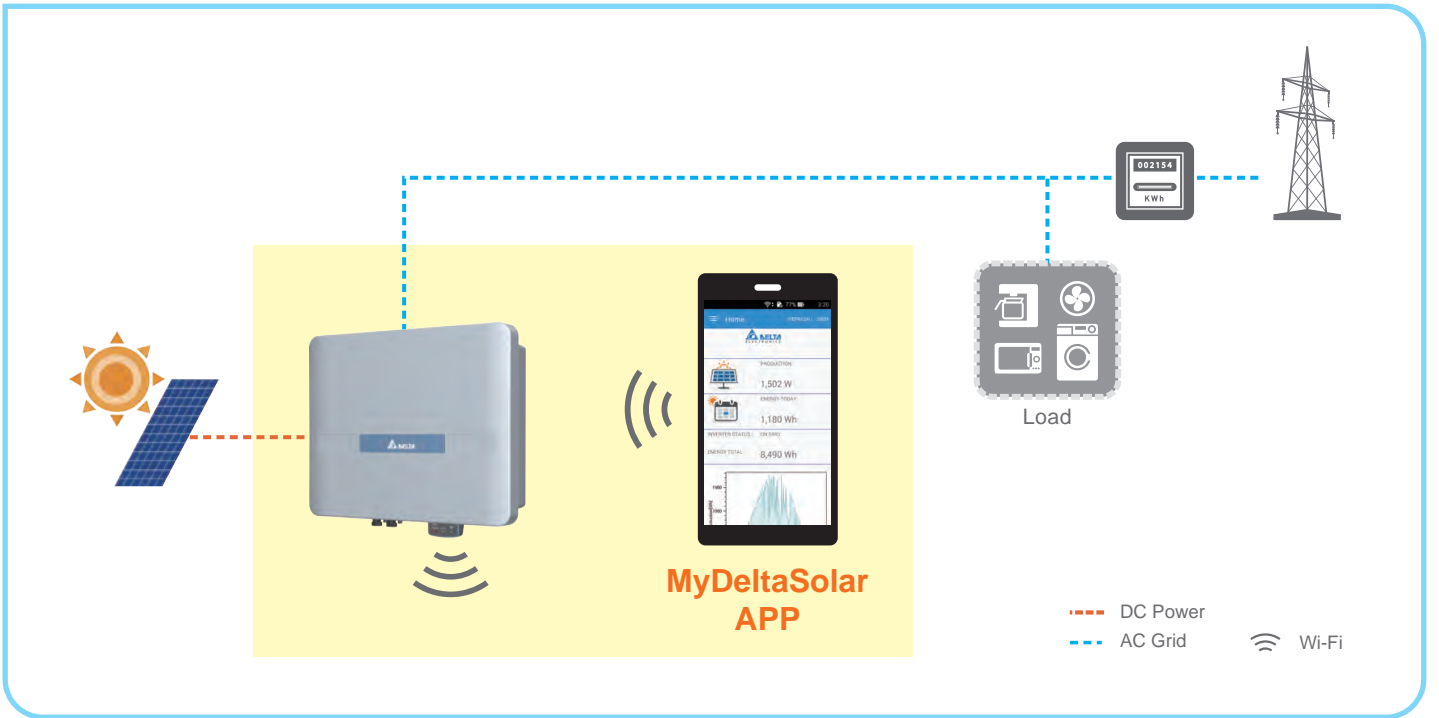
- Wide input range 30~600Vdc
- Max. efficiency up to 98.0%
- Ultra light weight
- Inbuilt Wi-Fi communication
- Commissioning via App (iOS/Android)
- MyDeltaSolar cloud online monitoring
- Low noise emission with only 20dB
- IP65 protective level

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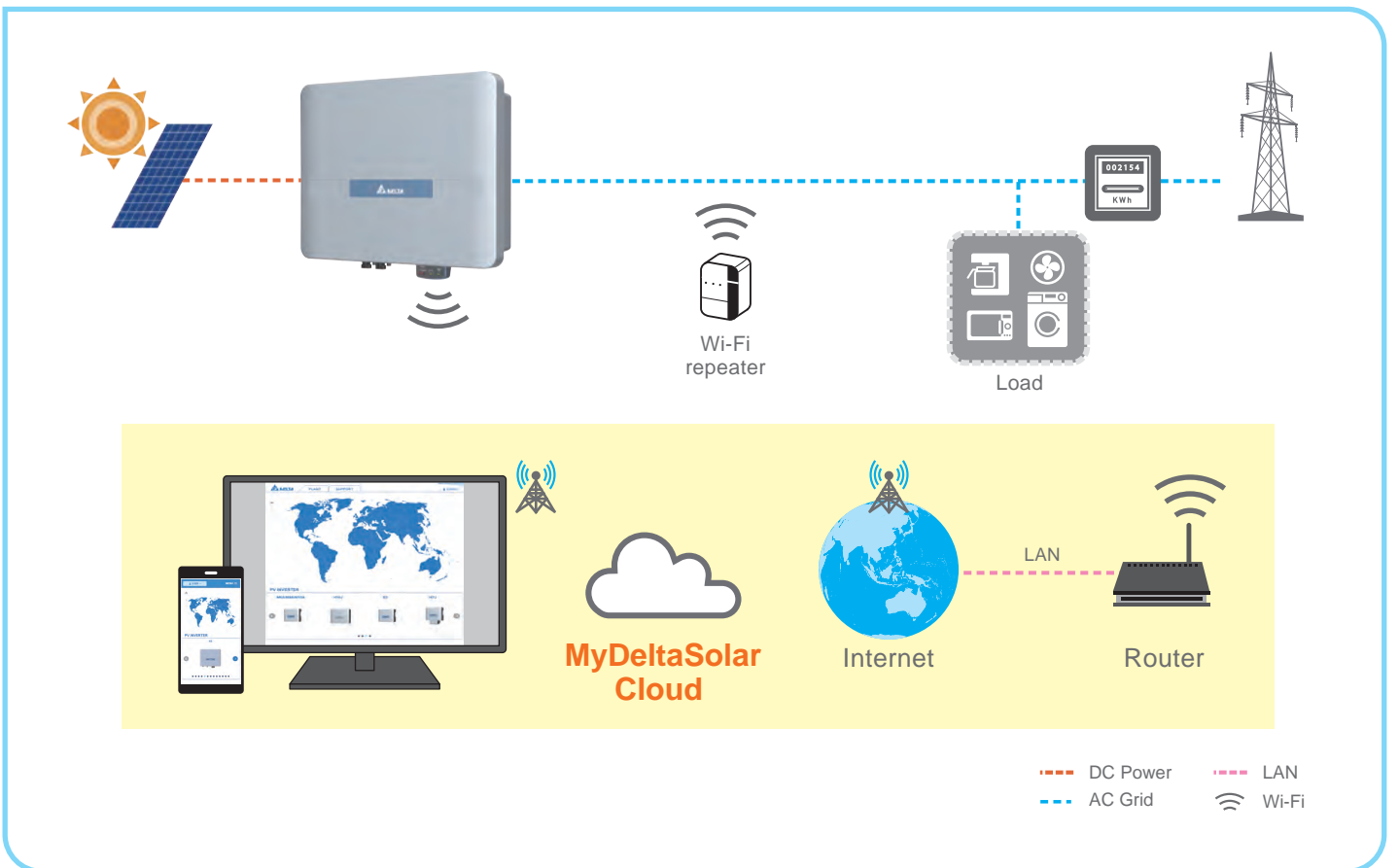


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# APP System Diagram



# Cloud System Diagram



# MyDeltaSolar WIRELESS SOLUTION

## APP

Installation & Setting via Wi-Fi.



MyDeltaSolar  
APP



Install



Home

and



Setting

## Cloud

Monitor inverter anytime, anywhere.



LAN



Internet



MyDeltaSolar  
Cloud

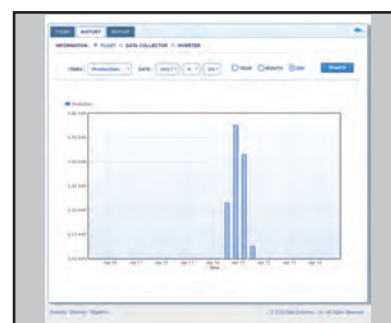
or



MANAGEMENT



ENERGY



HISTORY



- MyDeltaSolar cloud offers home user an online monitoring service
- Proactive e-mail notification during inverter alarm (i.e. ground fault alarm)

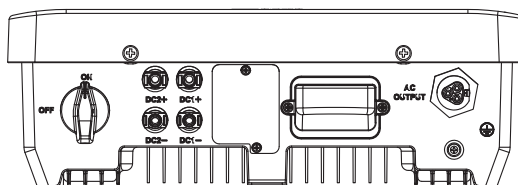
## Technical Specifications

Model	H5A_220			
<b>Input (DC)</b>				
Max. input voltage	600V			
Operation voltage range	30-550V			
MPP range with Max. power	240-500V			
Start up voltage	>35V			
Rated voltage	360V			
Max. input current	11Adc for each / 22Adc for total			
MPP tracker	2			
Connection type	MC4 2 pairs			
DC switch	Yes			
<b>Output (AC)</b>				
Max. output power	5000W / 5000VA			
Max. output current	24A			
Rated voltage	2220/230V			
AC voltage range	180-280V			
Frequency range	50/60Hz (± 5Hz)			
THD	<3% at Rated Power			
Reactive power	0.8 Ind ~ 0.8 Cap			
Night time power consumption	<2W			
<b>Efficiency</b>				
Peak efficiency	98.0%			
Euro efficiency	97.5%			
<b>Information</b>				
Communication	Wi-Fi / RS-485 (optional)			
Indicator	LED			
Display	MyDeltaSolar APP ( iOS / Android )			
Cloud	MyDeltaSolar Cloud			
Alarm	Mail Notification			
<b>Certification</b>				
	VDE-AR-N 4105	AS4777.2:2015	EN 61000-6-2	IEC 62109-1/-2
	VDE 0126-1-1/A1	EN50438	EN 61000-6-3	G83/2
<b>General Data</b>				
Operating temp. range	-25°C ~ 60°C			
Protection level	IP65			
Noise emission, typical	20dB (A)			
Operating elevation	<2000m			
Cooling	Natural cooling			
Dimensions (W x H x D) (mm)	380 x 318 x 130			
Weight (kg)	12			

- All specifications are subject to change without prior notice.

## Inverter Interfaces

H5A\_220



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The Power Behind Competitiveness

# Delta RPI-H3

Grid-Tied Solar Inverter  
RPI-H3



## Product Features

- Transformerless Inverter
- Peak Efficiency up to 97.0%
- Reactive Power Control
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in DC Switch

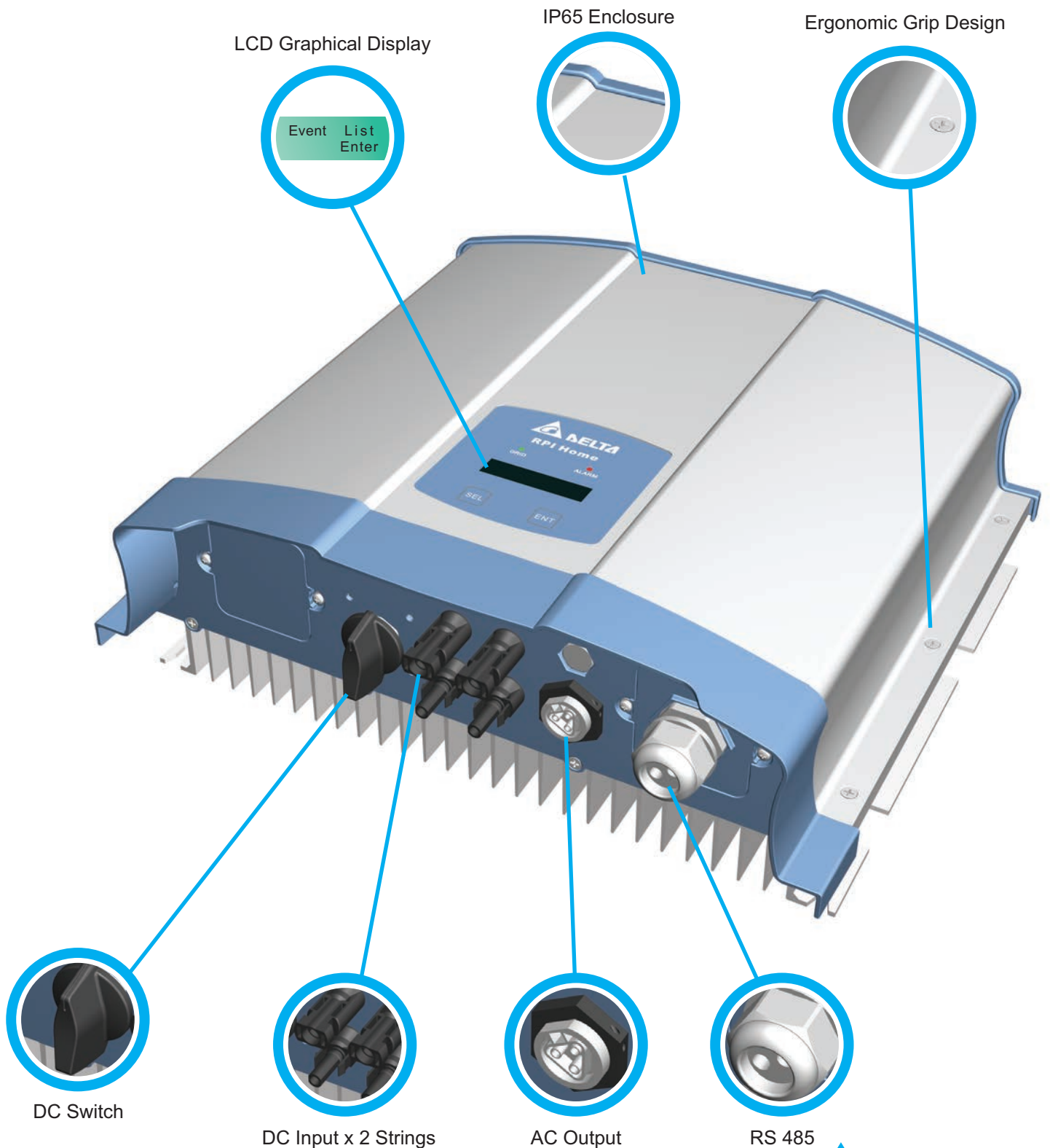
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# Delta RPI-H3

With Delta's cutting-edge technology, the home series Solar Inverters are with efficiencies as high as 97.0%. These inverters are compact in size with durable quality to ensure smooth PV system operation. IP65 enclosure provides higher level of protection and enhances its durability in a harsh outdoor environment.



# Delta RPI-Home Series

## Technical Data RPI-H3

INPUT (DC)	RPI-H3
Recommended Max. DC Power	3200W
Max. Input Voltage	550 V
DC Voltage Range	125 - 550 V
Start-up Voltage	>150 V
Start-up Power	10W
MPPT Voltage Range	125 - 550 V
MPP Voltage Range, Full Power	320 - 500 V
Nominal DC Voltage	350 V
Total Input Current	10 A
Maximum Short Circuit Current	13.9A
No. of Independent MPP Trackers	1
Input Connection Type	2 pair MC4
DC Disconnection Switch	Yes (Inbuilt)

OUTPUT (AC)	
Rated Output Power	3 kVA
Maximum Output Power	3 kVA
Rated Output Current	13 A
Max. Output Current	14.3 A
Inrush Current	30A / 1ms
Nominal AC Voltage	1 Ph, 230 V
AC Voltage Range	230 V $\pm$ 20 % (184~276)
Nominal Frequency	50 Hz
Frequency Range	45 Hz - 55 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Lagging ~ 0.8 Leading
Harmonics	<3% at Rated Power
DC Injection	<0.5% at Rated Output Current
No. of Conductors	3 Wire (L, N, PE)

EFFICIENCY	
Maximum Efficiency	97.00%
Euro Efficiency	96.20%

PROTECTION	
Input-side Disconnection Device	Yes
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current Limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	Yes, MOV

GENERAL DATA	RPI-H3
Dimension (H/W/D)	367 x 420 x 157 mm
Weight (kg)	15
Operating Temperature Range	- 20 °C to + 60 °C (Full Power - 20 °C to + 40 °C)
Relative Humidity	0~95%, Non-condensing
Operating Elevation	< 2000 m
Degree of Protection	IP65
Noise Level (Typical)	<35 dB (1m Front Panel)
Self Consumption at Night	< 1 Watt

SAFETY/STANDARDS	
Anti-islanding Protection / Grid Regulation	DIN VDE V 0124-100; VDE 4105
EMC	EN 61000; IEC 61000
Safety	IEC/EN 62109
Efficiency	IEC 61683
Environmental Testing	IEC 60068-2 (1,2,14,30) (As Per MNRE Requirement)
Ingress Protection	IEC 60529

COMMUNICATION	
Communication Interface	MODBUS RTU over RS 485 Physical Layer
Graphical Display	LCD 16 Characters x 2
Built-in Energy Data Logger	Yes

WARRANTY	
Standard Warranty	5 Years

### Notes

- 1.If PV Module is grounded (Negative / Positive Grounding), separate Isolation Transformer is required at the Grid interface of Inverter
- 2.Parallel Operation of Inverters is possible for large Power Plants
- 3.Installing SPDs for PV and AC circuit is recommended
- 4.Refer to Delta's Standard Warranty Terms and Conditions for more details

**For Any Sales / Application Engineering Support, Please Contact :**

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The Power Behind Competitiveness

# Delta RPI-H5

Grid-Tied Solar Inverter

RPI-H5



## Product Features

- Transformerless Inverter
- Peak Efficiency up to 97.5%
- Wide Voltage Range (200~1000Vdc)
- Reactive Power Control
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in DC Switch

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# Delta RPI-H5

With Delta's cutting-edge technology, the home series Solar Inverters are with efficiencies as high as 97.5%. These inverters are compact in size with durable quality to ensure smooth PV system operation. IP65 enclosure provides higher level of protection and enhances its durability in a harsh outdoor environment.





# Delta RPI-Home Series

## Technical data RPI-H5

INPUT (DC)	RPI-H5
Recommended Max. DC Power	5425W
Max. Input Voltage	1000 V
DC Voltage Range	200 - 1000 V
Start-up Voltage	>250 V
Start-up Power	15W
MPPT Voltage Range	200 - 1000 V
MPP Voltage Range, Full Power	310 - 850 V
Nominal DC Voltage	650 V
Total Input Current	17.5 A
Maximum Short Circuit Current	24.5A
No. of Independent MPP Trackers	1
Input Connection Type	2 pair MC4
DC Disconnection Switch	Yes (Inbuilt)

OUTPUT (AC)	
Rated Output Power	5 kVA
Maximum Output Power	5 kVA
Rated Output Current	21.7 A
Max. Output Current	24.5 A
Inrush Current	30A / 1ms
Nominal AC Voltage	1 Ph, 230 V
AC Voltage Range	230 V $\pm$ 20 % (184~276)
Nominal Frequency	50 Hz
Frequency Range	45 Hz - 55 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Lagging ~ 0.8 Leading
Harmonics	<3% at Rated Power
DC Injection	<0.5% at Rated Output Current
No. of Conductors	3 Wire (L, N, PE)

EFFICIENCY	
Maximum Efficiency	97.50%
Euro Efficiency	97.00%

PROTECTION	
Input-side Disconnection Device	Yes
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current Limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection- Inbuilt	Yes, MOV

GENERAL DATA	RPI-H5
Dimension (H/W/D)	482 x 470 x 167 mm
Weight (kg)	21.5
Operating Temperature Range	- 20 °C to + 60 °C (Full Power - 20 °C to + 40 °C)
Relative Humidity	0~95%, Non-condensing
Operating Elevation	< 2000 m
Degree of Protection	IP65
Noise Level (Typical)	< 40dB (1m Front Panel)
Self Consumption at Night	< 1Watt

SAFETY/STANDARDS	
Anti-islanding Protection / Grid Regulation	DIN VDE V 0124-100; VDE 4105
EMC	EN 61000; IEC 61000
Safety	IEC/EN 62109
Efficiency	IEC 61683
Environmental Testing	IEC 60068-2 (1,2,14,30) (As Per MNRE Requirement)
Ingress Protection	IEC 60529

COMMUNICATION	
Communication Interface	MODBUS RTU over RS 485 Physical Layer
Graphical Display	LCD 16 Characters x 2
Built-in Energy Data Logger	Yes

WARRANTY	
Standard Warranty	5 Years

### Notes

1. If PV Module is grounded (Negative / Positive Grounding), separate Isolation Transformer is required at the Grid interface of Inverter.
2. Parallel Operation of Inverters is possible for large Power Plants
3. Installing SPD's For PV and AC Circuit is Recommended.
4. Please Refer to our Standard Warranty Terms and Conditions For Details.

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The Power Behind Competitiveness

# Delta RPI-M6A

Grid-Tied Solar Inverter  
RPI-M6A



## Product Features

- Transformerless Inverter
- Dual MPP Trackers
- Peak Efficiency up to 98.3%
- Wide Voltage Range (200~1000Vdc)
- Reactive Power Control
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in AC/DC Switch

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# Delta RPI-M6A

With Delta's cutting-edge technology, the commercial series Solar Inverters are with efficiencies as high as 98.3%. These inverters are compact in size with durable quality to ensure smooth PV system operation. IP65 enclosure provides higher level of protection and enhances its durability in a harsh outdoor environment.



Note: Product image shown above is indicative only. The inverter has only two pairs of MC4 connector input.



# Delta RPI-Commercial Series

## Technical data RPI-M6A

INPUT (DC)	RPI-M6A
Recommended Max. DC Power	7.5 kWp
Max. Input Voltage	1000 V
DC Voltage Range	200 - 1000 V
Start-up Voltage	>250 V
Start-up Power	40W
MPPT Voltage Range	200 - 1000 V
MPP Voltage Range, Full Power	315 - 800 V
Nominal DC Voltage	600 V
Max. Input Current per MPPT	10 A
Total Input Current	20 A
Maximum Short Circuit Current	13A / 13A
No. of Independent MPP Trackers	2
Unbalanced Input (%)	33 / 67
Input Connection Type	2 pair MC4
DC Disconnection Switch	Yes (Inbuilt)

OUTPUT (AC)	
Rated Output Power	6 kVA
Maximum Output Power	6.3 kVA
Rated Output Current	8.7 A
Max. Output Current	9.7 A
Inrush Current	31A / 100µs
Nominal AC Voltage	3 Ph, 400 V
AC Voltage Range	400 V ± 20 % (320~480)
Nominal Frequency	50 Hz
Frequency Range	45 Hz - 55 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Lagging ~ 0.8 Leading
Harmonics	<3% at Rated Power
DC Injection	<0.5% at Rated Output Current
No. of Conductors (user settable)	4/5 Wire (L1, L2, L3, N, PE)

EFFICIENCY	
Maximum Efficiency	98.30%
Euro Efficiency	97.60%

PROTECTION	
Input-side Disconnection Device	Yes
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current Limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	Yes, MOV

GENERAL DATA	RPI-M6A
Dimension (H/W/D)	445 x 510 x 177 mm
Weight (kg)	25
Operating Temperature Range	- 25 °C to + 60 °C (Full Power - 20 °C to + 40 °C)
Relative Humidity	0~100%, Non-condensing
Operating Elevation	<2000 m
Degree of Protection	IP65
Noise Level (Typical)	<50dB (1m Front Panel)
Self Consumption at Night	<2 Watts

SAFETY/STANDARDS	
Anti-islanding Protection / Grid Regulation	VDE-AR-N 4105:2011 ; DIN VDE V 0124-100:2012; DIN VDE V 0126-1-1; IEC 61727; IEC 62116
EMC	EN 61000; IEC 61000
Safety	IEC 62109-2
Efficiency	IEC 61683:1999
Environmental Testing	IEC 60068-2 (1,2,14,30)
Ingress Protection	IEC 60529

COMMUNICATION	
Communication Interface	MODBUS RTU over RS 485 Physical Layer
Graphical Display	20 x 4 LCD
Built-in Energy Data Logger	Yes
Emergency Power Off (EPO)	Yes, External Switch to be Connected

WARRANTY	
Standard Warranty	5 Years

### Notes

1. If PV Module is grounded (Negative / Positive Grounding), separate Isolation Transformer is required at the Grid interface of Inverter
2. Parallel Operation of Inverters is possible for large Power Plants
3. Installing SPDs for PV and AC circuit is recommended
4. Refer to Delta's Standard Warranty Terms and Conditions for more details.

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The Power Behind Competitiveness

# Delta RPI-M10A

Grid-Tied Solar Inverter  
RPI-M10A



## Product Features

- Transformerless Inverter
- Dual MPP Trackers
- Peak Efficiency up to 98.3%
- Wide Voltage Range (200~1000Vdc)
- Reactive Power Control
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in AC/DC Switch

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# Delta RPI-M10A

With Delta's cutting-edge technology, the commercial series Solar Inverters are with efficiencies as high as 98.3%. These inverters are compact in size with durable quality to ensure smooth PV system operation. IP65 enclosure provides higher level of protection and enhances its durability in a harsh outdoor environment.



# Delta RPI-Commercial Series

## Technical data RPI-M10A

INPUT (DC)	RPI-M10A
Recommended Max. DC Power	12.5 kWp
Max. Input Voltage	1000 V
DC Voltage Range	200 - 1000 V
Start-up Voltage	>250 V
Start-up Power	40W
MPPT Voltage Range	200 - 1000 V
MPP Voltage Range, Full Power	415 - 800 V
Nominal DC Voltage	600 V
Max. Input Current per MPPT	15 A / 10 A
Total Input Current	25 A
Maximum Short Circuit Current	19.5A / 13A
No. of Independent MPP Trackers	2
Unbalanced Input (%)	60 / 40
Input Connection Type	3 pair MC4
DC Disconnection Switch	Yes (Inbuilt)

OUTPUT (AC)	
Rated Output Power	10 kVA
Maximum Output Power	10.5 kVA
Rated Output Current	14.5 A
Max. Output Current	16 A
Inrush Current	31A / 100µs
Nominal AC Voltage	3 Ph, 400 V
AC Voltage Range	400 V $\pm$ 20 % (320~480)
Nominal Frequency	50 Hz
Frequency Range	45 Hz - 55 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Lagging ~ 0.8 Leading
Harmonics	<3% at Rated Power
DC Injection	<0.5% at Rated Output Current
No. of Conductors (user settable)	4/5 Wire (L1, L2, L3, N, PE)

EFFICIENCY	
Maximum Efficiency	98.30%
Euro Efficiency	98.00%

PROTECTION	
Input-Side Disconnection Device	Yes
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current Limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	Yes, MOV

GENERAL DATA	RPI-M10A
Dimension (H/W/D)	445 x 510 x 177 mm
Weight (kg)	25
Operating Temperature Range	- 25 °C to + 60 °C (Full Power - 20 °C to + 40 °C)
Relative Humidity	0~100%, Non-condensing
Operating Elevation	< 2000 m
Degree of Protection	IP65
Noise Level (Typical)	<50 dB (1m Front Panel)
Self Consumption at Night	<2 Watts

SAFETY/STANDARDS	
Anti-islanding Protection / Grid Regulation	VDE-AR-N 4105:2011 ; DIN VDE V 0124-100:2012; DIN VDE V 0126-1-1; IEC 61727; IEC 62116
EMC	EN 61000; IEC 61000
Safety	IEC 62109-2
Efficiency	IEC 61683:1999
Environmental Testing	IEC 60068-2 (1,2,14,30)
Ingress Protection	IEC 60529

COMMUNICATION	
Communication Interface	MODBUS RTU over RS 485 Physical Layer
Graphical Display	20 x 4 LCD
Built-in Energy Data Logger	Yes
Emergency Power Off (EPO)	Yes, External Switch to be Connected

WARRANTY	
Standard Warranty	5 Years

### Notes

1. If PV Module is grounded (Negative / Positive Grounding), separate Isolation Transformer is required at the Grid interface of Inverter
2. Parallel Operation of Inverters is possible for large Power Plants
3. Installing SPDs for PV and AC circuit is recommended
4. Refer to Delta's Standard Warranty Terms and Conditions for more details.

**For Any Sales / Application Engineering Support, Please Contact :**

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The Power Behind Competitiveness

# Delta RPI-M15A

Grid-Tied Solar Inverter  
RPI-M15A



## Product Features

- Transformerless Inverter
- Dual MPP Trackers
- Peak Efficiency up to 98.3%
- Wide Voltage Range (200~1000Vdc)
- Reactive Power Control
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in DC Switch

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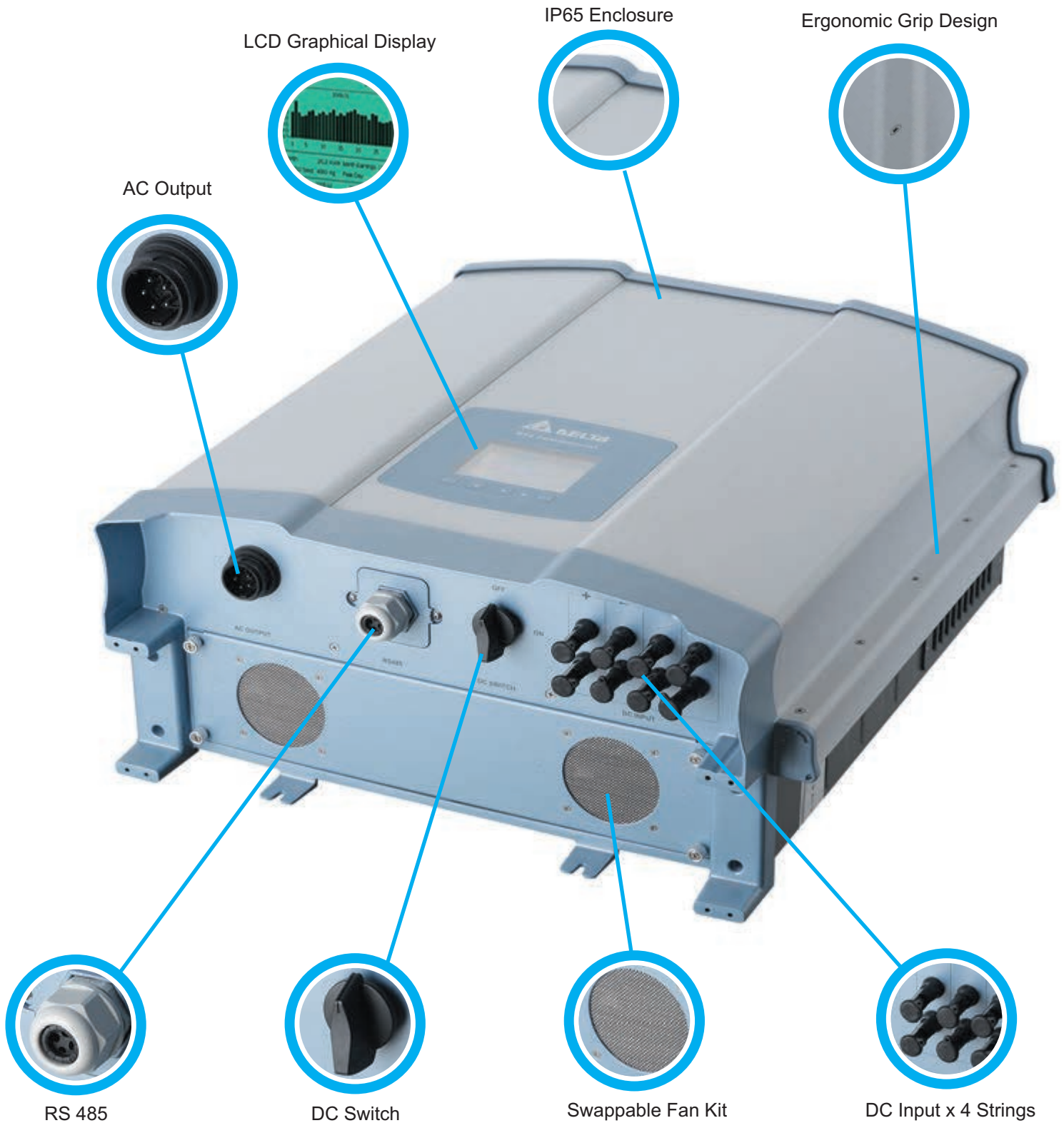


**DELTA**  
Smarter. Greener. Together.



# Delta RPI-M15A

With Delta's cutting-edge technology, the commercial series Solar Inverters are with efficiencies as high as 98.3%. These inverters are compact in size with durable quality to ensure smooth PV system operation. IP65 enclosure provides higher level of protection and enhances its durability in a harsh outdoor environment.



# Delta RPI-Commercial Series

## Technical data RPI-M15A

INPUT (DC)	RPI-M15A
Recommended Max. DC Power	19 kWp
Max. Input Voltage	1000 V
DC Voltage Range	200 - 1000 V
Start-up Voltage	>250 V
Start-up Power	40W
MPPT Voltage Range	200 - 1000 V
MPP Voltage Range, Full Power	355 - 820 V
Nominal DC voltage	635 V
Max. input current per MPP	22 A
Total input current	44 A
Maximum Short Circuit Current	24A / 24A
No. of independent MPP	2
Unbalanced input	33 / 67
Input connection type	4 pair MC4
DC Disconnection Switch	Yes (Inbuilt)

OUTPUT (AC)	
Rated Output Power	15 kVA
Maximum Output Power	15.75 kVA
Rated Output Current	22 A
Max. Output Current	24 A
Inrush Current	150A / 100 $\mu$ s
Nominal AC Voltage	3 Ph, 400 V
AC Voltage Range	400 V $\pm$ 20 % (320~480)
Nominal Frequency	50 Hz
Frequency Range	45 Hz - 55 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Lagging ~ 0.8 Leading
Harmonics	<3% at Rated Power
DC Injection	<0.5% at Rated Output Current
No. of Conductors (user settable)	4/5 Wire (L1, L2, L3, N, PE)

EFFICIENCY	
Maximum Efficiency	98.30%
Euro Efficiency	97.90%

PROTECTION	
Input-side Disconnection Device	Yes
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current Limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	MOV

GENERAL DATA	RPI-M15A
Dimension (H/W/D)	625 x 612 x 278 mm
Weight (kg)	43
Operating Temperature Range	- 25 °C to + 60 °C (Full Power - 20 °C to + 40 °C)
Relative Humidity	0~100%, Non-condensing
Operating Elevation	< 2000 m
Degree of Protection	IP65
Noise Level (Typical)	<55 dB (1m Front Panel)
Self Consumption at Night	<2 Watts

SAFETY/STANDARDS	
Anti-islanding Protection / Grid Regulation	DIN VDE V 0124-100; DIN VDE V 0126-1-1; VDE 4105; IEC 61727; IEC 62116
EMC	EN 61000; IEC 61000
Safety	IEC/EN 62109-2:2011
Efficiency	IEC 61683 :1999; EN 50530 (As Per MNRE and SECI Requirement)
Environmental Testing	IEC 60068-2 (1,2,14,30) & (6,21,27,75,78)
Ingress Protection	EN 60529:1991+A1:2000; IEC 60529:1989/A1:1999

COMMUNICATION	
Communication Port	MODBUS RTU over RS 485 Physical Layer
Display	5" Graphical LCD
Built-in Energy Data Logger	Yes
Emergency Power Off (EPO)	Yes, External Switch to be Connected
Dry Contact Relay (2 Nos.)	Yes

WARRANTY	
Standard Warranty Years	5

### Notes

1. If PV Module is grounded (Negative / Positive Grounding), separate Isolation Transformer is required at the Grid interface of Inverter
2. Parallel Operation of Inverters is possible for large Power Plants
3. Installing SPDs for PV and AC circuit is recommended
4. Refer to Delta's Standard Warranty Terms and Conditions for more details.

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The Power Behind Competitiveness

# Delta RPI-M20A

Grid-Tied Solar Inverter  
RPI-M20A



## Product Features

- Transformerless Inverter
- Dual MPP Trackers
- Peak Efficiency up to 98.4%
- Wide Voltage Range (200~1000Vdc)
- Reactive Power Control
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in DC Switch

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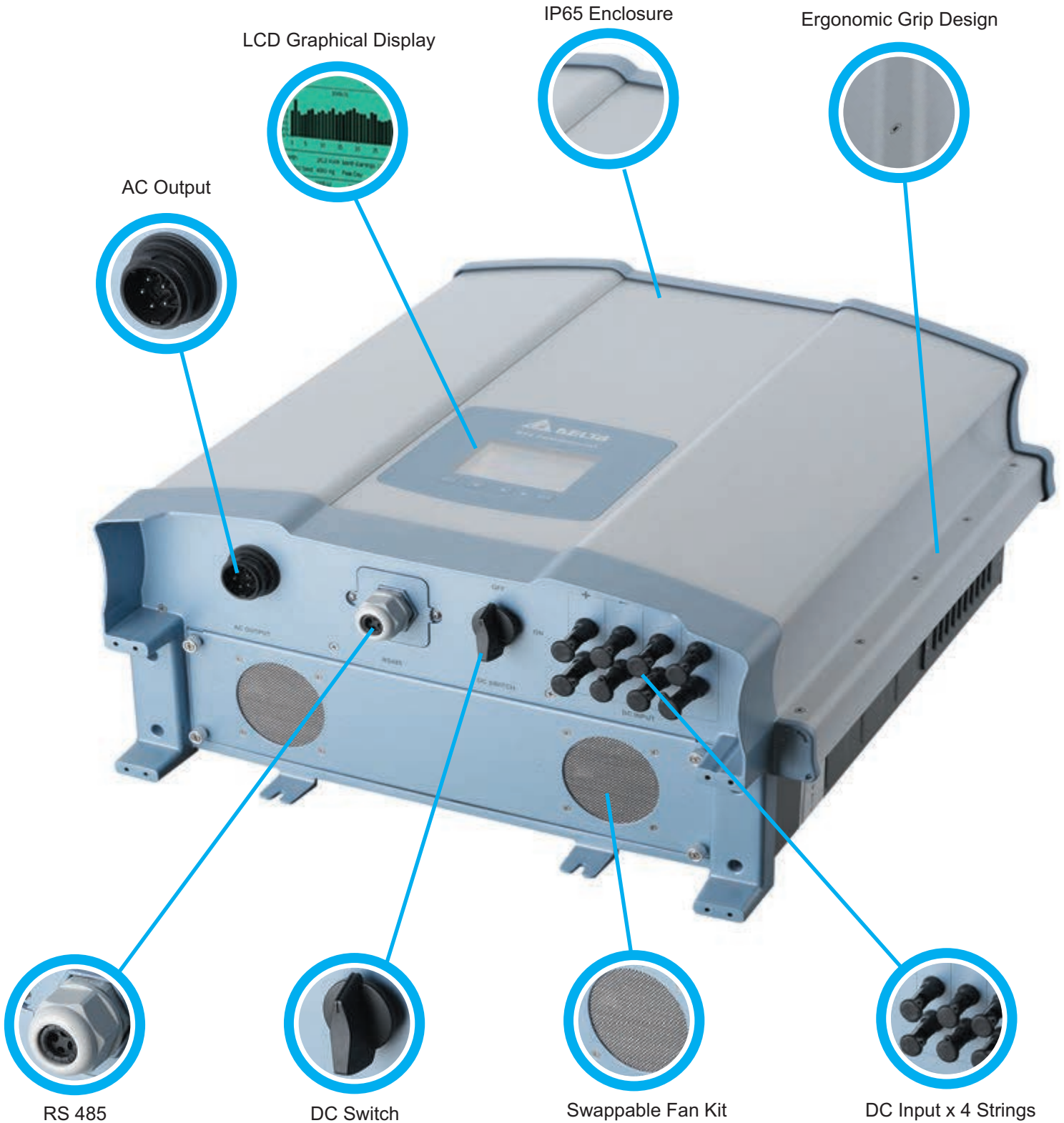


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# Delta RPI-M20A

With Delta's cutting-edge technology, the commercial series Solar Inverters are with efficiencies as high as 98.4%. These inverters are compact in size with durable quality to ensure smooth PV system operation. IP65 enclosure provides higher level of protection and enhances its durability in a harsh outdoor environment.



# Delta RPI-Commercial Series

## Technical data RPI-M20A

INPUT (DC)	RPI-M20A
Recommended Max. DC Power	25 kWp
Max. Input Voltage	1000 V
DC Voltage Range	200 - 1000 V
Start-up Voltage	>250 V
Start-up Power	40W
MPPT Voltage Range	200 - 1000 V
MPP Voltage Range, Full Power	470 - 820 V
Nominal DC Voltage	635 V
Max. Input Current per MPPT	22 A
Total Input Current	44 A
Maximum Short Circuit Current	24A / 24A
No. of Independent MPP Trackers	2
Unbalanced Input (%)	33 / 67
Input Connection Type	4 pair MC4
DC Disconnection Switch	Yes (Inbuilt)

OUTPUT (AC)	
Rated Output Power	20 kVA
Maximum Output Power	21 kVA
Rated Output Current	29 A
Max. Output Current	32 A
Inrush Current	150A / 100 $\mu$ s
Nominal AC Voltage	3 Ph, 400 V
AC Voltage Range	400 V $\pm$ 20 % (320~480)
Nominal Frequency	50 Hz
Frequency Range	45 Hz - 55 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Lagging ~ 0.8 Leading
Harmonics	<3% at Rated Power
DC Injection	<0.5% at Rated Output Current
No. of Conductors (user settable)	4/5 Wire (L1, L2, L3, N, PE)

EFFICIENCY	
Maximum Efficiency	98.40%
Euro Efficiency	98.10%

PROTECTION	
Input-side Disconnection Device	Yes
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current Limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	Yes, MOV

GENERAL DATA	RPI-M20A
Dimension (H/W/D)	625 x 612 x 278 mm
Weight (kg)	43
Operating Temperature Range	- 25 °C to + 60 °C (Full Power - 20 °C to + 40 °C)
Relative Humidity	0~100%, Non-condensing
Operating Elevation	< 2000 m
Degree of Protection	IP65
Noise Level (Typical)	<55 dB (1m Front Panel)
Self Consumption at Night	< 2 Watts

SAFETY/STANDARDS	
Anti-islanding Protection / Grid Regulation	DIN VDE V 0124-100; DIN VDE V 0126-1-1; VDE 4105; IEC 61727; IEC 62116
EMC	EN 61000; IEC 61000
Safety	IEC/EN 62109
Efficiency	IEC 61683:1999; EN 50530 (As Per MNRE and SECI Requirement)
Environmental Testing	IEC 60068-2 (1,2,14,30) & (6,21,27,75,78)
Ingress Protection	EN 60529:1991+A1:2000; IEC 60529:1989/A1:1999

COMMUNICATION	
Communication Interface	MODBUS RTU over RS 485 Physical Layer
Graphical Display	5" Graphical LCD
Built-in Energy Data Logger	Yes
Emergency Power Off (EPO)	Yes, External Switch to be Connected

WARRANTY	
Standard Warranty	5 Years

### Notes

1. If PV Module is grounded (Negative / Positive Grounding), separate Isolation Transformer is required at the Grid interface of Inverter
2. Parallel Operation of Inverters is possible for large Power Plants
3. Installing SPDs for PV and AC circuit is recommended
4. Refer to Delta's Standard Warranty Terms and Conditions for more details

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The Power Behind Competitiveness

# Delta RPI-M30A

Grid-Tied Solar Inverter  
RPI-M30A



## Product Features

- Transformerless Inverter
- Dual MPP Trackers
- Peak Efficiency up to 98.5%
- Wide Voltage Range (200~1000Vdc)
- Reactive Power Control
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in AC/DC Switch

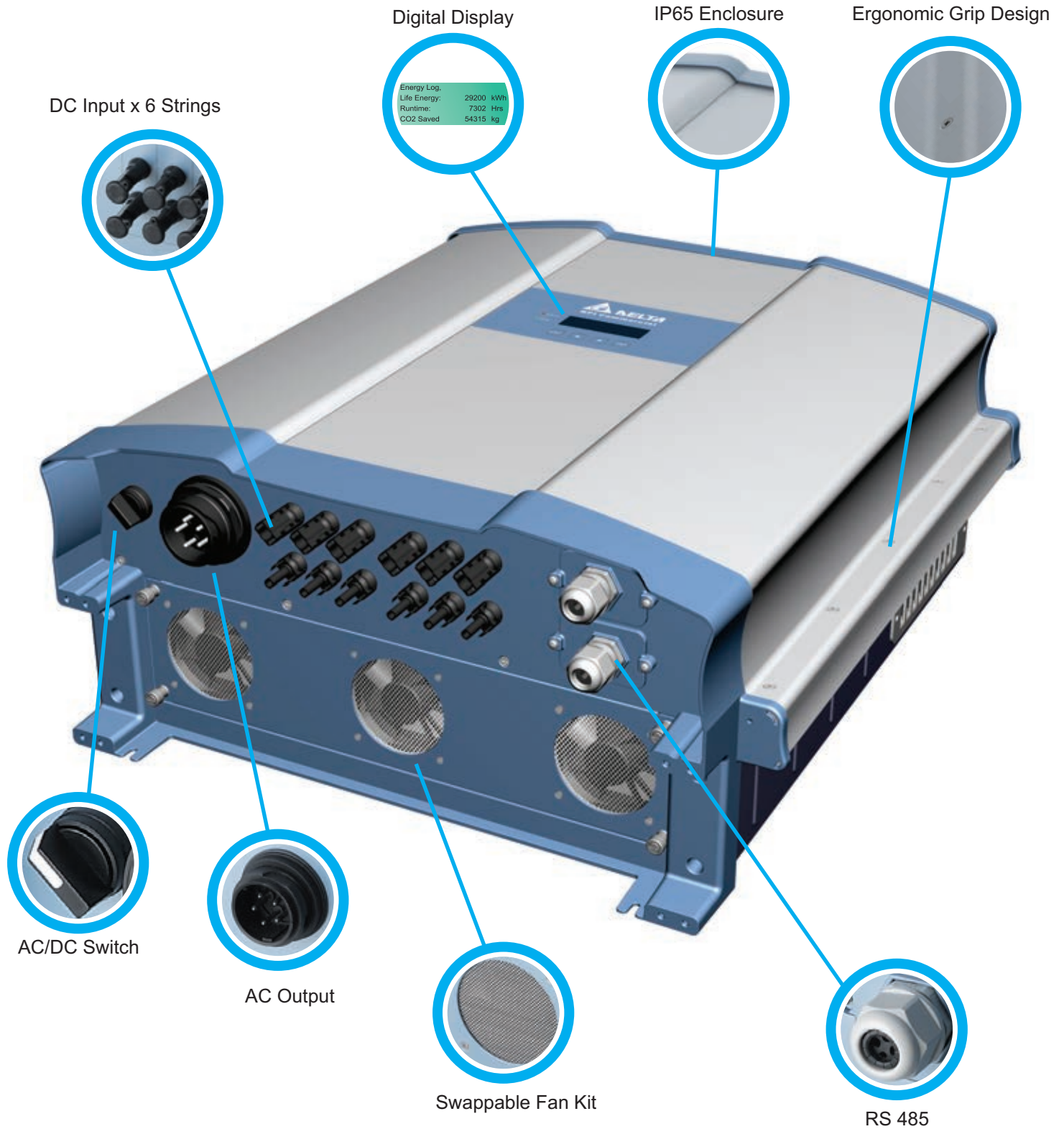
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**DELTA**  
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# Delta RPI-M30A

With Delta's cutting-edge technology, the commercial series Solar Inverters are with efficiencies as high as 98.5%. These inverters are compact in size with durable quality to ensure smooth PV system operation. IP65 enclosure provides higher level of protection and enhances its durability in a harsh outdoor environment.



# Delta RPI-Commercial Series

## Technical data RPI-M30A

INPUT (DC)	RPI-M30A
Recommended Max. DC Power	37.5 kWp
Max. Input Voltage	1000 V
DC Voltage Range	200 - 1000 V
Start-up Voltage	>250 V
Start-up Power	40W
MPPT Voltage Range	200 - 1000 V
MPP Voltage Range, Full Power	520 - 800 V
Nominal DC Voltage	600 V
Max. Input Current per MPPT	30 A
Total Input Current	60 A
Maximum Short Circuit Current	36A / 36A
No. of Independent MPP Trackers	2
Unbalanced Input (%)	33 / 67
Input Connection Type	6 pair MC4
DC Disconnection Switch	Yes (Inbuilt)

OUTPUT (AC)	
Rated Output Power	30 kVA
Maximum Output Power	33 kVA
Rated Output Current	45.5 A
Max. Output Current	50 A
Inrush Current	150A / 100 $\mu$ s
Nominal AC Voltage	3 Ph, 415 V
AC Voltage Range	320-480 V
Nominal Frequency	50 Hz
Frequency Range	45 Hz - 55 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Lagging ~ 0.8 Leading
Harmonics	<3% at Rated Power
DC Injection	<0.5% at Rated Output Current
No. of Conductors (user settable)	4/5 Wire (L1, L2, L3, N, PE)

EFFICIENCY	
Maximum Efficiency	98.50%
Euro Efficiency	98.20%

PROTECTION	
Input-side Disconnection Device	Yes
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current Limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	Yes, MOV

GENERAL DATA	RPI-M30A
Dimension (H/W/D)	625 x 612 x 278 mm
Weight (kg)	48.5
Operating Temperature Range	- 25 °C to + 60 °C (Full Power - 20 °C to + 50 °C)
Relative Humidity	0~100%, Non-condensing
Operating Elevation	< 2000 m
Degree of Protection	IP65
Noise Level (Typical)	<65 dB (1m Front Panel)
Self Consumption at Night	< 2 Watts

SAFETY/STANDARDS	
Anti-islanding Protection / Grid Regulation	VDE-AR-N 4105; VDE0126-1-1; IEC 62116; IEC 61727
EMC	EN 61000; IEC 61000
Safety	IEC/EN 62109-2:2011
Efficiency	IEC 61683:1999; EN 50530 (As Per MNRE and SECI Requirement)
Environmental Testing	IEC 60068-2 (1,2,14,30) & (6,21,27,75,78)
Ingress Protection	IEC 60529 Edition 2.1 2001-02

COMMUNICATION	
Communication Interface	MODBUS RTU over RS 485 Physical Layer
Graphical Display	20 x 4 LCD
Built-in Energy Data Logger	Yes
Emergency Power Off (EPO)	Yes, External Switch to be Connected

WARRANTY	
Standard Warranty	5 Years

### Notes

1. If PV Module is grounded (Negative / Positive Grounding), separate Isolation Transformer is required at the Grid interface of Inverter
2. Parallel Operation of Inverters is possible for large Power Plants
3. Installing SPDs for PV and AC circuit is recommended
4. Refer to Delta's Standard Warranty Terms and Conditions for more details

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The Power Behind Competitiveness

# Delta RPI-M50A

Grid-Tied Solar Inverter  
RPI-M50A



## Product Features

- Transformerless Inverter
- Dual MPP Trackers
- Peak Efficiency up to 98.6%
- Connects up to 12 Strings
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in AC/DC Switch

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 **DELTA**  
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# Delta RPI-M50A

The smallest & lightest 50 kW string inverter in the world.

Delta's latest revolutionary design "RPI-M50A" transformerless PV inverter is the lightest, smallest, and first wall mount-able 50KW string inverter in the world. With such compact size and light weight, RPI-M50A offers more design flexibility for all sizes of PV plants. IP65 enclosure provides higher level of protection and enhances its durability in a harsh outdoor environment.



# Design Features

## Thoughtful Grip Design

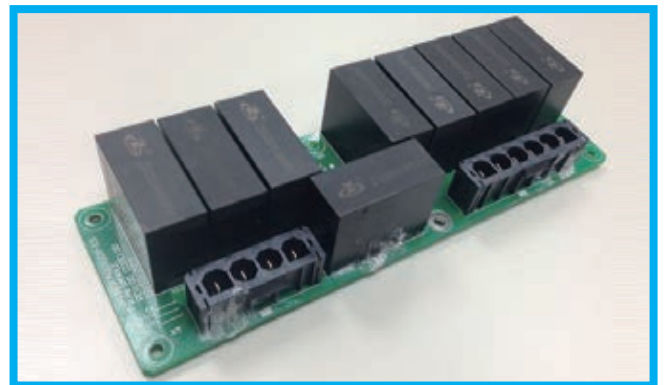
Ergonomic grip design gives more convenience while moving the inverter during installation. With special handle protection design, RPI-M50A can be easily placed down on the flat ground vertically without damaging various connectors at the bottom.



(Ergonomic Grip Design)

## Built-in SPD & String Fuses

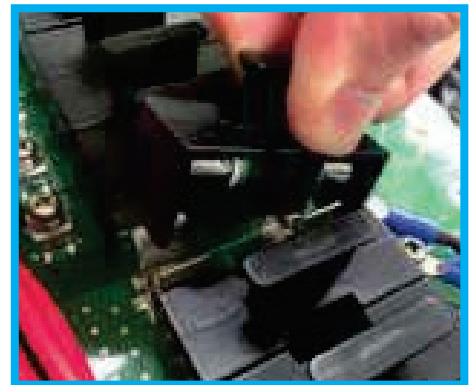
The RPI-M50A comes with built in PV fuse on both the positive and negative strings for all twelve inputs. Also the inverter has Type-2 SPD's (Surge Protection Device) for both the DC (One for each MPPT) and AC inputs. Both the PV fuse and SPD's can be replaced. This can bring down the overall PV system costing.



(Surge Protection Devices)

## Outstanding Performance

RPI-M50A comes with a peak efficiency of 98.6 %, guaranteeing better yields and returns on capital cost. The dual MPPT trackers ensure no compromise over shading losses and can accommodate PV arrays with different orientations.



Finger-Safe Fuse Holder

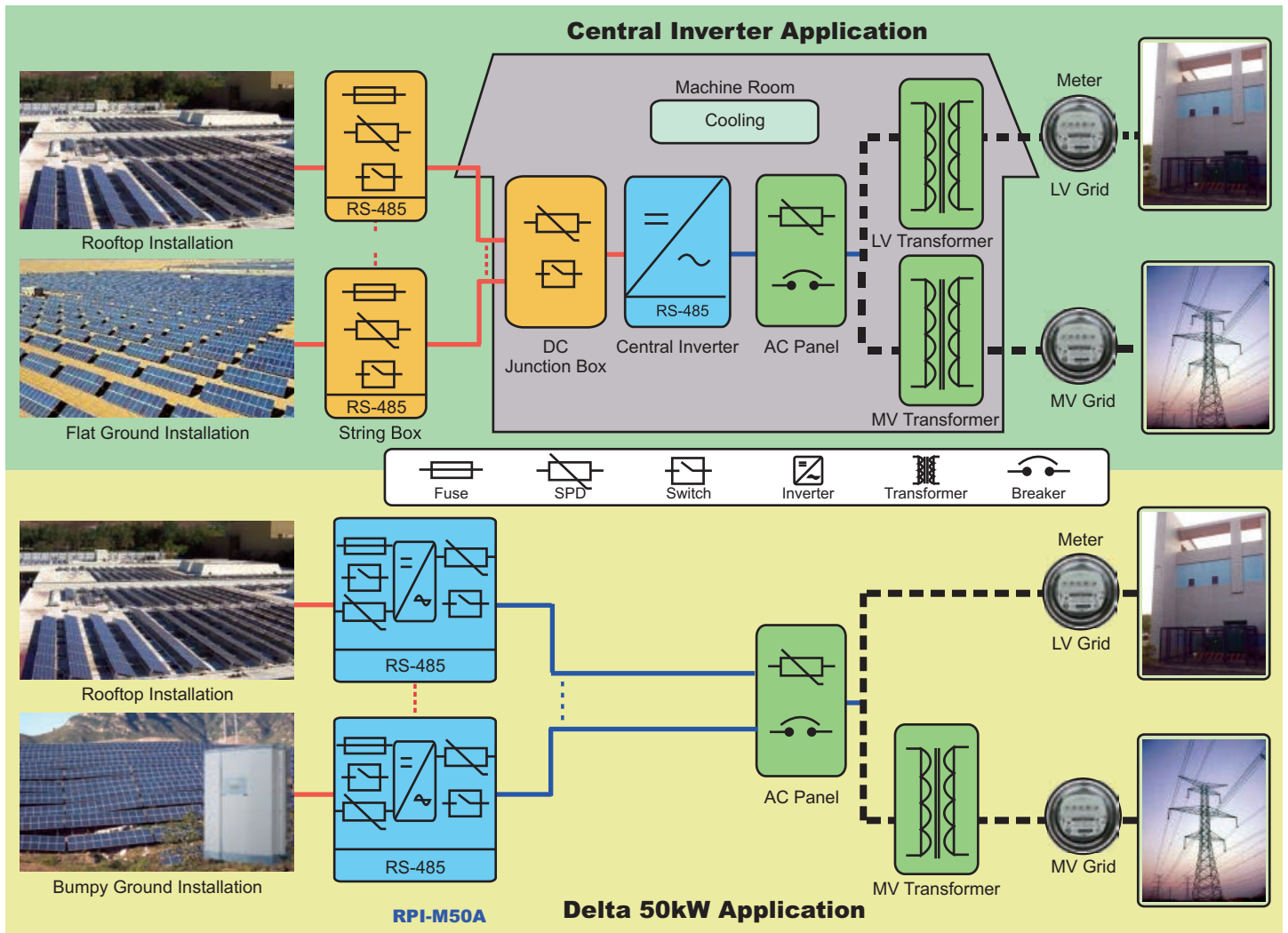
## Protection Features

### AC / DC Safety Switch

Integrated AC/DC switch makes maintenance and trouble shooting easy.



# PV System Comparison



## Savings with RPI-M50A

### Saving on System Cost :

Holistic design with built-in AC/DC switch, PV fuse and SPD's.

### Saving on Space Cost :

Thanks to the IP65 rating of the RPI-M50A, it can be mounted outdoors thereby reducing costs associated with control rooms for central inverters.

### Saving on DC Cable Cost :

The RPI-M50A can be mounted close to the PV panels which brings down the associated DC cable costs and DC cable losses which improves overall system efficiency.

### Dual MPPTs :

Two independent trackers ensure maximum yields even during partial shading of a string. This also helps in accommodating different string orientations within a system.

# Delta RPI-Commercial Series

## Technical data RPI-M50A

INPUT (DC)	RPI-M50A
Recommended Max. DC Power	63kWp
Max. Input Voltage	1000 V
DC Voltage Range	200 - 1000 V
Start-up Voltage	>250 V
Start-up Power	40W
MPPT Voltage Range	200 - 1000 V
MPP Voltage Range, Full Power	520 - 800 V
Nominal DC Voltage	600 V
Max. Input Current per MPPT	50 A
Total Input Current	100 A
Maximum Short Circuit Current	60A / 60A
No. of Independent MPP Trackers	2
Unbalanced Input (%)	33 / 67
Input Connection Type	12 pair MC4
DC Disconnection Switch	Yes (Inbuilt)

OUTPUT (AC)	
Rated Output Power	50 kVA
Maximum Output Power	55 kVA
Rated Output Current	76 A
Max. Output Current	80 A
Inrush Current	200A / 100µs
Nominal AC Voltage	3 Ph, 415 V
AC Voltage Range	320~480 V
Nominal Frequency	50 Hz
Frequency Range	45 Hz - 55 Hz
Power Factor at Rated Power	Unity
Reactive Power (Adjustable)	0.8 Lagging ~ 0.8 Leading
Harmonics	<3% at Rated Power
DC Injection	<0.5% at Rated Output Current
No. of Conductors (user settable)	4/5 Wire (L1, L2, L3, N, PE)

EFFICIENCY	
Maximum Efficiency	98.60%
Euro Efficiency	98.40%

PROTECTION	
Input-side Disconnection Device	Yes
Ground fault monitoring / Grid monitoring	Yes
DC reverse polarity protection	Yes
DC Over Voltage / Current Limitation Protection	Yes
DC Short Circuit Protection	Yes, PV Fuse - 1000V, 15A
AC Short Circuit Protection	Yes
AC Over Voltage / Current Limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	Yes, SPD - Type 2

GENERAL DATA	RPI-M50A
Dimension (H/W/D)	740 x 612 x 278 mm
Weight (kg)	74kg
Operating Temperature Range	-25°C ~ +60°C (Full Power -20°C ~ +50°C)
Relative Humidity	0~100%, Non-condensing
Operating Elevation	< 2000 m
Degree of Protection	IP65
Noise Level (Typical)	<65 dB (1m Front Panel)
Self Consumption at Night	< 2 Watts

SAFETY/STANDARDS	
Anti-islanding Protection / Grid Regulation	VDE-AR-N 4105; VDE 0126-1-1; VDE V 0124; IEC 61727; IEC 62116
EMC	EN 61000-6-2; EN 61000-6-4
Safety	IEC 62109-1/-2
Efficiency	IEC 61683:1999; EN 50530 (As Per MNRE and SECI Requirement)
Environmental Testing	IEC 60068-2 (1,2,14,30) & (6,21,27,75,78)
Ingress Protection	IEC 60529

COMMUNICATION	
Communication Interface	MODBUS RTU over RS 485 Physical Layer
Display	20 x 4 LCD
Built-in Energy Data Logger	Yes
Emergency Power Off (EPO)	Yes, External Switch to be Connected

WARRANTY	
Standard Warranty	5 Years
Dry Contact Relay (2 Nos.)	Yes

### Notes

1. If PV Module is grounded (Negative / Positive Grounding), separate Isolation Transformer is required at the Grid interface of Inverter
2. Parallel Operation of Inverters is possible for large Power Plants
3. For Cos phi = 1 (VA=W); 55 kVa is Possible with: DC Input Voltage 600V; Symmetrical Loading; Ambient Temperature <34° C
4. Refer to Delta's Standard Warranty Terms and Conditions for more details.

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The Power Behind Competitiveness

# Delta M88H

Transformerless Solar Inverter  
Grid-Tied, 3-Phase



## Product Features

- Transformerless Inverter
- Dual MPP Trackers
- Peak Efficiency up to 98.8%
- Connects up to 18 Strings
- Ergonomic Grip Design
- Ultra Compact Size
- Built-in Energy-logger
- IP65 Protection Level
- Built-in DC Switch
- Built-in PID off-set function

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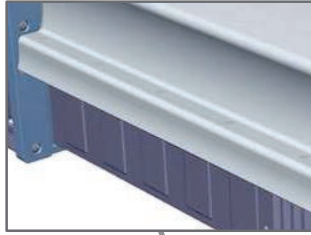
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# Delta M88H

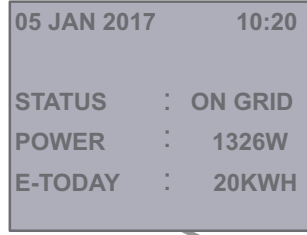
IP65



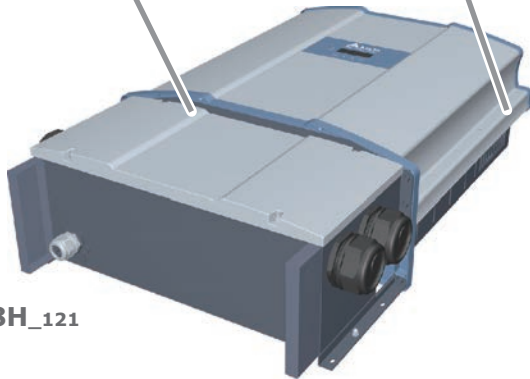
Ergonomic Grip Design



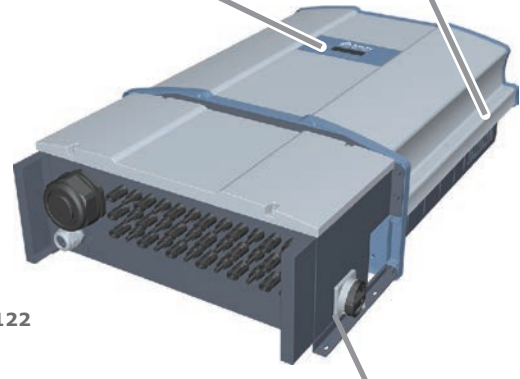
Digital Display



Swappable Fan Kit

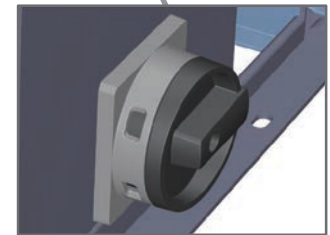
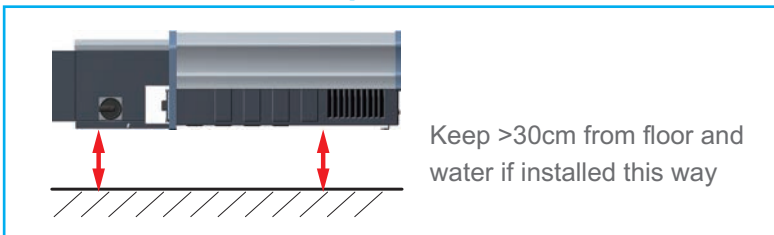


M88H\_121



M88H\_122

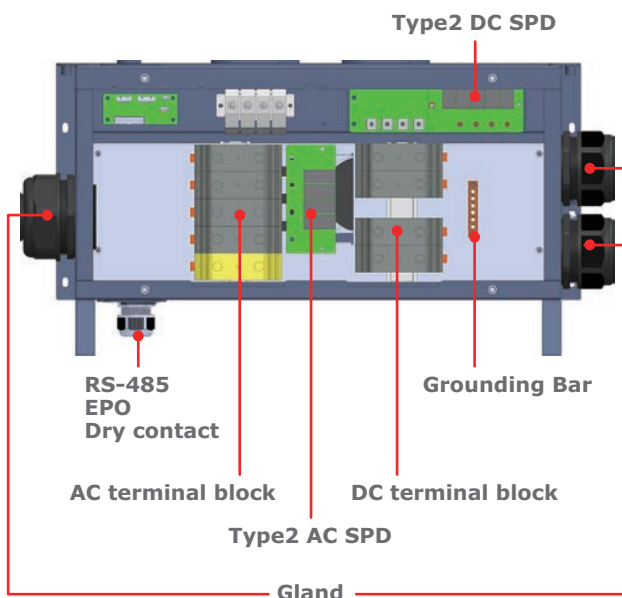
Landscape Installation



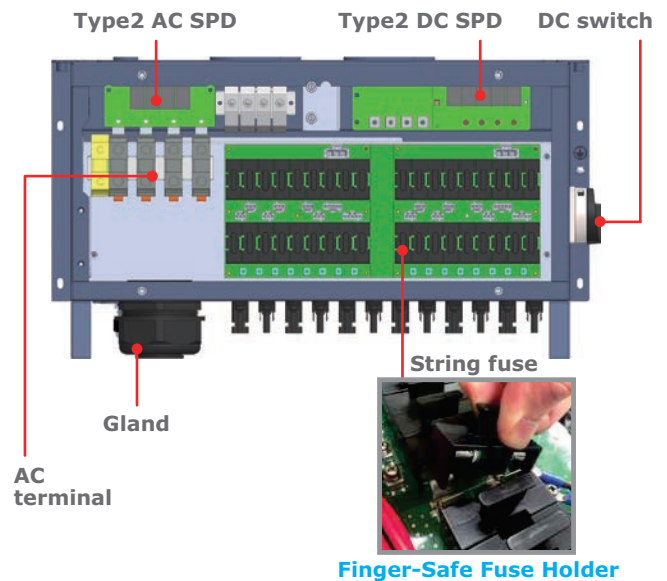
DC Switch

## Wiring Box Configurations

### ● M88H\_121 (Screw Terminal)



### ● M88H\_122 (Connectors & Fuses)



# Outstanding Performance

M88H have Excellent Efficiency Performance,  
Peak 98.8% and Euro 98.5%.



## Benefits with M88H

### Multi - Application:

Design for commercial & utility applications.

### All-in-One Design:

String fuses, surge protection devices, DC switches are integrated.

### Saving on Space Cost:

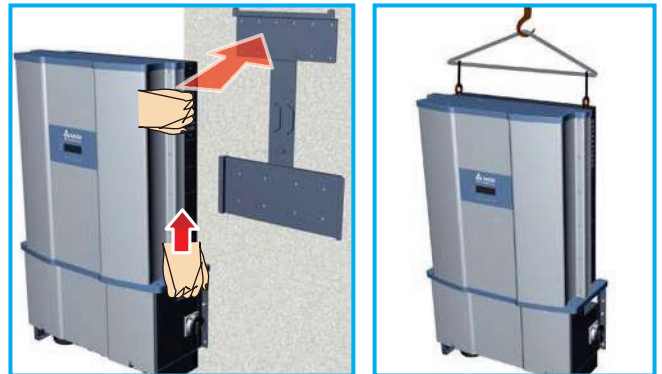
Can be mounted on the foothold of the PV panels, no house or container is required for inverter installation.

### 2 MPP Trackers:

2 MPP trackers provide more flexibility for PV arrays configuration and bumpy ground area to maximize yield.

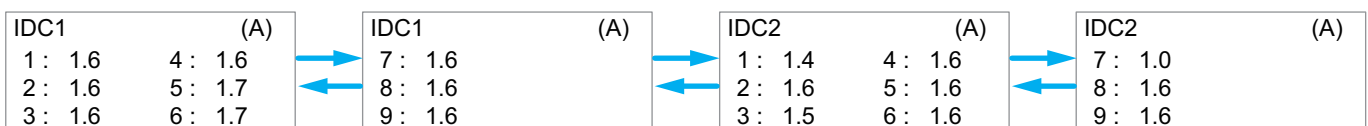
### Easy Installation:

Ergonomic grip design provides easy installation or removal by the installer. For additional flexibility, eye bolts are provided to allow for lifting using crane.



### String Monitoring Function:

The string monitoring function can precisely record real-time current value up to 18 strings via RS-485 interface (CF Model only).





# Delta RPI - Commercial Series

## Technical Data M88H

MODEL*	M88H	
Topology	Transformerless	
AC Voltage	400 VAC	480 VAC

### INPUT (DC)

Recommended Max. DC Power	90 kWp	110kWp
Max. Input Voltage	1100 V	
DC Voltage Range	200 - 1000 V	
Start-up Voltage	> 250 V	
Start-up Power	40W	
MPPT Voltage Range	200 - 1000 V	
MPPT Voltage Range, Full Power	500 - 800 V	600 - 800 V
Nominal DC Voltage	595 V	710 V
Max. Input Current per MPPT	70 A	
Total Input Current	140 A	
Maximum Short Circuit Current	180A / 90A per MPPT (ST / CF)	
No. of Independent MPPT	2	
Unbalanced MPPT loading	40 / 60	
Input Connection Type*	18 Pairs MC4 / Screw Terminals	
DC Disconnection Switch	Yes (1 x Integrated Mechanical DC Switch) (Only for CF Model)	

### OUTPUT (AC)

Rated Output Power	66 kVA	80 kVA
Maximum Output Power <sup>4/5</sup>	73 kVA	88 kVA
Rated Output Current	96 A	
Max. Output Current	106 A	
Inrush Current	40A / 100µs	
Nominal AC Voltage	3 Ph, 400 V	3 Ph, 480 V
AC Voltage Range	400 V ± 30 % (280~520)	480 V ± 20 % (384~576)
Nominal Frequency	50 / 60 Hz	
Frequency Range	± 5 Hz	
Power Factor at Rated Power	Unity	
Reactive Power (Adjustable)	0.8 lagging ~ 0.8 leading	
Harmonics	<3% at Rated Power	
DC Injection	<0.5% at Rated Output Current	
No. of Conductors	4 (3P3W + PE) / 5 (3P4W + PE)	
Output Connection Type	AC Wire Terminals	
AC Terminals	5 x AC wire Terminals, Bimetallic Wire Support (Copper or Aluminum) CF Model: 35-95 mm <sup>2</sup> / ST Model: 50-120 mm <sup>2</sup>	

### EFFICIENCY

Maximum Efficiency	98.8%
Euro Efficiency	98.5%

### PROTECTION

String Fuse Protection (String Fuses - 18 Nos. for Both +Ve & -Ve Strings)	Yes (Only for CF Model)
DC Disconnection Switch	Yes (Only for CF Model)
Ground Fault Monitoring / Grid Monitoring	Yes
DC Reverse Polarity Protection	Yes
DC Over Voltage / Current limitation Protection	Yes
AC Short Circuit Protection	Yes
AC Over Voltage / Current limitation Protection	Yes
DC / AC Side Surge Protection - Inbuilt	SPD, Type II
PID Offset Function Availability	Yes <sup>1</sup>

### GENERAL DATA

Dimension (H/W/D)	962 x 615 x 275 mm
Weight (kg)	84 kg
Operating Temperature Range	-25°C– 60°C (-25°C– 50°C @ full power)
Relative Humidity	0~100%, non-condensing
Operating Elevation	<3000 m
Degree of Protection	IP65
Noise level (Typical)	70 dB @ 1 m
Self Consumption at Night	< 3 W

### MODEL

	M88H_121	M88H_122
Variants	Screw Terminals (ST)	MC4 Connectors & Fuses (CF)
Model No.	M88H_121	M88H_122
DC Disconnect Switch	Not Available	Available
DC Fuse (Both Positive & Negative)	Not Available	Available
DC SPD	Available	Available
AC SPD	Available	Available
DC Connection Type	Terminal Block	MC4
AC Connection Type	Terminal Block	Terminal Block
DC Cable Size	50-120 mm <sup>2</sup>	4/6 mm <sup>2</sup>
AC Cable Size	50-120 mm <sup>2</sup>	35-95 mm <sup>2</sup>
String Monitoring	Not Available	Available

### CERTIFICATION

Anti-islanding Protection / Grid Regulation	VDE-AR-N 4105; IEC 61727, IEC 62116
EMC	EN 61000; IEC 61000
Safety	IEC/EN 62109-2:2011
Efficiency	IEC 61683:1999; EN 50530 (As Per MNRE and SECI Requirement)
Environmental Testing	IEC 60068-2-1; IEC 60068-2-2; IEC 60068-2-14 IEC 60068-2-30; IEC 60068- 2-6; IEC 60068-2-21; IEC 60068-2-27; IEC 60068-2-75; IEC 60068-2-78
Ingress Protection	IEC 60529 Edition 2.1 2001-02

### COMMUNICATION

Communication Port	RS 485
Display	20 x 4 LCD
Built-in Energy Data Logger	Yes
Emergency Power Off (EPO)	Yes, 1 No.
Dry Contact Relay	Yes, 2 Nos.
Digital Inputs	Yes, 6 Nos.

### WARRANTY

Standard Warranty Years	5
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### Notes

- PV Module grounding (Positive / Negative) is not allowed
- Parallel Operation of Inverters is possible for large Power Plants
- For Cos phi = 1 (VA=W); 73 kVa is Possible with: DC Input Voltage 595V; Symmetrical Loading; Ambient Temperature <34°C
- Refer to Delta's Standard Warranty Terms and Conditions for more details.

**For Any Sales / Application Engineering Support, Please Contact:**

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