



Delta All in one Storage solutions

- Hybrid inverter E5
- 6.0 kWh Li-ion Battery BX_6.0
- Smart monitor & control R4
- Power meter P1E / P3E

It's time to embrace energy independence

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.

Suitable for Indoor and Outdoor Installation



IP65

IP55

Having options is what life is all about. The Delta solution allows for you to install the inverter in IP65 locations and the battery in IP55 areas. Flexibility is key.

4 Layer Battery Protection

Over Voltage

Short Circuit

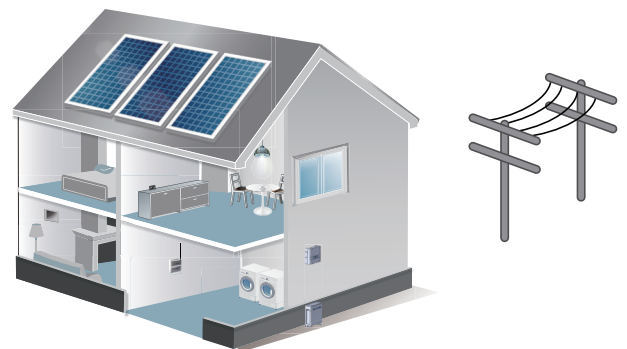


Over Temperature

Over Current

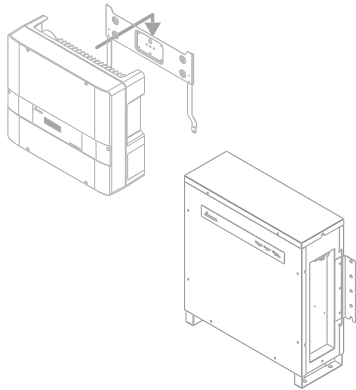
Delta's BX6.0 is the safest battery solution currently available. Engineered AND tested to 1100 degrees celsius as well as 5000kg impact resistance the BX6.0 is designed to be ready for all possibilities.

Zero Export



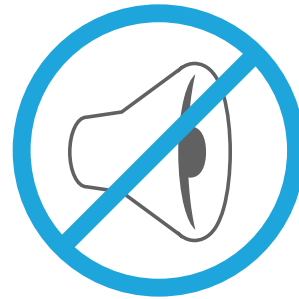
Some areas require limiting the energy exported to the grid. Utilising our colour touch screen and power CT you can meet this requirement. This is done using the Delta S4 management panel.

Easy Handling Easy Installation



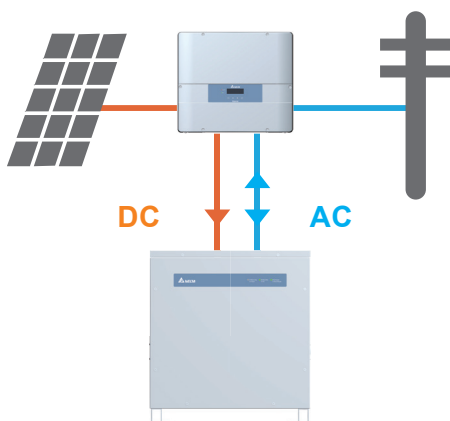
The BX6.0 battery can be wall mounted or floor-standing. The compact design makes for easy wall mount installation while maintaining high capacity.

Quiet Operation



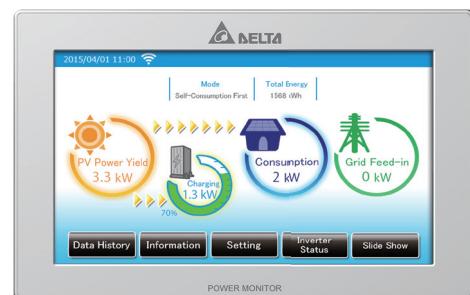
Engineered to only need natural cooling the BX6.0 has done away with noisy moving parts such as forced air or water cooled components.

Truly Hybrid



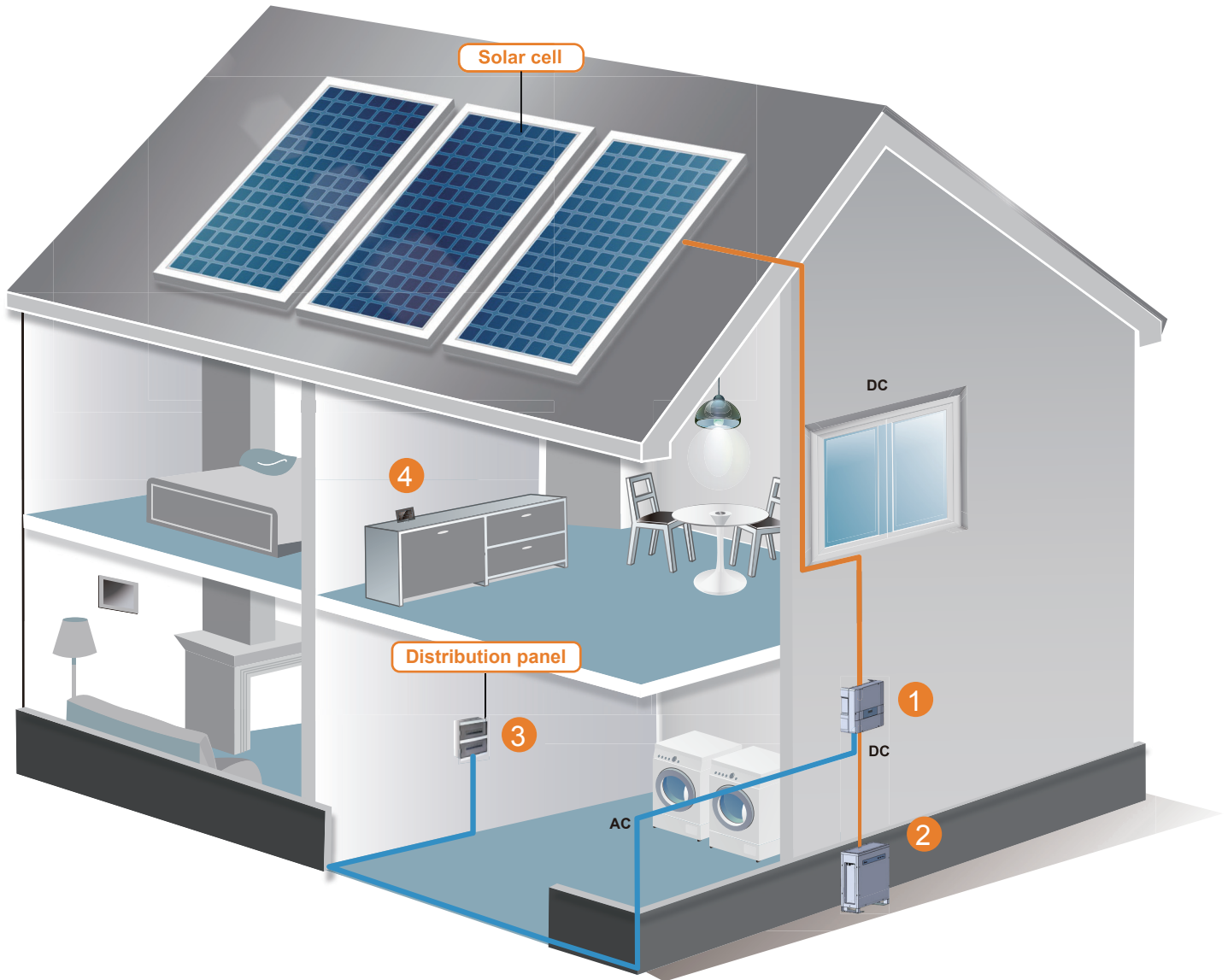
A true hybrid battery ready inverter the E5 can be installed as a simple string inverter with the option to add storage later. Even without batteries the E5 can provide critical load energy while generating with solar.

Smart Multiple Control



Access over seven different energy modes and easily monitor your consumption, production and battery capacity all from the touch screen monitor or any smart device connected to the local network.

Benefit from solar energy even after sunset



The Hybrid E5 energy storage system consists of a single phase 5kW hybrid inverter, an external fortified 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.

1 Hybrid Inverter

The E5 inverter is a true Hybrid battery ready inverter. Acting as a traditional inverter with the one exception that it can deliver energy during a power cut providing your solar panels are generating electricity. Even without batteries.



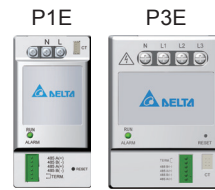
2 Battery

Pair the BX6.0 to the E5 and you have instant "Energy Security" for when the grid lets you down. Also saving you money by storing your free solar energy for use later on.



3 Power Meter

The P1 and P3 can measure your energy purchased, exported, stored and self consumed. The S4 will display this in real time as it happens.

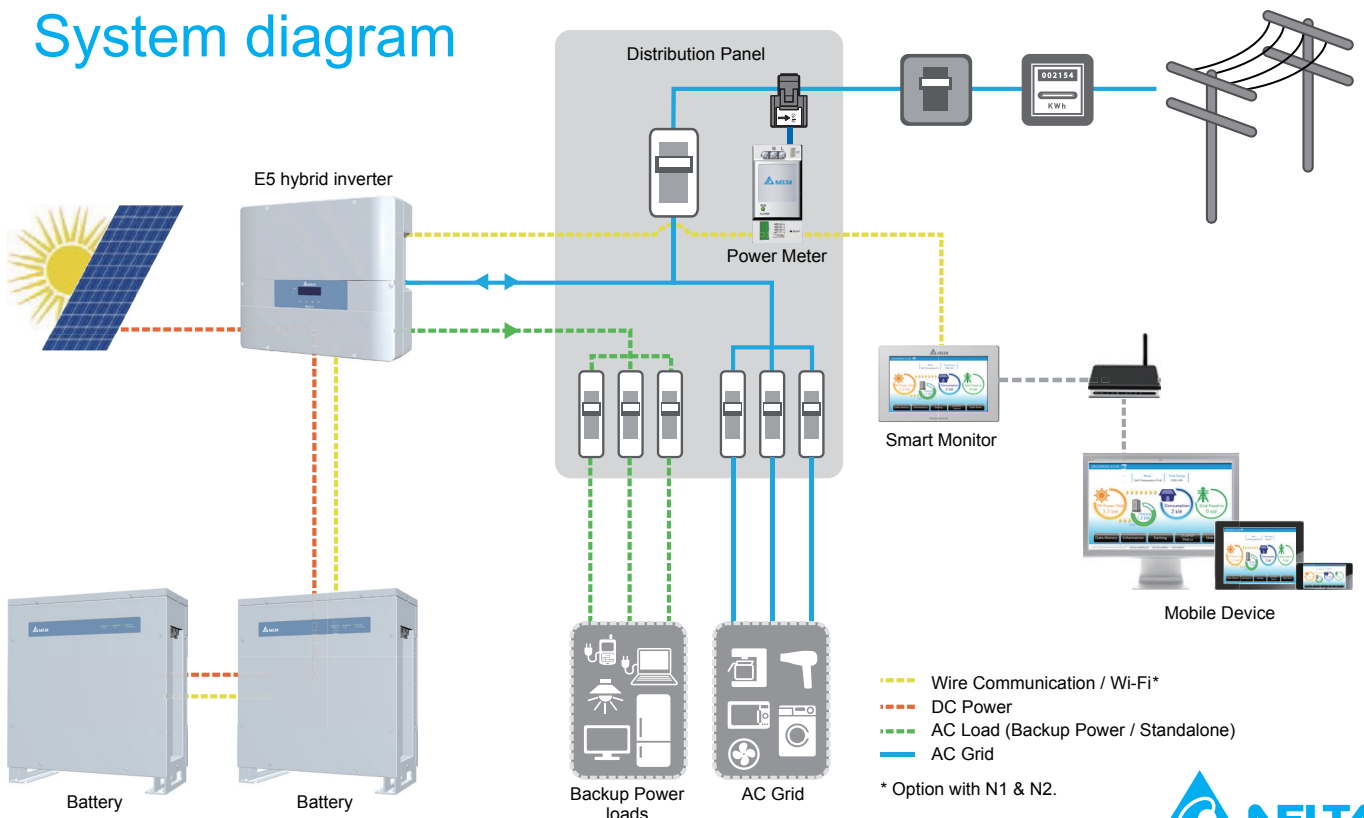


4 Smart Monitor

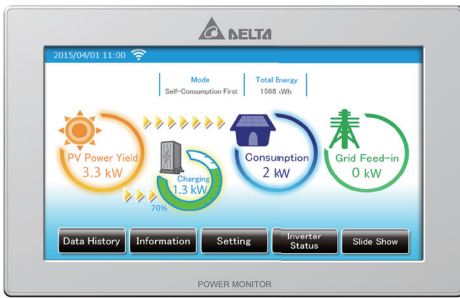
The S4 brings a new dynamic to managing your energy. Choose when and how you want energy delivered. View the real time status of your battery and consumption.



System diagram



Smart monitor

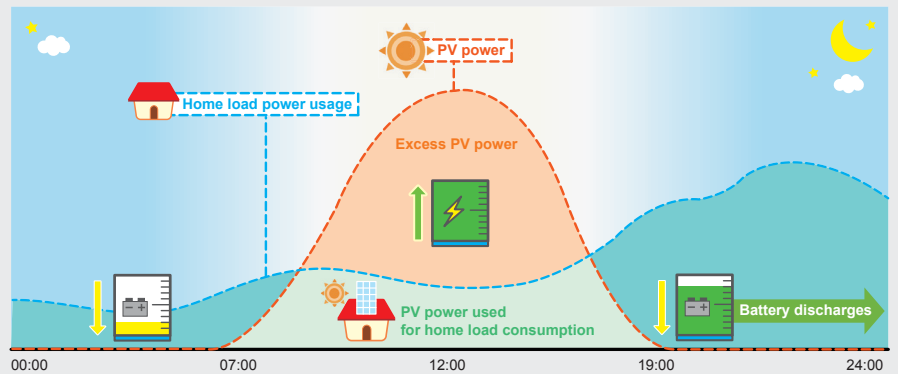


Set as a "Self Consume" mode the Delta product just works when first installed. As time allows you to become more familiar you can try different modes and select the one that best suits your need for that point in time.

Maximized energy application

Self-Consumption Mode

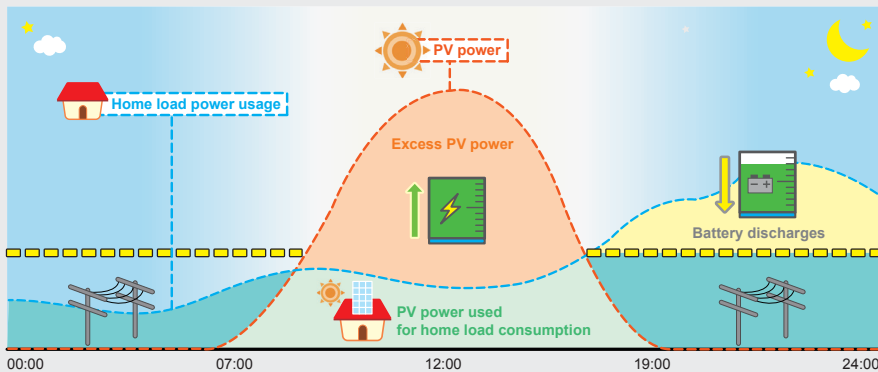
This setting allows the owner to maximize the use of self-generated solar energy by storing the excess solar energy produced during the day for later use. In this mode the inverter will essentially act as a standard hybrid inverter with the added advantage of being able to programme different battery 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

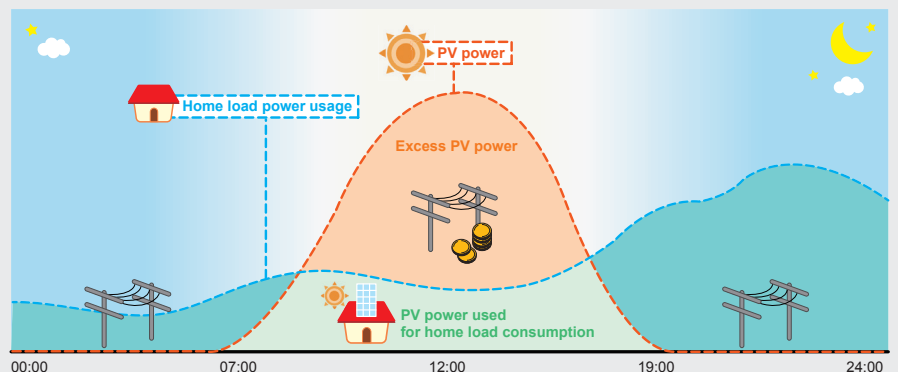
This setting helps reduce peak demand and subsequent cost from the grid provider by discharging batteries at a predefined 'peak level'. When the home load exceeds the 'peak level' (set by the installer), the battery will discharge to assist the home power usage.

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

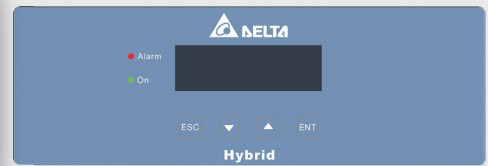
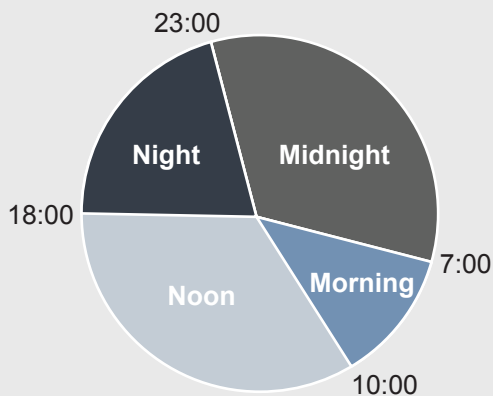


Without Battery Mode

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. Using the battery bypass mode you can still deliver energy in the event of a power failure providing the modules are generating electricity.



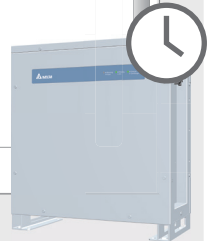
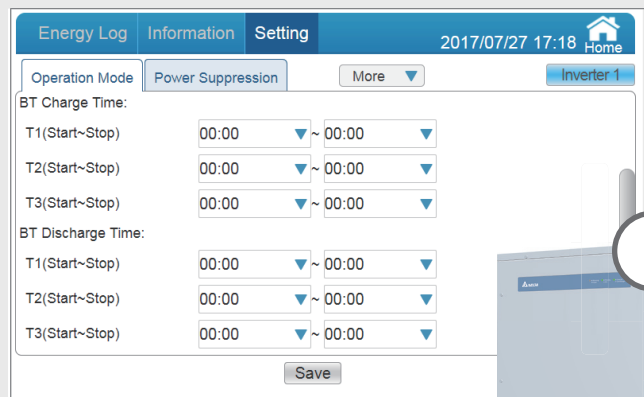
-Scheduling-



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.

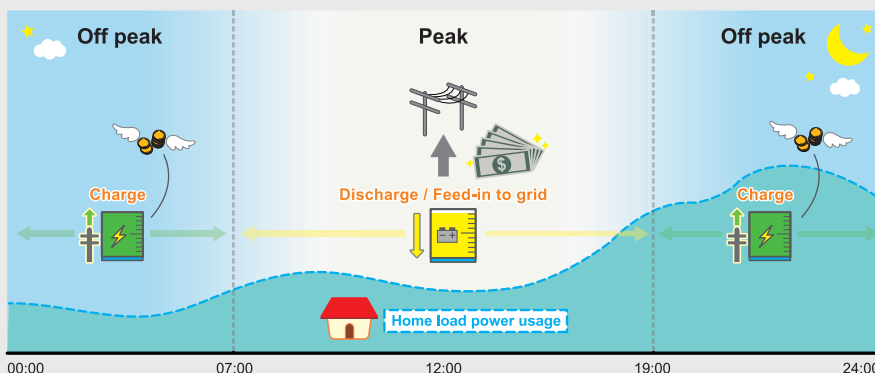
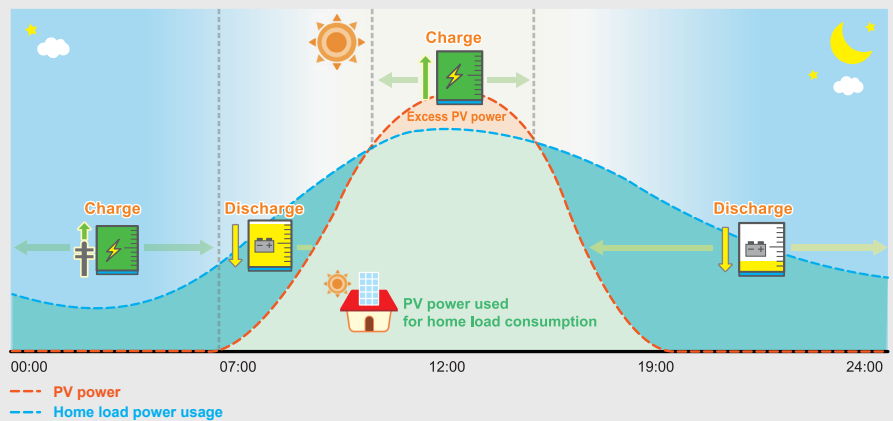
Time Settings

Time settings can be separated into BT charge time and BT discharge time. Each setting can set 3 time intervals. These 6 time intervals don't overlap with each other. When the inverter operation mode is 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 then set and return it to self-consumption / selling first mode outside the intervals.



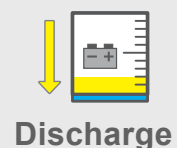
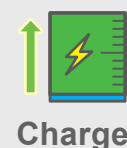
Application for TOU Rates (Time of use rates)

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!



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.



* Delta storage system is completely compliant 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 stand-alone power supply

The Delta hybrid system can act as a Standalone power supply. Paired with an appropriately sized solar array you can power that remote location where grid energy is not available.



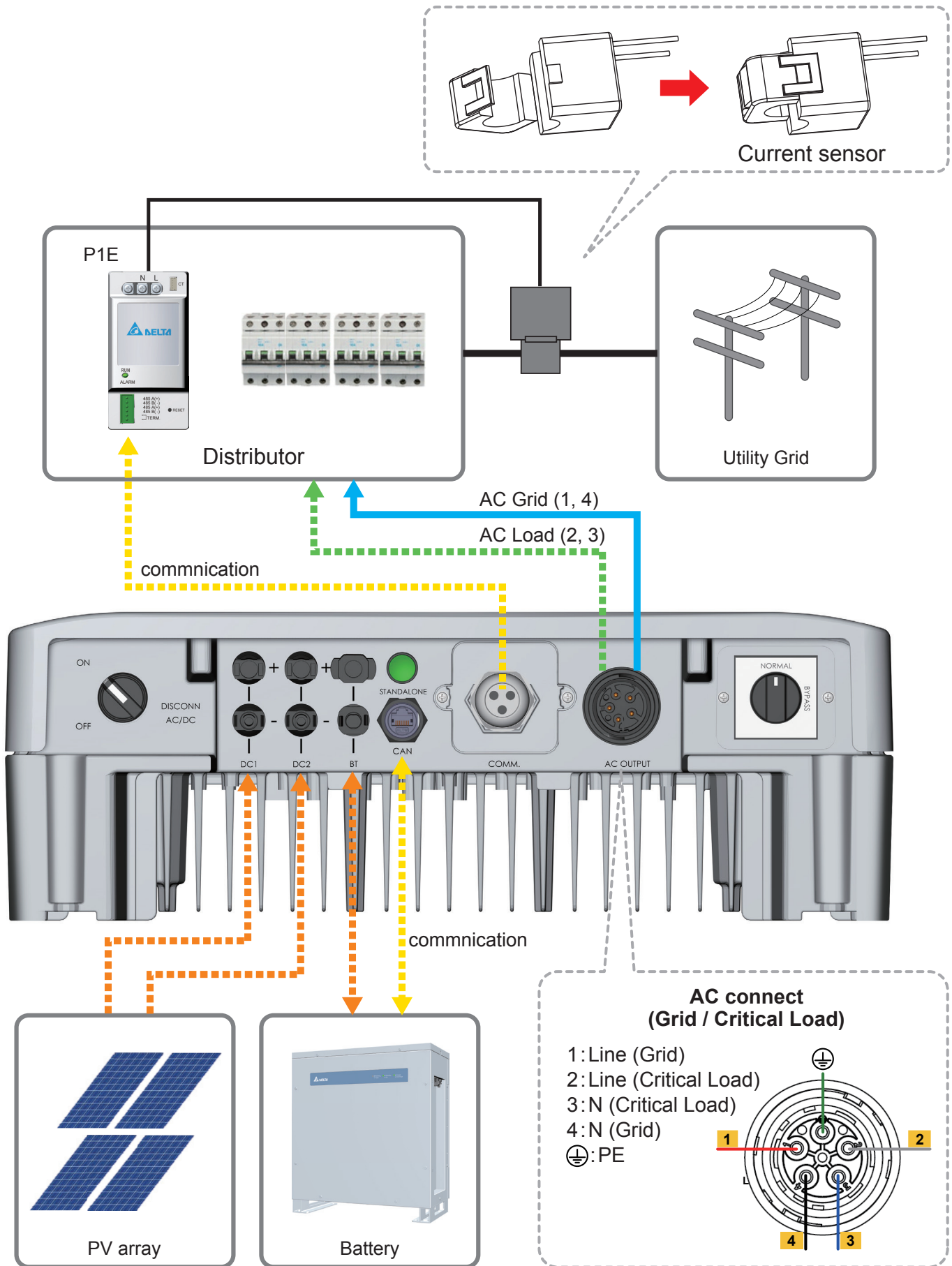
PV inverter only

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

Manual bypass

Delta has built in redundancy that allows you to manually select self consumption.z

Input / Output Interface



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

Design For Battery Safety

Exterior



Safe and Powerful

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

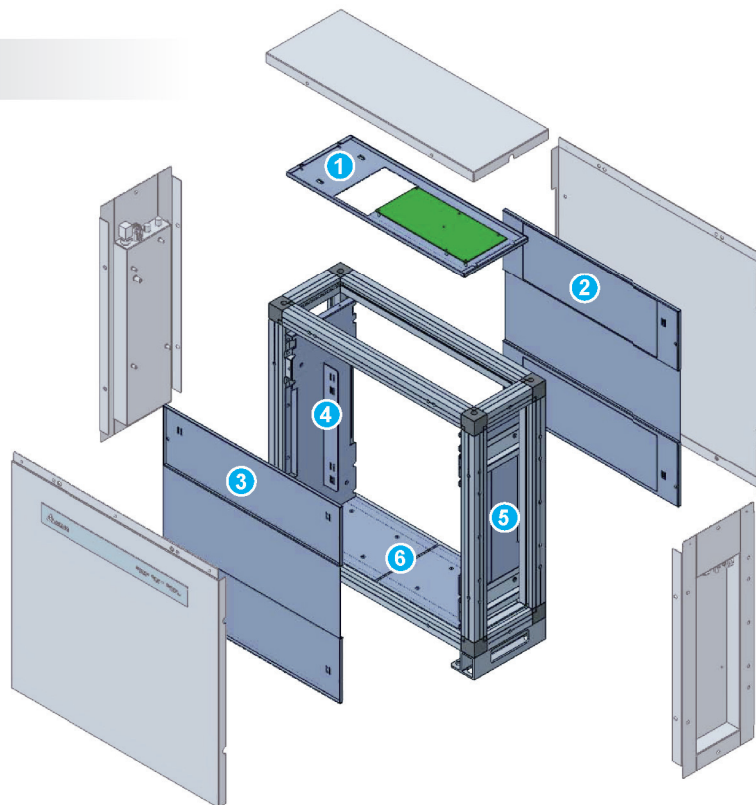
IP55 protection level allows BX 6.0 to be installed indoor and outdoor.



Absolutely Quiet

Almost no noise during the BX 6.0 daily operation.

Interior



4X Battery Module Protection

Over Voltage



Short Circuit

Over Temperature

Over Current

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

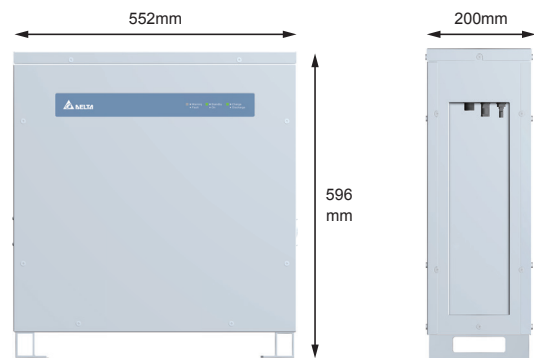
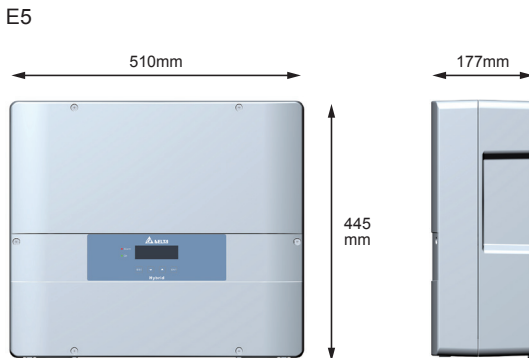
Hybrid inverter

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	
	Rated output power	5000VA
AC Output	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	

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

Battery box



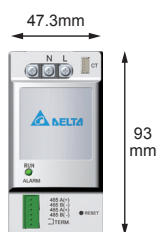
Power meter

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 x 47.3 x 66.5 mm	93 x 70 x 66.5 mm
Weight	145 g without CT	200 g without CT

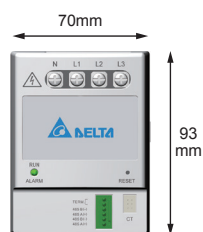
Smart monitor

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
Operation temperature	-20°C ~ 50°C
Storage temperature	-20°C ~ 60°C
Relative humidity	30% ~ 85%
Dimension	120 x 190 x 32 mm
Weight	440 g

P1E



P3E



R4

