



## ENERGY STORAGE MODULE

### [VT5000ES48 Product Description and Datasheet](#)

VT5000ES48 is the standard 19-inch rack-mounted lithium battery module. It is designed for home and commercial solar energy storage as well as power back up for the critical equipment during the grid power blackout.

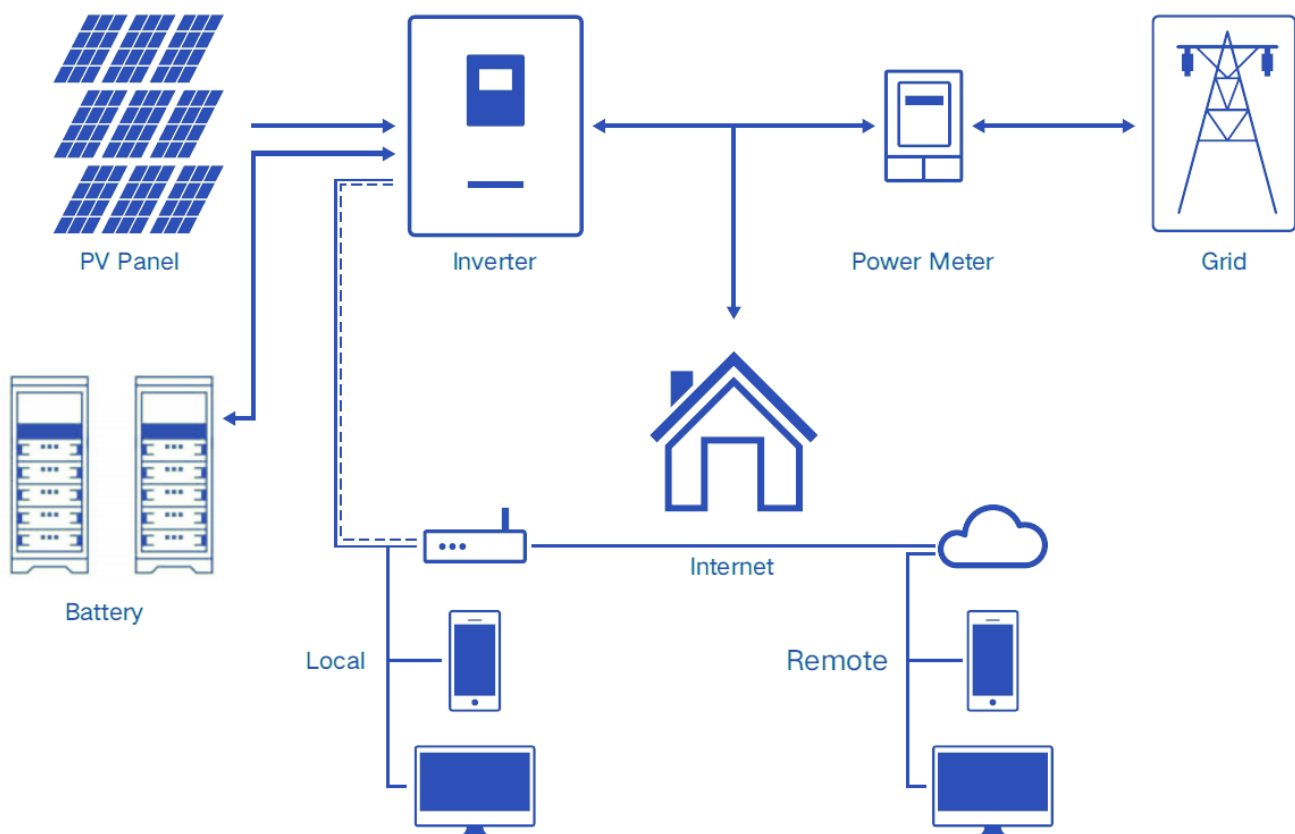
VT5000ES48 uses Lithium Iron Phosphate (LFP) chemistry which is recognized as one of the safest Lithium chemistries currently in use.

The simplicity in modulating the battery makes it possible to create small or large energy storage systems. By adding additional battery modules, the initial energy storage installation can be expanded to a battery group of 16 modules in a single 19-inch rack.

## PRODUCT FEATURES

- The expected design life is up to 15+ years
- 10 years warranty
- Greater depth of discharge (DOD 90%) compared to Lead-Acid/AGM/GEL battery(DOD 50%)
- Single battery module capacity of 5.1kWh
- Working temperatures of between -20°C to 55°C (Charging 0~50°C; discharging -20~55°C)
- More stable and safer LFP internal battery cells, allowing an increase in the combustion temperature of 600°C compared to 300°C relative to NMC and LCO
- Battery management system (BMS) automatically manages charge/discharge state and balance current/voltage of each cell. BMS enables protection functions including over-discharge, over-charge, over-current protection and high/low temperature protection.
- 19 inch standard module battery design, easy installation, DIY friendly and expansion up to 16 modules that makes the total capacity to 81kwh in a single battery group.
- Natural cooling allows the battery to achieve the highest energy efficiency and no fan noise

## SYSTEM ARCHITECTURE



# TECHNICAL SPECIFICATIONS

<b>Model</b>	VT5000ES48
<b>Nominal DC Voltage</b>	51.2V
<b>Operation Voltage Range</b>	44.8V-57.6V
<b>Nominal Capacity/Usable Capacity</b>	5.1kWh(100Ah) /5.1kWh(100Ah)
<b>Rated DC Power</b>	2.5kW
<b>Max Charge / Discharge Power</b>	2.5kW / 5kW
<b>Standard Continuous Charge / Discharge Current</b>	50A/50A
<b>Max Charge / Discharge Current</b>	50A/100A
<b>Peak Discharge Current</b>	150A(10S)
<b>Peak Charge Current</b>	100A(5S)
<b>Charge/Discharge Cycles (80% Remaining Capacity)</b>	6000 @80% DoD @25°C
<b>Operating Temperature Range</b>	Charge: 0° to 50°C / Discharge -20° to 55°C
<b>Operating Humidity (Non condensating)</b>	<95%
<b>Altitude</b>	Below 4000m
<b>Battery Dimensions</b>	530mm D x 440mm W x 132mm H
<b>Battery Mounting Options</b>	Standard 19" Rack Mounting / Horizontal or Vertical
<b>Module Weight</b>	50kg
<b>Short Circuit Current</b>	210A
<b>BMS Over-Volt cut off</b>	58.4V
<b>BMS Under-Volt cut off</b>	43.2V
<b>BMS Over-Temp cut off</b>	65°C
<b>BMS Under-Temp Cut off (Discharge)</b>	-20°C
<b>BMS Under-Temp cut off (Charge)</b>	0°C
<b>Self Discharge</b>	<5% (25°C, 50%SoC)
<b>Lithium Composition</b>	Lithium Ferro Phosphate (LiFeP04 or LFP)
<b>Communication</b>	CAN/RS485/RS232
<b>IP Rating</b>	IP20
<b>Round Trip Efficiency</b>	>95.6%
<b>Expected Life @25°C</b>	Over 15 years design life when used as per recommended
<b>Cooling</b>	Natural cooling
<b>Parallel Stacking(max. in 1 battery management group)</b>	16
<b>Serial Stacking</b>	Not designed for serial connection
<b>Certifications</b>	TUV IEC:62040 IEC:62619:2017, UN38.3, EMC
<b>Shut Down SoC</b>	Configurable, 20% By Default
<b>Continuous Charge Voltage (Per Warranty)</b>	57.6V
<b>Float Voltage</b>	57.4V
<b>100% recharge</b>	7 to 14 days to keep External SoC counter accurate
<b>Depth of Discharge</b>	100%
<b>Warranty</b>	10 year warranty Refer Warranty document for warranty duration, installation, usage and maintenance requirements
<b>Note</b>	The specification is subject to change at any time without notice

