

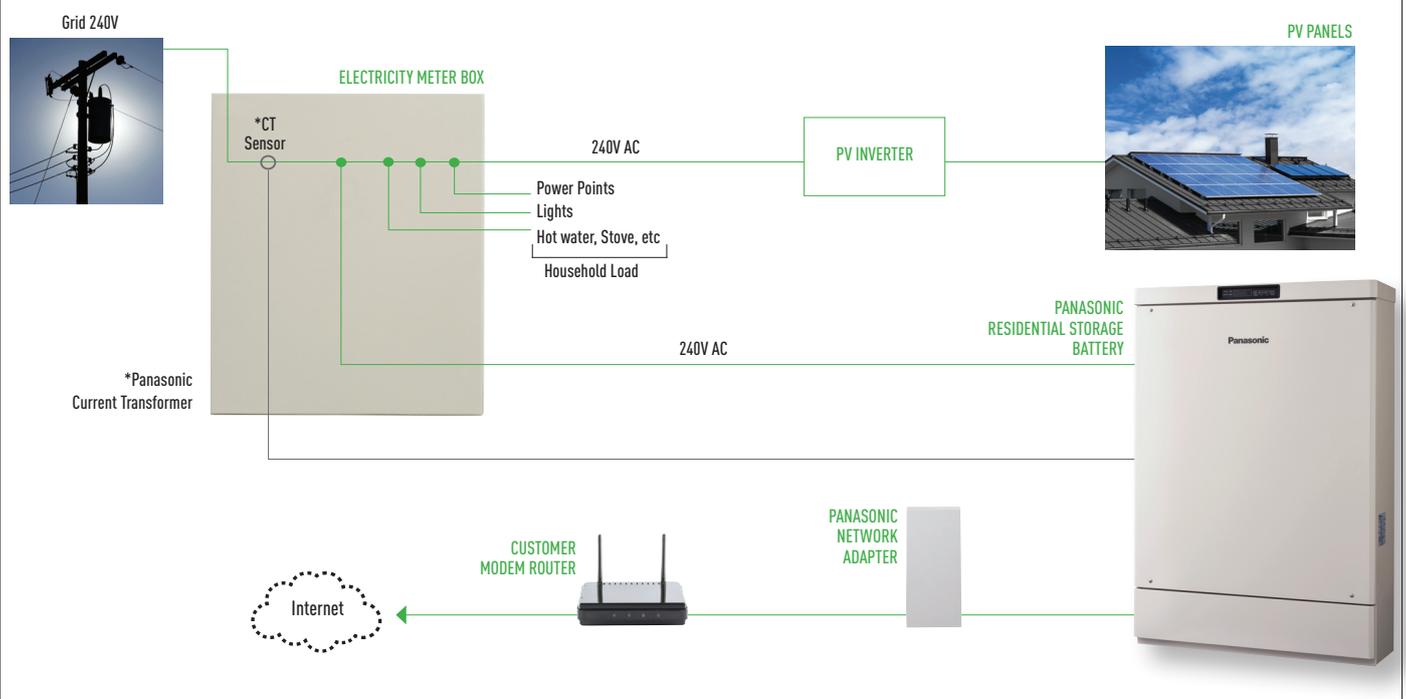
## ENERGY SOLUTIONS RESIDENTIAL STORAGE BATTERY SYSTEM



LJ-SK56A  
LJ-SK84A

### FAQ

QUESTION	ANSWER
What is the purpose of a residential battery system?	A residential storage battery system uses the power generated by your solar system to charge its batteries. The stored power is then discharged during the evening peak period to help reduce your overall energy costs.
What's inside the Panasonic Residential Storage Battery System cabinet?	The standalone 'all in one' heavy duty metal cabinet houses the battery modules, control electronics and a smart inverter that automatically switches between battery charger and inverter (discharge).
Can this product be connected to our existing grid based solar panel/inverter installation?	Using AC-coupled connection technology, our product connects to most existing grid based solar panel / inverter installations.



What is an AC-coupled connection?

Most battery storage systems are connected to the existing solar panel installation by 'breaking-in' to the solar panel's DC output line; this is known as a DC-coupled connection. Our product connects directly to the household 240V AC power circuit in the meter box. An AC-coupled connection simplifies installation that does not interfere with the existing solar panel / inverter installation in any way.

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<p>We have a stand-alone “off-grid” solar panel/ battery installation that supplies all our electricity needs. Does the Panasonic Residential Storage Battery System work with “off-grid” solar panel installations?</p>	<p>An AC-coupled residential storage battery system requires a grid connection at all times to operate.</p>
<p>How does the Panasonic residential battery storage know when to charge and discharge?</p>	<p>In the meter box, we attach a small (matchbox size) current transformer (CT) onto the existing incoming 240V AC grid cable to monitor current flow direction. When the CT detects current flow to the grid (ie solar panel is exporting power to the grid), it signals the Panasonic residential storage battery system to begin charging. Conversely, when the CT detects current draw from the grid, (ie household power consumption) combined with time of day, it triggers the battery discharge process to supplement the household power consumption. We call this charge/discharge cycle function as the “Maximum Self Consumption” mode.</p>
<p>How long does it take to charge the battery?</p>	<p>Between 4 and 8 hours depending on the available excess power generated by the solar panels.</p>  <p>The chart displays a 24-hour cycle. The y-axis represents energy in kWh, ranging from -2k to 10k. The x-axis represents hours from 00:00 to 24:00. A blue horizontal line at approximately 8.5 kWh represents the Total Capacity. A red line shows the Remaining Capacity, which starts at 8.5 kWh, drops to 0 kWh by 10:00, and then rises back to 8.5 kWh by 17:00. A green area chart shows Total Charge, which is 0 kWh until 10:00, then rises to 8.5 kWh by 17:00. A red area chart shows Total Discharge, which is 0 kWh until 17:00, then drops to -8.5 kWh by 21:00, and returns to 0 kWh by 24:00.</p>
<p>What are the benefits of slow battery charging?</p>	<p>The chemical reaction created during a battery charge / discharge process increases battery temperature. The optimum way to manage battery temperature is by intelligent control of the battery charge / discharge time. A steady / slow charge time keeps the battery temperature in check and prolongs battery life.</p>
<p>What is “Depth of Discharge” (DoD)?</p>	<p>Depth of Discharge (DoD) describes how deeply a battery is discharged relative to its fully charged useable capacity. The Panasonic residential storage battery system has a DoD of 99%. In other words, a fully charged battery will be discharged down to 1% of its fully charged useable capacity.</p>
<p>What is the Panasonic Residential Storage Battery System cycle life?</p>	<p>A battery’s cycle life is the number of complete charge/discharge cycles that the battery is able sustain before its capacity falls below 60% (SoH) of its original usable capacity. When the Panasonic residential storage battery system is used in the factory default “Maximum Self Consumption” mode where every 24 hours, one full discharge cycle (100% to 1%) is followed by one full charge cycle (1% to 100%), the battery will maintain at least 60% (SoH) of its initial usable charge capacity over a 10 year period. This is equivalent to 3,650 cycles. It also follows that when other charge/discharge modes are employed that exceed one cycle per day (i.e. multiple daily full charge / discharge cycles), the battery charge capacity will fall below 60% (SoH) sooner than 10 years.</p>

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<p>What is Panasonic's "State of Health" (SoH) for the Residential Storage Battery System?</p>	<p>A battery's 'State of Health' (SoH) is an indicator of the battery's long term storage capability when compared to a new battery. Over a 10 year period, when used in the factory default 'Maximum Self Consumption Mode', the Panasonic batteries will retain at least 60% of their initial new battery storage usable capacity.</p>
<p>What is the expected battery life?</p>	<p>Between 10 years (min) and 14 years (max) when used in the factory default "Maximum Self Consumption" mode.</p>
<p>What is the minimum solar panel output requirement?</p>	<p>A 3kW solar panel system is considered a minimum when taking into account the solar panel system must deliver power for house hold appliances and enough excess power for charging the residential storage battery system.</p>
<p>Can the Panasonic Residential Storage Battery System be "Daisy Chained" (ie; scaleable) to increase storage capacity?</p>	<p>Unfortunately, Panasonic residential storage battery system cannot be 'daisy chained' to increase its storage capacity.</p>
<p>What happens to the Residential Storage Battery System during a power blackout?</p>	<p>When set to default "Maximum Self Consumption" mode, system automatically shuts down and automatically restarts on the resumption of grid power. Optionally, during a power failure, the system may be manually set "Back-up operation" which provides 240V output (for several hours depending on the battery charge level) via a dedicated 240V AC power point wired directly to the Panasonic residential storage battery system. (Note: the "Back-up operation" does not provide UPS type functionality). On the resumption of grid power, (when in "Back-up operation"), the Panasonic residential storage battery system must be manually reset back to its default "Maximum Self Consumption" mode.</p>
<p>Is the Panasonic Li-ion Residential Battery Storage System Safe?</p>	<p>For more than 90 years, Panasonic has produced battery products trusted worldwide for performance, safety, and reliability. With a rich history of industry leading innovation in Lithium-ion batteries, Panasonic's residential storage battery systems are designed with multiple layers of safety to protect against overvoltage, overcurrent and over temperature. This is achieved by:</p> <ol style="list-style-type: none"> <li>1. Li-ion battery cells are manufactured with protection mechanisms that employ a vent plate, Current Interrupt Device (CID) and separator.</li> <li>2. Battery modules featuring fusing resistors &amp; current fuses.</li> <li>3. A heavy duty metal battery cabinet in conjunction with smart software continuously monitors the integrity of battery modules. In the event of an abnormality, the system will stop charge or discharge and trip its internal current breaker.</li> </ol>
<p>Does the Residential Battery Storage System produce operational noises during use?</p>	<p>The battery storage system operational noise level is less than 40dB which is about the same level to noises generated by a PC computer or a quiet bedroom at night.</p>



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What are the differences between the LJ-SK56A and the LJ-SK84A?		<b>LJ-SK56A</b>	<b>LJ-SK84A</b>
	Useable Capacity	5.3kWh	8kWh
	Battery Voltage (DC)	93.6v	140.4v
	Related Power Output	2.0kW	
	Backup Output	2kVA	1kVA
	Battery Storage Cabinet Size (mm)	966 x 1380 x 279	
	Battery Storage Cabinet Weight inc Batteries	136 KG	159 KG
	Hardware Warranty	10 Years	7 Years
	Battery Performance Warranty	10 Years	
	Availability	December 2016	Discontinued



For more information: [www.panasonic.com.au/energysolution](http://www.panasonic.com.au/energysolution)

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