



Panasonic

Powered by Panasonic Li-ion technology



More power. More efficiency. Easy install.

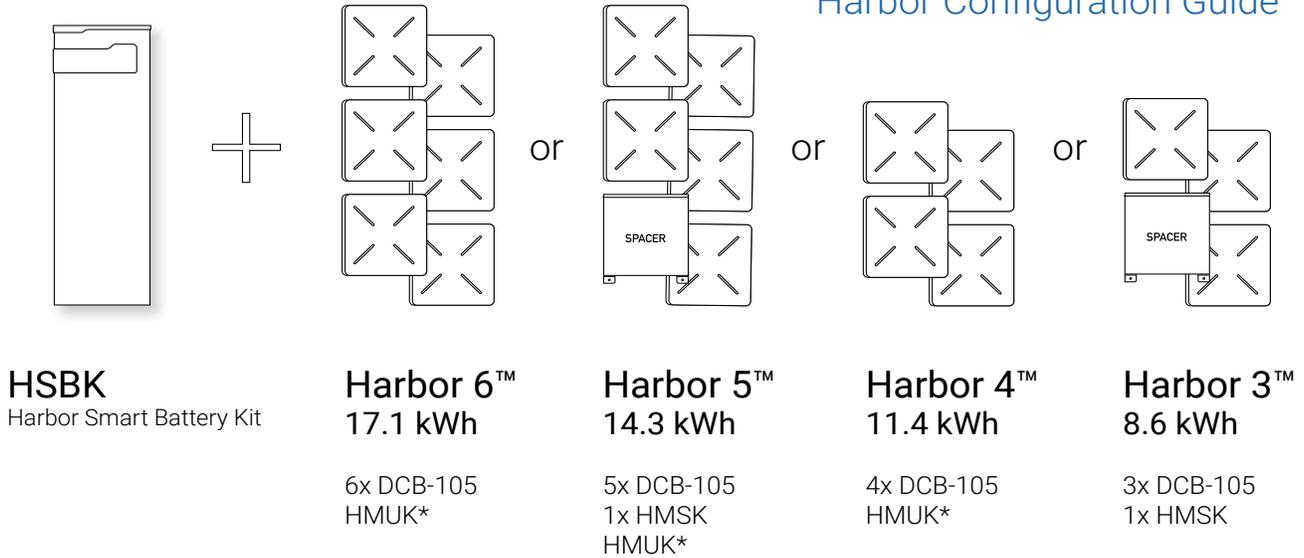
No other smart battery offers the flexibility of Harbor. Whether for backup power or smart energy management, the Harbor smart battery has power and capacity options for every need, without sacrificing flexibility or function.

The Harbor smart battery series allows system owners the flexibility to scale from the economical 8.6kWh Harbor 3™ to the massive 17.1 kWh Harbor 6™ by adding additional Panasonic Li-ion modules, the gold standard in storage.

- Connect as many as four (4) Harbors to a single Pika Islanding Inverter™ for up to 68.4kWh of storage
- Best-in-class battery backup power
- Plug-and-play with Islanding Inverters™ and PV Links™
- Time-of-use (TOU) and zero-export ready
- Residential and commercial application ready

Harbor Model Spec:	3	4	5	6	Units	Note
Battery Modules	3	4	5	6	Quantity	Touch-safe Panasonic DCB-105
Total Energy	10.1	13.5	16.9	20.3	kWh	Total energy capacity
Usable Energy	8.6	11.4	14.3	17.1	kWh	Automatically-controlled depth of discharge
Power: Rated Continuous	3.4	4.5	5.6	6.7	kW	Full cycle: 0% to 100% to 0% SoC @ 30° C
Power: 60 minutes	4.2	5.6	7.0	8.4	kW	Discharge @ 25° C
Power: 2 minutes	5.0	6.7	8.4	10.0	kW	Discharge @ 25° C
REbus Voltage: Input/Output		360 - 420			VDC	380VDC nominal
Module Voltage		46.8			VDC	Internal, per-module nominal DC voltage
Round-Trip Efficiency		96.5			%	REbus to REbus (DC to DC)
Operating Temp. Range		41-113, (5-45)			°F, (°C)	Operating limits
Recommended Temp. Range		54-86, (13-30)			°F, (°C)	Recommended for battery longevity
Maximum Installation Altitude		9834, (3000)			ft, (m)	Module warranty void if installed above limit
Dimensions		68 x 22 x 10, (1725 x 560 x 235)			in, (mm)	Approx. H x W x D
Weight (Enclosure)		115, (52)			lb, (kg)	42 lb Cover, 73 lb Chassis
Weight (Installed)	280, (127)	335, (152)	390, (178)	445, (202)	lb, (kg)	Includes enclosure and all modules
Warranty: Li-ion Modules	10, (22.6)	10, (30.2)	10, (37.8)	10, (45.3)	Years, (MWh)	Warrantied by Panasonic Corporation
Warranty: Electronics and Enclosure		10			Years	Warrantied by Pika Energy
Communication Protocol		REbus DC Nanogrid™			-	Power Line Carrier
Compliance		UL 9540, UL 1973, UL 1642, CSA 22.2			-	-

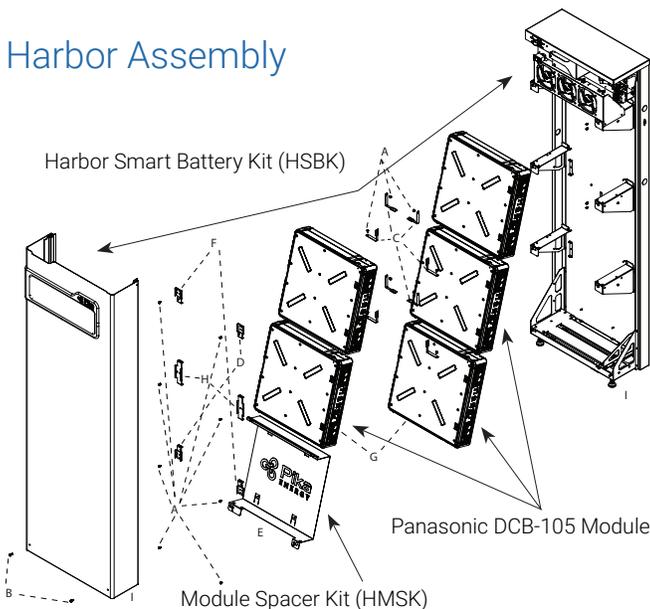
Harbor Configuration Guide



Harbor Smart Battery Design

Harbor is a modular smart battery platform that allows for a range of configurations to suit any need, small or large. Harbor can be built in capacities ranging from 8.6-17.1kWh. When needs change, Harbor can be upgraded with additional modules. Use the chart above to understand what components you need for your chosen Harbor configuration.

Harbor Assembly



Upgrading Harbor

Inside of Harbor, Panasonic DCB-105 Li-ion battery modules are stacked 2-deep on three levels, allowing for up to six modules to be connected in series. Upgrade an existing Harbor smart battery by adding modules and a module spacer (HMSK) if required. Harbor 3 and Harbor 5 require a module spacer.

Pika offers a convenient Harbor Upgrade Kit (HMUK) to help replace lost or misplaced hardware. A Harbor Upgrade Kit may be purchased from your Pika distributor.

Refer to the table below for material requirements related to upgrading Harbor.

Upgrade Material Requirements

		Ending Configuration		
		Harbor 6	Harbor 5	Harbor 4
Starting Configuration	Harbor 3	+ 3 x DCB-105 + 2 x HMUK*	+ 2 x DCB-105 + 1 x HMUK*	+ 1 x DCB-105 + 1 x HMUK*
	Harbor 4	+ 2 x DCB-105 + 1 x HMUK*	+ 1 x DCB-105 + 1 x HMSK	
	Harbor 5	+ 1 x DCB-105 + 1 x HMUK*		

*HMUK (Upgrade kit) only required if original hardware is unavailable