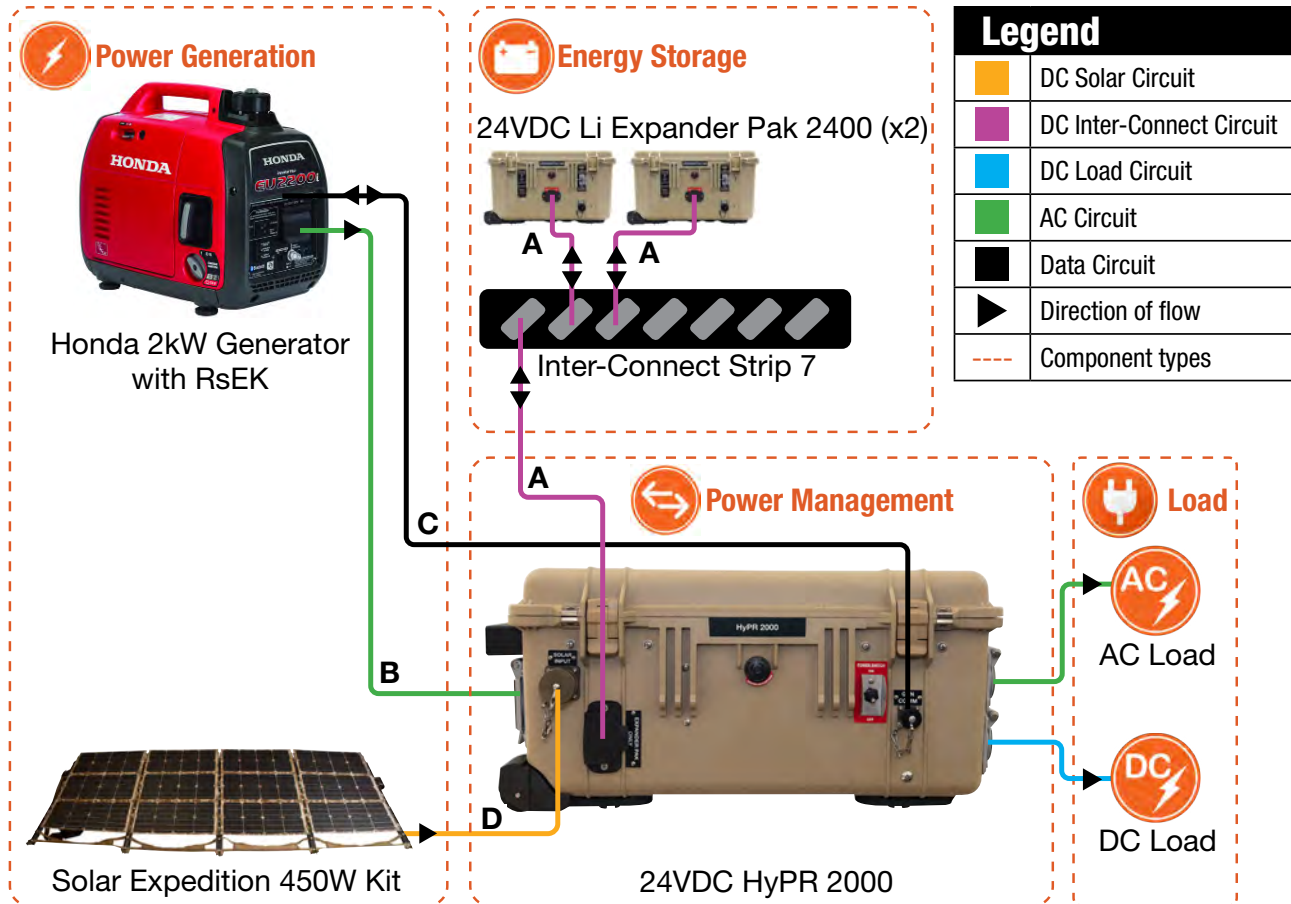


Hybrid Power System Quick Start Guide



1. Connect System

Connect System according to diagram below. Cable item numbers are printed near cable connectors to aid in cable identification.



Cable	Item #	Nomenclature	QTY
A	13-000032	CABLE, POWER, INTER-CONNECT, 24VDC, 5', 2AWG	3
B	13-1000277	AC POWER CABLE, 10', 5-15P to 5-15R	1
C	13-1000288	GENERATOR COMMUNICATIONS CABLE, 1kW and 2kW, 10'	1
D	16-0800102	CABLE, SOLAR, MC4/BAYONET, 24VDC, 30', 6AWG	1
-	20-0102009	24VDC HYBRID POWER ROUTER (HyPR) 2000	1
-	16-0800105	SOLAR EXPEDITION 450W KIT	1
-	19-0401015	HONDA 2KW GENERATOR WITH RsEK	1
-	21-0202303	24VDC Li EXPANDER PAK 2400	2
-	13-1000160	24VDC INTERCONNECT STRIP 7	1



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www.solarstik.com

Technical Support
1-800-793-4364 Ext. 102
Outside of the US
+1-904-808-0510 Ext. 102
tech@solarstik.com

2. Prepare Generator

Note: This generator has been modified with an automatic choke mechanism. Moving the choke lever manually will not damage the mechanism and may be required when starting generator manually.

a. Before operating the generator:

- Check oil level. Fill or change as necessary.
- Check air filters. Clean or replace as necessary.
- Check fuel level. Fill as necessary.

b. Generator warm up and testing in manual mode.

- i. Toggle generator GEN COMM switch to MANUAL.
- ii. Toggle generator ECO THROTTLE switch to OFF.
- iii. Rotate generator fuel vent cap clockwise to ON.
- iv. Rotate generator ENGINE SWITCH to ON.
- v. Close choke.
- vi. Start generator with pull cord. Allow 15-minute warm up. Open choke, as appropriate, during warm up period.

c. Prepare generator for automatic operation with System.

- i. Toggle generator GEN COMM switch to AUTO.
- ii. Toggle generator ECO THROTTLE switch to OFF.
- iii. Rotate generator fuel vent cap clockwise to ON.
- iv. Rotate generator ENGINE SWITCH to ON.

Note: These settings must be maintained while the System is idle for normal, automatic System operation.

Generator is now ready to operate autonomously with the Hybrid Power System.

3. System Operation

a. Activate the Hybrid Power System.

- i. Toggle each Li Expander Pak 2400 POWER SWITCH to ON.
- ii. Toggle HyPR POWER SWITCH to ON.
- iii. Set HyPR AC INPUT CONTROL dial to match output limit of AC power source. Table below provides recommended settings for two (2) potential AC power input/output configurations. Settings maximize Expander Pak (Energy Storage Modules; ESMs) charging while protecting the AC source from overload fault ensuring continuity of operation.
- iv. Toggle appropriate HyPR switches, AC OUTPUT, AC INPUT, SOLAR INPUT, to ON. LEDs will illuminate, confirming active circuit.

b. Initiate System calibration and cycling with generator.

- i. Rotate generator ENGINE SWITCH to ON.
- ii. Rotate vent on generator fuel cap clockwise to ON.
- iii. Toggle HyPR GENERATOR CONTROL switch to ON position.
Note: Generator will start and stop before running continuously, as part of the warm-up process. Once generator is running continuously for five (5) minutes, proceed to next step.
- iv. Rapidly toggle HyPR GENERATOR CONTROL switch to AUTO.
- v. Allow generator to run and charge ESMs until generator stops automatically.
Note: Charge function begins only after generator is running continuously for five (5) minutes.
Note: Generator operation will stop when ESMs are charged fully (~29.0 VDC).
- vi. Automatic cycling begins: Loads are supported by ESMs until voltage reaches ~25.0 VDC, at which point, generator will automatically start to recharge ESMs.

4. System Deactivation

- a. Charge ESMs to 100% (~29.0 VDC and ~1.0 A).
- b. Toggle all HyPR power circuits to OFF.
- c. Toggle each Li Expander Pak 2400 POWER SWITCH to OFF.
- d. Rotate generator ENGINE SWITCH and fuel vent cap to OFF.