

ENERGYSYNC 51V 5-IN-1

Integrated Power Conversion and Distribution System



CAT # ES-KIT-001



ONE SYSTEM. TOTAL CONTROL.

The EnergySync is an automotive-grade, integrated power conversion and distribution system. The **5-in-1 Power Converter** delivers AC power, multi-source charging, solar MPPT charging, and 12VDC output. The **Power Distribution Unit (PDU)** provides protected AC and DC power. The **7" Touchscreen** gives full system visibility and control.

KEY BENEFITS

- + **Complete Power System:** Inverter, charging, solar, alternator input, and 12V power integrated into one solution.
- + **Advanced Compact Power:** Five high-performance power functions in a single platform, delivering 5,000W split-phase AC power with 10,000VA surge capability.
- + **Power Assist:** Intelligently combines grid and inverter power to provide up to 7,200W when additional output is needed.
- + **Total System Visibility & Control:** Monitor and manage power in real-time through the intuitive 7" touchscreen.
- + **Precision Power Distribution:** Integrated PDU provides protected 120VAC and 12VDC power with six switchable DC circuits and built-in overcurrent protection.

System Components

- (A) EnergySync 5-in-1 Power Converter
- (B) EnergySync Power Distribution Unit (PDU)
- (C) EnergySync 7" Touchscreen

Not Pictured: EnergySync Mating Connector Kit for Installation

EnergySync 5-In-1 Power Converter Details

- 5,000W Inverter
- 4,500W Charger¹
- 4,200W Alternator Input²
- 1,000W Solar MPPT
- 12V 400W DC Output³



UL 458 & 1741 Certification Pending

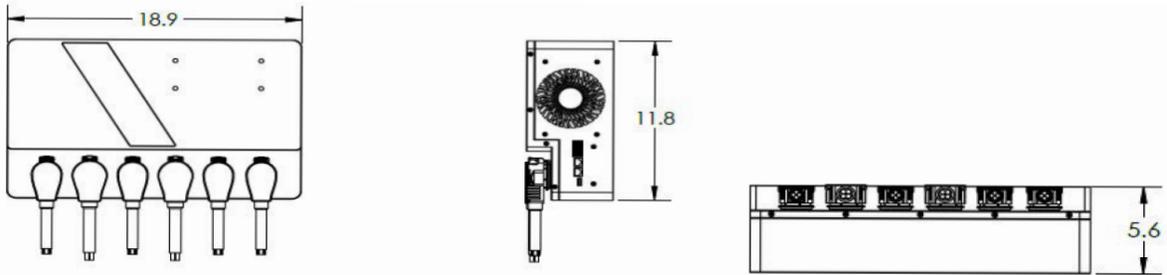
¹ Power measured at 56.25VDC. Lower voltage reduces charge power.

² Alternator input can be connected to any DC power source within the input range.

³ Limited to 400W or 35A, whichever is lower.

DIMENSIONS — 5-IN-1 POWER CONVERTER

Size (L x W x H)	18.9" x 5.5" x 11.8"	480.1mm x 139.7mm x 299.7mm
Weight	39.7lbs	18kg



SPECIFICATIONS — 5-IN-1 POWER CONVERTER

INVERTER OUTPUT

Continuous Power (Inverter Mode)	5,000W
Continuous Power (Power Assist Mode)	7,200W
Maximum Power (Inverter Mode) (60s)	6,000VA
Maximum Surge Power (Inverter Mode) (10s)	10,000VA
Maximum Current (AC)	60A 120VAC, 30A+30A 240VAC (split-phase)
Nominal Voltage (AC)	120/240V split phase (series) or 2x 120V single phase (parallel) ⁴
Transfer Switch Time	10ms (typical), 20ms (max)

ALTERNATOR/AUXILIARY DC INPUT

Input Voltage	12-60V
Input Current	Max 70A
Maximum Input Power	4,200W

BATTERY DC INPUT

Nominal Battery Voltage	51.2V
Battery Voltage Range	40-60V
Maximum Discharge Current	120A
Maximum Discharge Power	5,600W
Parallel BMS Support	1x Lithionics V9 BMS

BATTERY CHARGER

Maximum Charge Current (DC)	80A
Maximum Charge Power (DC)	4,500W ¹

SOLAR MPPT INPUT

Recommended Max Power	1,000W
Range	15-60V DC
Maximum DC Current	30A

DC OUTPUT

Nominal DC Output Voltage	12V
Maximum Power	400W/35A ³

AC INPUT (SHORE POWER)

Continuous Power (Bypass Mode)	7,200W
Nominal Voltage	2x 120V single phase (parallel) or 120/240V split phase (series) ⁴
Maximum Current (Input)	60A 120VAC, 30A+30A 240VAC (Split-Phase)

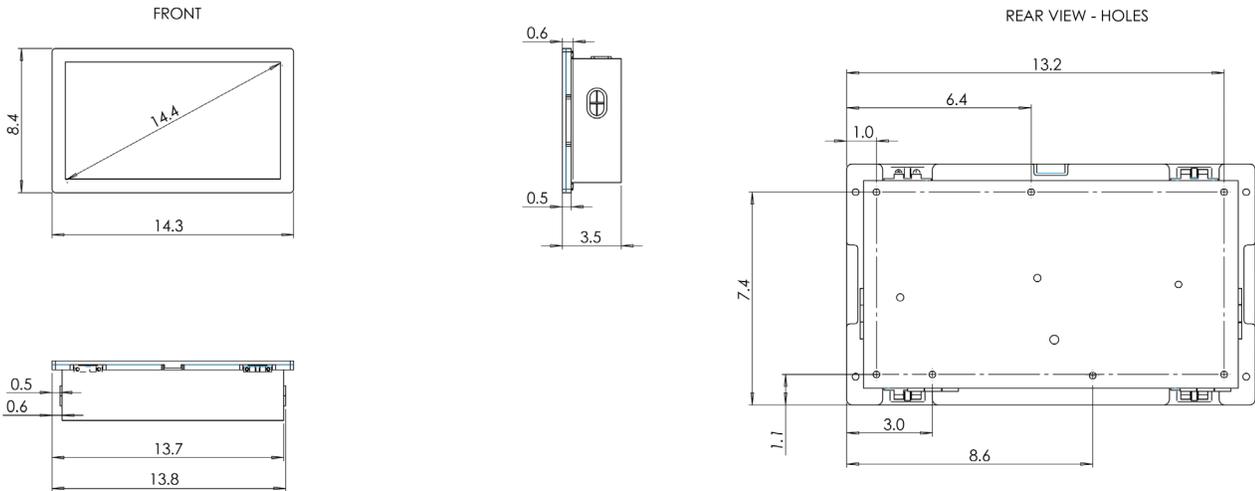
MECHANICAL

Operating Temperature Range	-13°F (-25°C) to 140°F (60°C)
Ingress Protection	IP21M
Noise Emission	<45dB
Cooling	Variable Speed Fan

⁴ Inverter and Input (Shore Power) configuration voltage must match.

DIMENSIONS – POWER DISTRIBUTION UNIT (PDU)

Size (L x W x H)	14.3" x 8.4" x 3.5"	363.0mm x 213.0mm x 89.0mm
Weight	7.7lbs	3.5kg



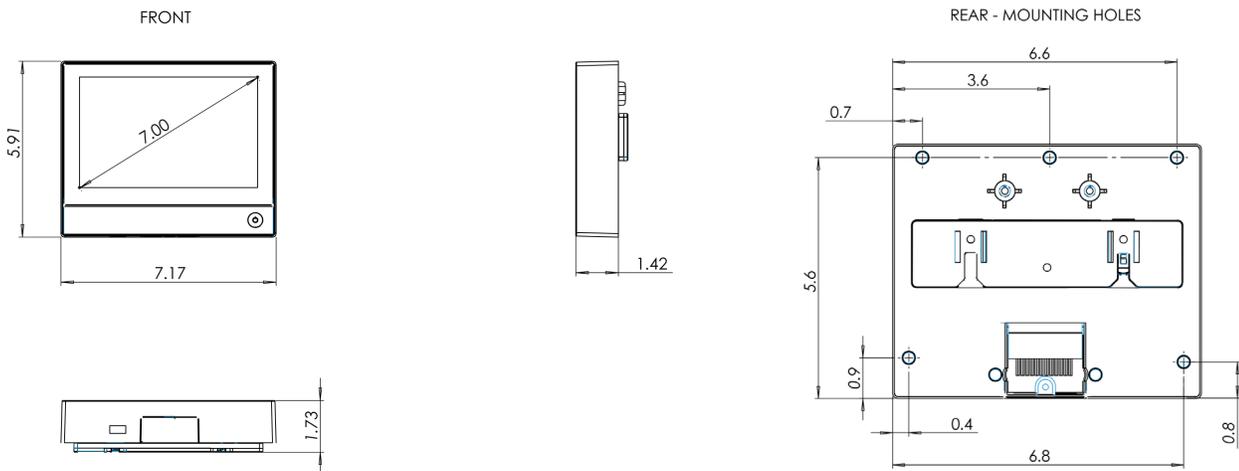
SPECIFICATIONS – POWER DISTRIBUTION UNIT (PDU)

ENERGYSYNC POWER DISTRIBUTION UNIT (PDU)

AC Input	60A 120VAC, 30A+30A 240VAC (split-phase)
DC Input	12VDC, 100A Max
AC Channel Circuit Breaker 3,6	20A
AC Channel Circuit Breaker 1-2, 4-5	15A
DC Channel Fuse 1-6	20A
DC Switchable Channel Fuse 7-10	20A
DC Switchable Channel Fuse 11-12	30A

DIMENSIONS – 7" TOUCH SCREEN

Size (L x W x H)	7.2" x 5.9" x 1.4"	183.0mm x 150.0mm x 36.0mm
Weight	1.5lbs	0.7kg



DS-031

SPECIFICATIONS — 7" TOUCH SCREEN

ENERGYSYNC 7" TOUCH SCREEN

Display	7" LCD touch screen, resolution 1280*800, brightness 500cd/m2, with backlight
Operating Voltage	8-60V DC
Operating Current	400mA (SC 48V)
Operating Temperature	-4°F (-20°C) to 140°F (60°C)
Storage Temperature	-40F (-40°C) to 140°F (60°C)

SPECIFICATIONS — MATING CONNECTORS

MATING CONNECTORS

Number of Connector Kits	6
Length	Connector assembly only, requires cable & crimping for installation ⁵

SPECIFICATIONS — COMMUNICATION

COMMUNICATION

Communication Interface	CANbus 250kb/s
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PROTECTIONS

- AC over-current protection
- AC short-circuit protection
- AC over-voltage protection

⁵ Optional 20ft cable assemblies available to order.

Configured with Confidence

Engineered for reliability. Built for scale. Work with our experts to design the right power system for your application.