catalog

FRESH IDEAS IN POWER

WELCOME TO THE NEW AGE OF POWER

Time to cut the cord

Let the journeys begin

Truck Image: Western Star

Mission

To make alternative energy simple and easy to use.

Vision

To free people from dependence on the utility grid for power.

DIFFERENTIATION

Who is Kisae.

KISAE is a hybrid, a blend of small company passion and drive mixed with category and technology expertise. When you choose any fine KISAE product you're also choosing the company behind that purchase, one with vast electronics experience in the Alternative Energy and Portable Power markets. That expertise is focused on providing you reliable, simple-to-use products that balance impeccable quality with outstanding value.

Purpose

WHY

We look to provide today's mobile society with simple, easy-to-use alternative energy solutions so they can realize a greater level of convenience, productivity, and comfort.

HOW

We realize our purpose by transforming innovative alternative energy ideas into products that are simple and easy to use in off-grid situations.

WHAT

The word KISAE is actually an acronym for 'Keep It Simple Alternative Energy' and serves as the guiding principle behind everything we do as a company.

WHY CHOOSE KISAE

Reasons to believe.

When you choose any KISAE product, you're also choosing the company behind that product. Ours has over 100 years of cumulative electronics experience in the Alternative Energy and Portable Power markets. We focus that expertise on offering you the most reliable and easy-to-use power products we can. With today's mobile society moving faster than ever before, the need to be less reliant on the utility grid has never been greater. KISAE supports this growing movement by providing products, services, and solutions with impeccable quality and outstanding value.

INNOVATIVE SOLUTIONS

KISAE offers products and features that truly benefit people in ways that the market hasn't seen before.

FAST AND AGILE

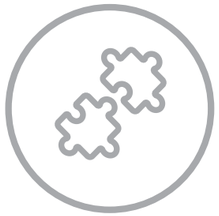
KISAE is a young and agile company, one that's quick to respond to changing customer needs and emerging opportunities.

QUALITY AND CONSISTENCY

KISAE products are designed and tested to ensure they provide years of reliable service to our customers. They are produced in ISO certified factories to meet domestic and international Regulatory approval standards.

RESPONSIVE CUSTOMER SERVICE

We strive every day to deliver satisfaction to our business partners and end users with a quick response time.



EXPERIENCE AND MARKET KNOWLEDGE

The founders and staff of KISAE have launched hundreds of power electronic products. Our high sales volumes proves we know the category like no other.

PATENTED TECHNOLOGIES AND DESIGNS

KISAE holds several patents for our proprietary product designs and technologies.

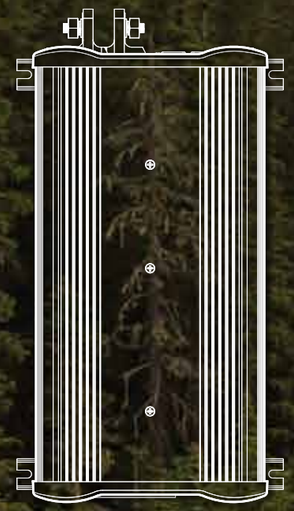
THE COMPANY WE KEEP

Our Markets

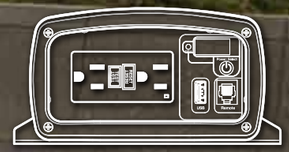
TRUCKING / FLEET UTILITY

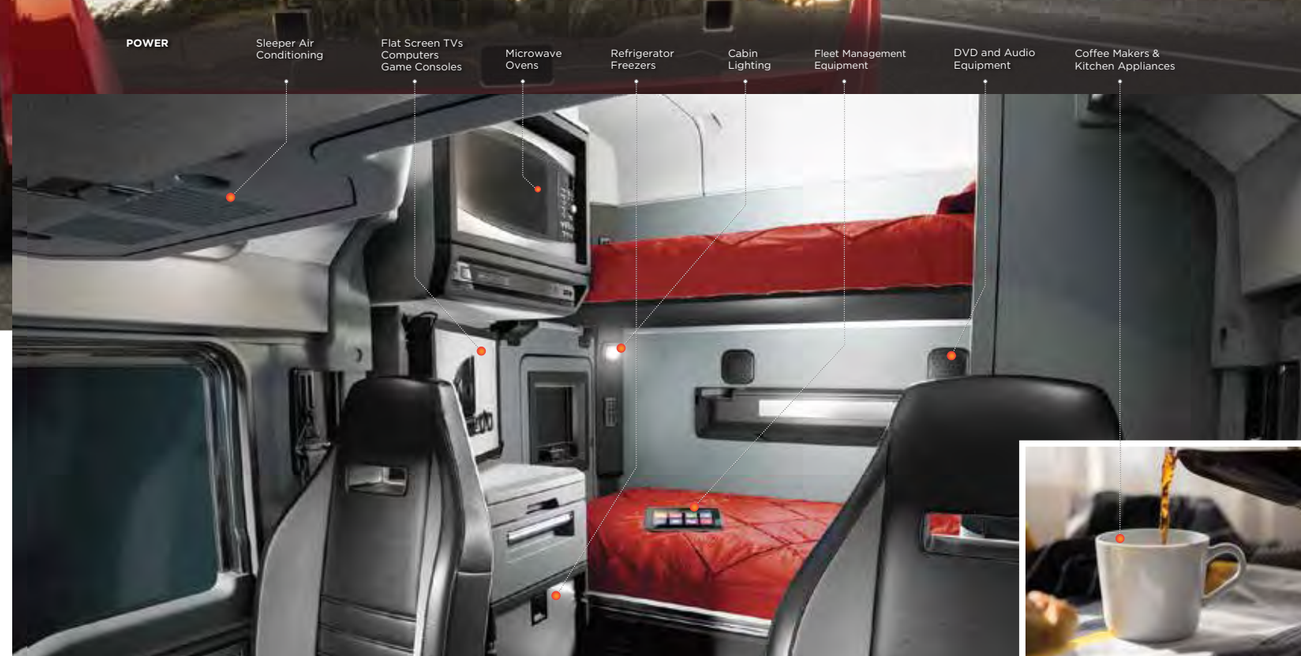
Power for your business.

Power onboard driver comforts during long layovers.



SW1220
See page **29**





TRUCKING / FLEET UTILITY

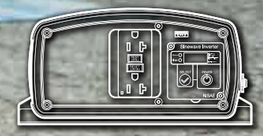
Whether for running power tools in your work truck, or for equipping your heavy-duty truck sleeper with the comforts of home, KISAE has power solutions designed for today's trucker. And after a day on the road, KISAE battery chargers ensure that your house batteries are replenished thoroughly and with a comprehensive battery charge drawing from either utility power or the engine alternator. For work, rest, or play, KISAE power products ensure that truck life is made easier. To learn more, check out our Trucking system install diagram on page **62**.

RV / CARAVAN

Power for your away time.

Feel the warmth of a great getaway with clean, quiet, power from KISAE

SWXFR1220
See page **32**



POWER Water Pumps Kitchen Appliances Cabin & Patio Lighting Air Conditioning Equipment Microwave Ovens Refrigerator Freezers Flat Screen TVs Computers Game Consoles DVD & Audio Equipment

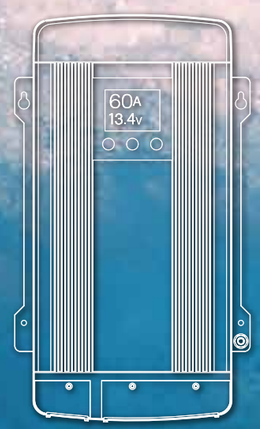
RECREATIONAL VEHICLES & CARAVANS

Prep your RV/Caravan for years of away time with KISAE power inverters. They let you enjoy all the conveniences of home – a computer, TV, a game console, tools or appliances – anywhere, and powered exactly as their manufacturer intended. KISAE power inverters have earned their reputation for quality and dependability, which has made them essential "must haves" for today's power-smart RVer. We offer a wide range of sizes and capabilities, and all our products are Regulatory approved too. To learn about KISAE power inverters for RV/Caravans, see pages **25-32**.

MARINE

Power for your leisure.

Shore up your electrical with power solutions from KISAE.



AC1260
See page **34**

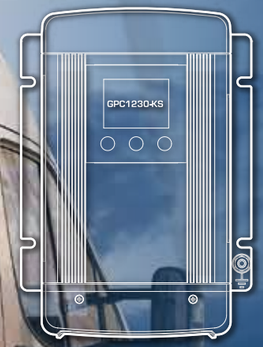
MARINE

Ahoy! Whether dealing with unreliable shore power or when the shore is far away, KISAE power products make your time at sea more enjoyable. Built with rugged marine environments in mind, our power inverters and accessories will power even the most sensitive onboard electronic equipment. And when you return to port, KISAE battery chargers will ensure that your batteries are well taken care of and ready for your next voyage out to sea. Make the most of your time on the water, free from all standing worries about your boat's electrical performance, with reliable power solutions for Marine from KISAE. To learn about KISAE battery chargers, see page **33**.

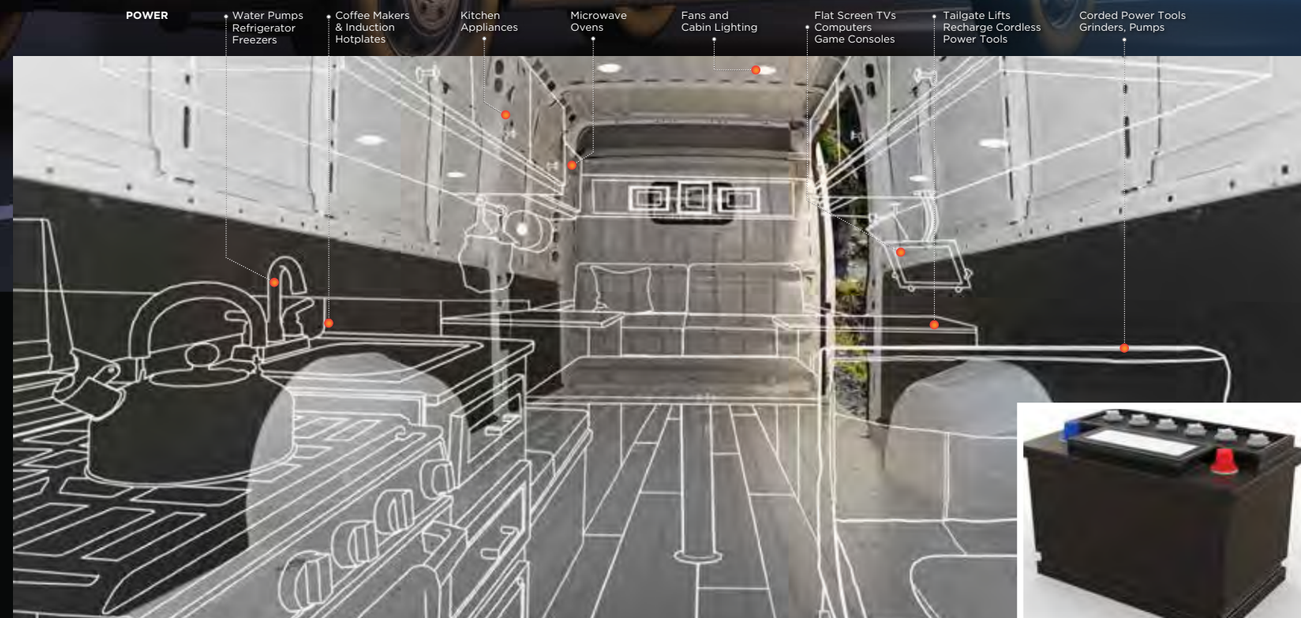
UTILITY VAN CONVERSION

Power for your conversion.

At the job site or the camp site, equip your dream with a charge that's ready to go.



DMT1250
See page **36**



UTILITY VAN CONVERSION

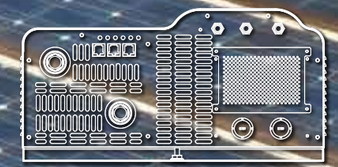
Whether you use your van as a mobile shop for business or as a compact motor home for pleasure, KISAE power products are the hard working power solution for you. Our DC-AC power inverters are the smart choice to run power tools and equipment in the field, plus they can operate appliances to create home comfort anytime, anywhere. And if you have onboard household batteries, what better way to provide them with a proper charge from either a solar panel or while driving via the engine's alternator. To learn more about KISAE power products, see our Products section starting on page **23**.

ALTERNATIVE ENERGY

Power for your solar needs.

Power in places
far and away
from the grid

IC1230150
See page **40**



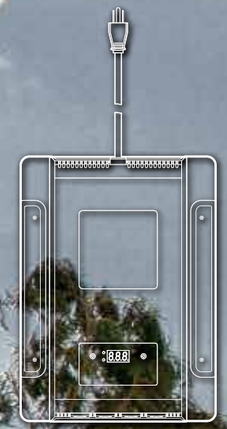
SOLAR AND RURAL ELECTRIFICATION

Over a billion people worldwide are without access to electric power. In off-grid rural areas, in isolated/remote homes & cabins, in developing and emerging countries, these people collectively share a long-standing need for simple, convenient and economical power solutions to improve their quality of life: to run appliances, tools, computers; to power medical equipment, or to recharge essential communications devices in clinics, homes, or schools. Providing reliable power solutions to generate, measure, control, and distribute energy is an integral part of KISAE's foundation for existence. To learn about KISAE home solar, go to pages **41-42**.

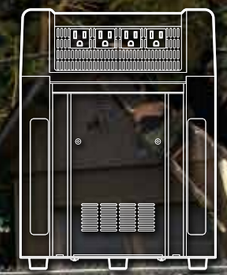
BACK-UP POWER

Power to keep going.

Power your life's essentials during power outages with KISAE.



HS1800
See page **42**



BACK-UP POWER

Severe weather and power outages can happen at any time and without warning. Be ready for anything that comes your way with KISAE back-up power products; they'll help keep your vital home or business applications running when power from the utility grid is disrupted. Making life more comfortable during challenging times is one of the many ways that KISAE is making a difference in the lives of people. To learn more about KISAE's back-up power products, see page **42**.

SIMPLY GOOD STUFF

Our Products

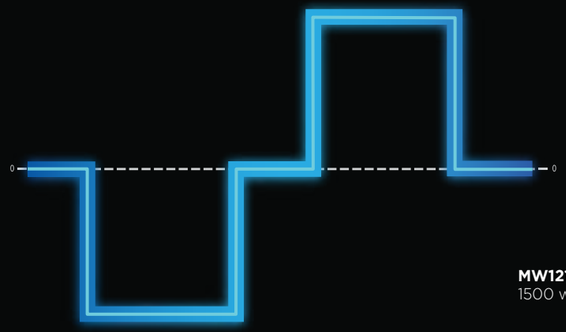
03

A Step in the Right Direction.

Built for the value conscious, KISAE modified sinewave power inverters safely convert 12 volt battery DC power into 120V household AC power.

Our modified sinewave class of power inverters offer an electrically produced or 'stepped' waveform that is ideal for applications where 'load sensitivity' is not a factor.

These sought-after workhorse inverters are as much at home at the jobsite as at the campsite, so when you need economical power in tough situations, look to KISAE. We've got your back, and your backup.



MW series
12V Series
Modified Sinewave Output

Product features:
- Economic Value
- Modified Sinewave Output
- High Start-up Surge
- Available 230V version

	120 VAC SERIES			
	MW 1204	MW 1210	MW 1215	MW 1230 hw
	400 Watts	1000 Watts	1500 Watts	3000 Watts Hardwire version
AC Output				
Power (Continuous)	400W	1000W	1500W	3000W
Power (Peak)	800W	2000W	3000W	6000W
Voltage/Frequency	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 60 Hz
Current	3.3A	8.3A	12.5A	25.0A
Waveform	Modified Sinewave	Modified Sinewave	Modified Sinewave	Modified Sinewave
Peak Efficiency	90%	90%	90%	90%
AC Receptacle	NEMA 5-15 x 2	NEMA 5-15 (GFCI)	NEMA 5-15 (GFCI)	NEMA 5-20 (GFCI, Hardwire)
DC Output 5V USB Output	Not Applicable	2.1A	2.1A	2.1A
DC Input				
Voltage (nominal)	12.5Vdc	12.5Vdc	12.5Vdc	12.5.Vdc
Operation Range	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc
Inverter Standby Current	< 0.3A	< 0.6A	< 0.6A	< 1.2A
Protection				
Input Undervoltage Shutdown	10.5Vdc	10.5Vdc	10.5Vdc	10.5Vdc
Inverter Overvoltage Shutdown	15.5Vdc	15.5Vdc	15.5Vdc	15.5Vdc
Display Panel				
Indicator	Power, Fault	Status	Status	Status
Digital Display (LED)	Not Applicable	Input Voltage, Output Power, Warning & Error Code		
Regulatory Compliance				
Markings	cETLus	cETLus	cETLus	cETLus
Conformance	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards
Available Outlets*				
Enclosure				
Weight	1.6 lbs.	5.3 lbs.	6.9 lbs.	12.8 lbs.
Dimension (LxWxH)	7.0 x 4.2 x 2.1"	12.3 x 6.8 x 3.5"	15.0 x 6.9 x 3.4"	19.2 x 9.0 x 4.5"
Accessory	Light Plug & Battery Clips	Not Applicable	Not Applicable	Not Applicable
Accessory (Optional)				
Remote ON/OFF Switch	Not Applicable	RM1201-00	RM1201-00	Not Applicable

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

***230V versions also available.**

The best waveform for life's necessities.

All electronic equipment is designed to operate on electricity output with a true sine waveform. This waveform is the most reliable type available and is the same waveform the utility companies supply to consumers; its waveform appears graphically as a smooth and consistent wave. KISAE true sinewave inverters offer this same waveform, providing power identical to utility power. Motors connected to any KISAE true sinewave inverter will run at optimal efficiency; audio/video equipment will run with no harmonic distortion; appliances will perform better and run cooler which can lead to longer equipment life.

SW series
24V Series with True Sinewave Output

	120 VAC SERIES			230 VAC SERIES		
	SW 2405	SW 2410	SW 2420	SW 2405i	SW 2410i	SW 2420i
	500 Watts	1000 Watts	2000 Watts	500 Watts	1000 Watts	2000 Watts
Product features: • Pure Sinewave Output Inverters • Great Selection of Power Levels • 24V Battery Input • Regulatory Approved	NEW	NEW	NEW	NEW	NEW	NEW
AC Output						
Power (Continuous)	500W	1000W	2000W	400W	1000W	2000W
Power (Peak)	1000W	2000W	4000W	800W	2000W	4000W
Voltage/Frequency	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 60 Hz	230VAC / 50 Hz	230VAC / 50 Hz	230VAC / 50 Hz
Current	4.2A	8.3A	16.6A	2.17A	4.3A	8.7A
Waveform	True Sine Wave (<3% THD)			True Sine Wave (<3% THD)		
Peak Efficiency	90%	90%	90%	90%	90%	90%
AC Receptacle	NEMA 5-15 GFCI	NEMA 5-15 GFCI	NEMA 5-20 GFCI	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ
DC Output						
5V USB Output	2.1A	2.1A	2.1A	2.1A	2.1A	2.1A
DC Input						
Voltage (nominal)	25Vdc	25Vdc	25Vdc	25Vdc	25Vdc	25Vdc
Operation Range	21 - 31Vdc	21 - 31Vdc	21 - 31Vdc	21 - 31Vdc	21 - 31Vdc	21 - 31Vdc
Current (no load) Power Save OFF	0.5A	0.8A	0.8A	0.5A	0.8A	0.8A
Current (no load) Power Save ON	0.15A	0.3A	0.3A	0.15A	0.3A	0.3A
Protection						
Input Undervoltage Shutdown	21.0Vdc	21.0Vdc	21.0Vdc	21.0Vdc	21.0Vdc	21.0Vdc
Input Undervoltage Recovery	23.6Vdc	23.6Vdc	23.6Vdc	23.6Vdc	23.6Vdc	23.6Vdc
Display Panel						
Indicator	Power, Fault	Status		Power, Fault	Status	
Digital Display (LED)	Not Applicable	Input Voltage, Output Power, Warning & Error Code		Not Applicable	Input Voltage, Output Power, Warning & Error Code	
Ignition Start	Not Applicable	Use Remote Port		Not Applicable	Use Remote Port	
Regulatory Compliance						
Markings	cETLus	cETLus	cETLus	CE, e-Mark	CE, e-Mark	CE, e-Mark
Conformance	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards	LVD, EMC	LVD, EMC	LVD, EMC
Available Outlets						
Enclosure						
Weight	3.8 lbs.	6.0 lbs.	11.5 lbs.	1.7 Kg	2.7 Kg	5.2 Kg
Dimension	7.9 x 5.2 x 3.5"	12.7 x 6.8 x 3.5"	16.5 x 9.1 x 4.4"	200 x 173 x 89mm	322 x 173 x 89mm	418 x 230 x 112mm
Accessory (Optional)						
Remote ON/OFF Switch	Not Applicable	RM1201-00	RM1201-00	Not Applicable	RM1201-00	RM1201-00
Ingnition Start Cable	Not Applicable	ISO1	ISO1	Not Applicable	ISO1	ISO1

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

SW series
12V Series
True Sinewave Output

Product features:	120 VAC SERIES				
• Premium purchase product • Various output voltages • Low harmonic distortion • Ideal for sensitive loads	SL 12 04 400 Watts NEW	SW 12 04 400 Watts	SW 12 06 600 Watts NEW	SW 12 10 1000 Watts	SW 12 20 2000 Watts
AC Output					
Power (Continuous)	400W	400W	600W	1000W	2000W
Power (Peak)	800W	800W	1200W	2000W	4000W
Voltage/Frequency	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 60 Hz
Current	3.3A	3.3A	5.0A	8.3A	16.6A
Waveform	True Sine Wave (<3% THD)	True Sine Wave (<3% THD)	True Sine Wave (<3% THD)	True Sine Wave (<3% THD)	True Sine Wave (<3% THD)
Peak Efficiency	89%	89%	89%	89%	89%
AC Receptacle	NEMA 5-15	NEMA 5-15 (GFCI)	NEMA 5-15 (GFCI)	NEMA 5-15 (GFCI)	NEMA 5-20 (GFCI)
DC Output					
5V USB Output	Not Applicable	2.1A	2.1A	2.1A	2.1A
DC Input					
Voltage (nominal)	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc
Operation Range	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc
Inverter Standby Current	< 0.8A	< 0.8A	< 0.8A	< 1.2A	< 1.2A
Protection					
Input Undervoltage Shutdown	10.5Vdc	10.5Vdc	10.5Vdc	10.5Vdc	10.5Vdc
Inverter Overvoltage Shutdown	15.5Vdc	15.5Vdc	15.5Vdc	15.5Vdc	15.5Vdc
Display Panel					
Indicator	Power / Fault	Power / Fault	Power / Fault	Status	
Digital Display (LED)	Not Applicable	Not Applicable	Not Applicable	Input Voltage, Output Power, Warning, and Error Code	
Ignition Start	Use Ignition Start Port	Not Applicable	Use Ignition Start Port	Use Remote Port	
Regulatory Compliance					
Markings	cETLus	cETLus	cETLus	cETLus	cETLus
Conformance	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards
Available Outlets					
Enclosure					
Weight	3.8 lbs.	4.5 lbs.	6.0 lbs.	6.0 lbs.	11.5 lbs.
Dimension	8.5 x 5.9 x 2.6"	7.9 x 5.2 x 3.5"	9.2 x 6.8 x 3.5"	12.7 x 6.8 x 3.5"	16.5 x 9.1 x 4.4"
Accessory	Lighter Plug and Battery Clips	Lighter Plug and Battery Clips	Not Applicable	Not Applicable	Not Applicable
Accessory (Optional)					
Remote ON/OFF switch	RM1201-00	Not Applicable	RM1201-00	RM1201-00	RM1201-00
Ignition Start Cable	Not Applicable	Not Applicable	Not Applicable	ISO1	ISO1

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

SW series
12V Series
True Sinewave Output

Product features:	230 VAC SERIES				
• Premium Purchase Product • Various Output Voltages • Low Harmonic Distortion • Ideal for sensitive loads	SL 12 04 i 400 Watts NEW	SW 12 04 i 400 Watts	SW 12 06 i 600 Watts NEW	SW 12 10 i 1000 Watts	SW 12 20 i 2000 Watts
AC Output					
Power (Continuous)	400W	400W	600W	1000W	2000W
Power (Peak)	800W	800W	1200W	2000W	4000W
Voltage/Frequency	230VAC / 50 Hz	230VAC / 50 Hz	230VAC / 50 Hz	230VAC / 50 Hz	230VAC / 50 Hz
Current	1.74A	1.74A	2.6A	4.3A	8.7A
Waveform	True Sine Wave (<3% THD)				
Peak Efficiency	89%	89%	89%	89%	89%
AC Receptacle	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ
DC Output					
5V USB Output	Not Applicable	2.1A	2.1A	2.1A	2.1A
DC Input					
Voltage (nominal)	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc
Operation Range	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc
Inverter Standby Current	< 0.8A	< 0.8A	< 0.8A	< 1.2A	< 1.2A
Protection					
Input Undervoltage Shutdown	10.5Vdc	10.5Vdc	10.5Vdc	10.5Vdc	10.5Vdc
Inverter Overvoltage Shutdown	15.5Vdc	15.5Vdc	15.5Vdc	15.5Vdc	15.5Vdc
Display Panel					
Indicator	Power / Fault	Power / Fault	Power / Fault	Status	
Digital Display (LED)	Not Applicable	Not Applicable	Not Applicable	Input Voltage, Output Power, Warning, and Error Code	
Ignition Start	Use Ignition Start Port	Not Applicable	Use Ignition Start Port	Use Remote Port	
Regulatory Compliance					
Markings	CE, e-Mark	CE, e-Mark	CE, e-Mark	CE, e-Mark	CE, e-Mark
Conformance	CE, LVD, EMC Standards	CE, LVD, EMC Standards	CE, LVD, EMC Standards	CE, LVD, EMC Standards	CE, LVD, EMC Standards
Available Outlets					
Enclosure					
Weight	1.1 Kg	1.7 Kg	2.1 Kg	2.7 Kg	5.2 Kg
Dimension	216 x 151 x 65mm	200 x 173 x 89mm	233 x 173 x 89mm	322 x 173 x 89mm	418 x 230 x 112mm
Accessory	Lighter Plug and Battery Clips	Lighter Plug and Battery Clips	Not Applicable	Not Applicable	Not Applicable
Accessory (Optional)					
Remote ON/OFF switch	RM1201-00	Not Applicable	RM1201-00	RM1201-00	RM1201-00
Ignition Start Cable	Not Applicable	Not Applicable	ISO1	ISO1	ISO1

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

Quick as a blink.

Inverters with Transfer Switch: SWXFR Line

These stellar power inverter products provide the ability to automatically switch between shore power as a source and onboard battery power as another. All transfer switch inverter models feature AC hard-wire capability which allows you to directly hard-wire into your boat or RV/caravan's electrical wiring system using a terminal strip.

The integrated transfer switch will seamlessly transfer between power sources in a mere 30 milliseconds, a speed so quick that the during the switch it will not affect or shutdown connected computers, timers, or digital clocks.

SWXFR
series with Transfer Switch

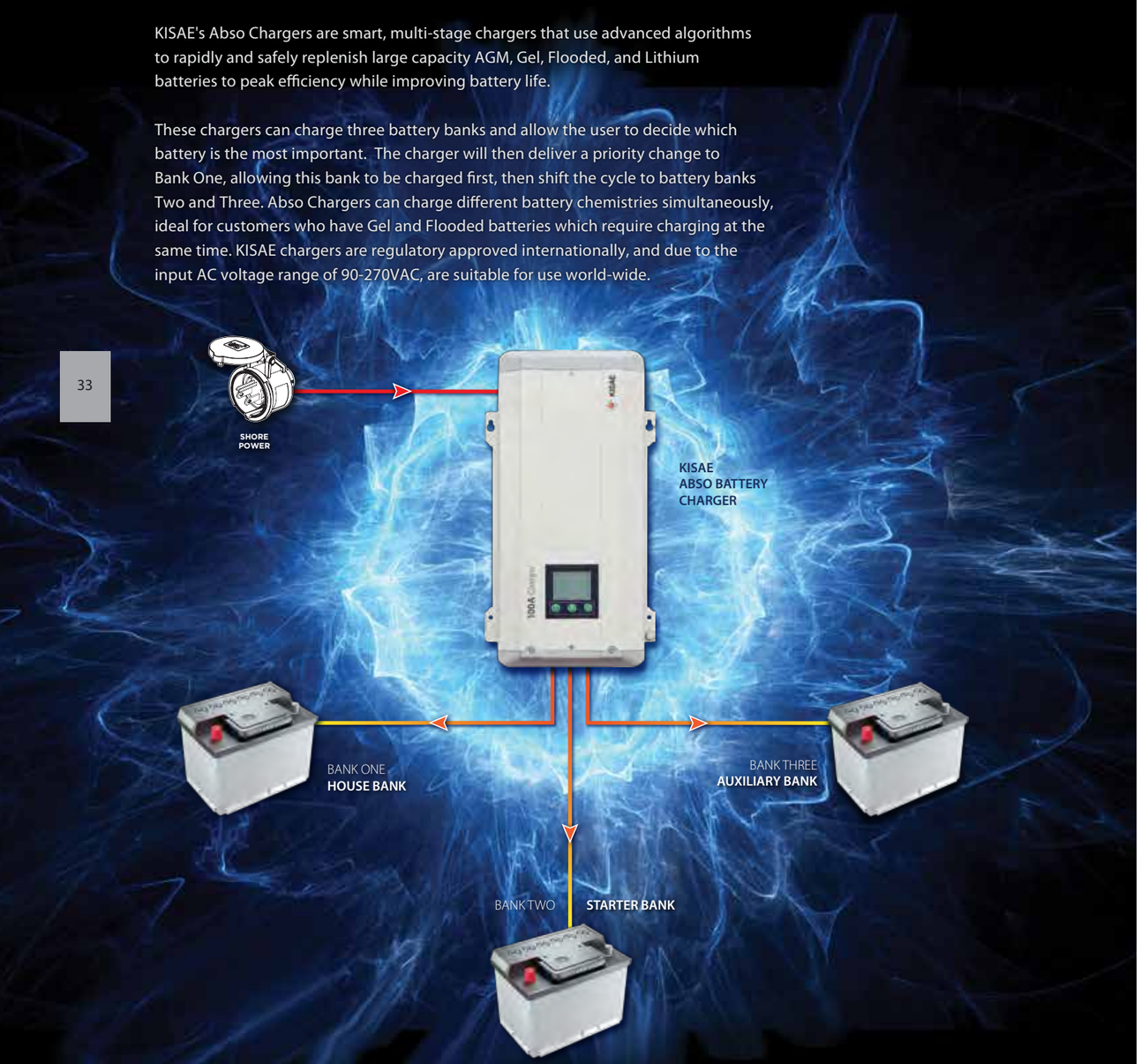
Product features: • True Sinewave output • Auto-transfer from shore power to AC • 30 millisecond transfer time • AC hard-wire capable	120 VAC SERIES			230 VAC SERIES			
	SWXFR 1210	SWXFR 1220	SWXFR 1230	SWXFR 1210i	SWXFR 1220i	SWXFR 1230i	SWXFR 2430i
	1000 Watts	2000 Watts	3000 Watts	1000 Watts	2000 Watts	3000 Watts	3000 Watts NEW
AC Output							
Power (Continuous)	1000W	2000W	3000W	1000W	2000W	3000W	3000W
Power (Peak)	2000W	4000W	6000W	2000W	4000W	6000W	6000W
Voltage/Frequency	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 60 Hz	230VAC / 50 Hz	230VAC / 50 Hz	230VAC / 50 Hz	230VAC / 50 Hz
Current	8.3A	16.6A	25.0A	4.3A	8.7A	13.0A	13.0A
Waveform	True Sine Wave (<3% THD)			True Sine Wave (<3% THD)			
Peak Efficiency	90%	90%	90%	90%	90%	90%	90%
AC Receptacle	NEMA 5-15 GFCI	NEMA 5-20 GFCI	NEMA 5-20 x 2	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ
DC Output							
5V USB Output	2.1A	2.1A	2.1A	2.1A	2.1A	2.1A	2.1A
DC Input							
Voltage (nominal)	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	25Vdc
Operation Range	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	21-31Vdc
Inverter Standby Current	<1.5A	< 1.5A	< 1.5A	< 1.5A	< 1.5A	< 1.5A	< 0.8A
Protection							
Input Undervoltage Shutdown	10.5Vdc	10.5Vdc	10.5Vdc	10.5Vdc	10.5Vdc	10.5Vdc	21.0Vdc
Inverter Overvoltage Shutdown	15.5Vdc	15.5Vdc	15.5Vdc	15.5Vdc	15.5Vdc	15.5Vdc	31.0Vdc
Display Panel							
Indicator	Status			Status			
Digital Display (LED)	Input Voltage, Output Power, Warning, and Error Code			Input Voltage, Output Power, Warning, and Error Code			
AC Transfer Switch							
Transfer Time	<30ms	<30ms	<30ms	<30ms	<30ms	<30ms	<30ms
Transfer Relay Rating	30A	30A	30A	16A	16A	16A	16A
Regulatory Compliance							
Markings	cETLus	cETLus	cETLus	CE., e-Mark	CE., e-Mark	CE., e-Mark	CE., e-Mark
Conformance	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards	LVD, EMC	LVD, EMC	LVD, EMC	LVD, EMC
Available Outlets							
Enclosure							
Weight	11.5 lbs.	13.0 lbs.	15.4 lbs.	4.9 Kg	5.8 Kg	6.9 Kg	6.9 Kg
Dimension	17.3 x 9.1 x 4.5"	17.3 x 9.1 x 4.5"	21.2 x 9.1 x 4.5"	440 x 230 x 115mm	440 x 230 x 115mm	539 x 230 x 115mm	539 x 230 x 115mm
Accessory (Optional)							
Ignition Start Module	ISRM01 (can be used with RM1201-00 for Remote ON/OFF function)						

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

Abso three-bank charging, as simple as 1-2-3.

KISAE's Abso Chargers are smart, multi-stage chargers that use advanced algorithms to rapidly and safely replenish large capacity AGM, Gel, Flooded, and Lithium batteries to peak efficiency while improving battery life.

These chargers can charge three battery banks and allow the user to decide which battery is the most important. The charger will then deliver a priority change to Bank One, allowing this bank to be charged first, then shift the cycle to battery banks Two and Three. Abso Chargers can charge different battery chemistries simultaneously, ideal for customers who have Gel and Flooded batteries which require charging at the same time. KISAE chargers are regulatory approved internationally, and due to the input AC voltage range of 90-270VAC, are suitable for use world-wide.



Depiction of typical 3-bank charging set-up for Marine use.

ABSO series AC-DC Chargers
Multi-Stage Charging

Product features:
- 3-Bank charging
- Selectable battery type
- Maximize battery life
- Microprocessor Controlled

	12V DC SERIES						24V DC SERIES		
	AC 12 05 5 Amps 12 Volt	AC 12 10 10 Amps 12 Volt	AC 12 20 20 Amps 12 Volt	AC 12 40 40 Amps 12 Volt	AC 12 60 60 Amps 12 Volt	AC 12 100 100 Amps 12 Volt	AC 24 20 20 Amps 24 Volt	AC 24 30 30 Amps 24 Volt	AC 24 50 50 Amps 24 Volt
	NEW	NEW				NEW	NEW		NEW
Output Rating									
Output Voltage	12V	12V	12V	12V	12V	12V	24V	24V	24V
Output Current (Maximum)	6A (24V: 3A)	10A (24V: 5A)	20A	40A	60A	100A	20A	30A	50A
DC Output									
Selectable Battery Type	Gel, AGM, Flooded, Lithium, Program						Gel, AGM, Flooded, Lithium, Program		
Charge	14.2 - 15.5V	14.2 - 15.5V	14.2 - 15.5V	14.2 - 15.5V	14.2 - 15.5V	14.2 - 15.5V	28.4 - 31.0V	28.4 - 31.0V	28.4 - 31.0V
Float	13.4 - 13.8V	13.4 - 13.8V	13.4 - 13.8V	13.4 - 13.8V	13.4 - 13.8V	13.4 - 13.8V	28.4 - 31.0V	26.8 - 27.6V	26.8 - 27.6V
Equalize (Flooded Battery Only)	16.0V	16.0V	16.0V	16.0V	16.0V	16.0V	32.0V	32.0V	32.0V
Charging Control	Three/Two Stages	Three / Two Stages	Three / Two Stages, Program				Three / Two Stages, Program		
DC Output Bank	One	One	Three	Three	Three	Three	Three	Three	Three
Parasitic Current	Not Applicable	Not Applicable	< 2mA	< 2mA	< 2mA	< 2mA	< 2mA	< 2mA	< 2mA
AC Input									
Voltage (nominal)	120VAC (i-version: 230VAC)		120, 230, 240VAC	120, 230, 240VAC	120, 230, 240VAC	120, 230, 240VAC	120, 230, 240VAC	120, 230, 240VAC	120, 230, 240VAC
Operation Range	104-130VAC 60Hz (i-version: 208-260VAC 50Hz)		90 - 265VAC	90 - 265VAC	90 - 265VAC	90 - 265VAC	90 - 265VAC	90 - 265VAC	90 - 265VAC
Frequency Range	47 - 63Hz	47 - 63Hz	47 - 63Hz	47 - 63Hz	47 - 63Hz	47 - 63Hz	47 - 63Hz	47 - 63Hz	47 - 63Hz
Power Consumtion (full load)	100W	180W	350W	700W	1050W	1800W	700W	1050W	1800W
Power Factor Correction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Protection									
Reverse Battery	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cooling	Natural Convection	Forced Ventilation	Forced Ventilation				Forced Ventilation		
Output Short Circuit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ingress Protection	IP 65	IP 20	IP 32	IP 32	IP 32	IP 32	IP 32	IP 32	IP 32
Display Panel									
Indicator	LED		LCD with back lighting				LCD with back lighting		
Digital Display (LED)	Not Applicable		Voltage, Current, Status and Error Code				Voltage, Current, Status and Error Code		
Enclosure									
AC Input Connection	AC Input Cord (i-version: Schuko, UK, Australia plug)		Hardwire / AC Input Cord (Schuko, UK, Australia plug)				Hardwire / AC Input Cord (Schuko, UK, Australia plug)		
DC Output Connection	Clip Leads		Heavy Duty Studs				Heavy Duty Studs		
Weight	5.3 lbs./2.4kg	5.3 lbs./2.4kg	5.3 lbs./2.4kg	5.7 lbs./2.6kg	8.8 lbs./4.0kg	14 lbs./6.4kg	5.3 lbs./2.4kg	8.8 lbs./4.0kg.	14 lbs./6.4kg
Dimensions	8.3 x 3.4 x 2.0" (210 x 87 x 50mm)	9.5 x 3.6 x 2.2" (240 x 92 x 55mm)	11.6 x 8.1 x 3.4" (295 x 206 x 86mm)	11.6 x 8.1 x 3.4" (295 x 206 x 86mm)	14.0 x 8.1 x 3.8" (356 x 206 x 96mm)	9.3 x 16.7 x 4" (236 x 425 x 102.7mm)	11.6 x 8.1 x 3.4" (295 x 206 x 86mm)	14.0 x 8.1 x 3.8" (356 x 206 x 96mm)	9.3 x 16.7 x 4" (236 x 425 x 102.7mm)
Accessory (Optional)									
Remote Panel	Not applicable		For viewing unit status, adjusting settings, and for connecting the chargers in parallel						
Battery Temp. Sensor	Not applicable		For battery charging voltage adjustment						

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

You're in Charge.

KISAE DC - DC Battery Chargers

KISAE's new DC-DC battery chargers are the smart alternative for leisure or commercial use. Specifically designed for charging batteries from PV solar or the engine battery when AC household power is unavailable. They provide dual input MPPT Solar input and Auxiliary battery input with maintenance-free protection for your batteries and solar panels. Smart multi-stage charging ensures batteries are charged as recommended by the battery manufacturers, resulting in maximized battery life.

ABSO series

DC-DC Chargers

Alternator or PV Input Chargers

Product features: • Charges from PV panel or alternator • Multi-stage charging • Use with AGM, Gel, Flooded and Lithium batteries	12 VAC SERIES		24 VAC SERIES
	DMT 1230 30 Amps 12 Volt	DMT 1250 50 Amps 12 Volt	NEW DMT 2430 30 Amps 24 Volt
DC Controller Output (Battery)			
Output Current (Maximum)	30A	50A	30A
Output Voltage Range:			
Charge	13.5 - 15.5V	13.5 - 15.5V	27.0 - 31.0V
Float	13.0 - 13.8V	13.0 - 13.8V	26.0 - 27.6V
Equalize	15.5V	15.5V	31.0V
Charging Control	5 stages (Test/Bulk/Absorption/Float/Recharge)	5 stages (Test/Bulk/Absorption/Float/Recharge)	5 stages (Test/Bulk/Absorption/Float/Recharge)
DC Output Bank	One	One	One
Selectable Battery Type	Gel, AGM, Flooded, Lithium, Program	Gel, AGM, Flooded, Lithium, Program	Gel, AGM, Flooded, Lithium, Program
Parasitic Current	< 200 uA	< 200 uA	< 200 uA
Efficiency	> 90%	> 90%	> 90%
DC Input (Battery/Alternator)			
DC Input Range	10.5 - 32Vdc	10.5 - 32Vdc	10.5 - 32Vdc
DC Input Nominal Operation	12.8V for 12V charging system	12.8V for 12V charging system	12.8V for 12V charging system
	25.6V for 24V charging system	25.6V for 24V charging system	25.6V for 24V charging system
Engine Start Control: ON	DC input from Battery/Alternator	DC input from Battery/Alternator	DC input from Battery/Alternator
Engine Start Control: OFF	DC input from PV input (if available)	DC input from PV input (if available)	DC input from PV input (if available)
Maximum Input Current	30A	30A	30A
DC Input (PV Input)			
DC Input Range	10 - 50 Vdc	10 - 50 Vdc	10 - 50 Vdc
DC Input Nominal Operation	17.5Vdc for 12V PV panels connected in parallel	17.5Vdc for 12V PV panels connected in parallel	17.5Vdc for 12V PV panels connected in parallel
	35.0Vdc for dual 12V PV panels connected in series	35.0Vdc for dual 12V PV panels connected in series	35.0Vdc for dual 12V PV panels connected in series
MPPT Tracking Efficiency	> 98%	> 98%	> 98%
DC Output Protection and Features			
Reverse Battery	Yes (shutdown), Auto Reset	Yes (shutdown), Auto Reset	Yes (shutdown), Auto Reset
DC Output Short Circuit	Yes (shutdown), Auto Reset	Yes (shutdown), Auto Reset	Yes (shutdown), Auto Reset
Over Charge	Yes (shutdown), Auto Reset	Yes (shutdown), Auto Reset	Yes (shutdown), Auto Reset
Cooling	Force air ventilation	Force air ventilation	Force air ventilation
Display Panel			
Display	LED Display with back lighting	LED Display with back lighting	LED Display with back lighting
Digital Display	Voltage, Current, Status and Error Code	Voltage, Current, Status and Error Code	Voltage, Current, Status and Error Code
Enclosure			
DC Input Connection	Hardwire	Hardwire	Hardwire
DC Output Connection	Hardwire	Hardwire	Hardwire
Weight	4.1 lbs. (1.85 Kg)	4.1 lbs. (1.85 Kg)	4.1 lbs. (1.85 Kg)
Dimensions	9.5 x 6.8 x 2.9" (242 x 172 x 74mm)	9.5 x 6.8 x 2.9" (242 x 172 x 74mm)	9.5 x 6.8 x 2.9" (242 x 172 x 74mm)
Accessory (Optional)			
Remote Panel	DMT RM01 (For viewing unit status, adjusting settings)		
Battery Temperature Sensor	BTS 10K (For battery charging voltage adjustment)		

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

The Perfect Balance of Power.

KISAE combines its renowned true sinewave DC to AC power inverter technology with its smart battery charger technology, resulting in a perfect balance of power in a lightweight and compact package.

KISAE inverter-chargers are the most sophisticated on the market today. Their dual functionality offers optimal performance in use, providing true sinewave DC to AC output when on the water, and intelligent multi-stage charging when at the shore. Patented multi-stage charge technology gives your onboard batteries a perfect, accurate charge quicker and delivers a battery that's ready to use again sooner.

Get the best of both worlds and the perfect balance of power... with KISAE.

True Sinewave Power Inverter
converts 12V DC battery power into household AC power the same or better than what the utility company can provide.

Multi-Stage Battery Charger
provides 3-stage charging to bring the battery up to full charge quickly and efficiently

IC - HF
High Frequency Inverter-Chargers

Product features:
- Multi-stage charging
- Built-in transfer switch
- True sinewave output

	120 VAC SERIES				230 VAC SERIES			
	IC 1210 40 1000 Watts 40 Amps	IC 1220 55 2000 Watts 55 Amps	BIC 1220 80 2000 Watts 80 Amps NEW	BIC 1230 100 3000 Watts 100 Amps NEW	IC 1210 40 i 1000 Watts 40 Amps	IC 1220 55 i 2000 Watts 55 Amps	BIC 1220 80 i 2000 Watts 80 Amps NEW	BIC 1230 100 i 3000 Watts 100 Amps NEW
AC Output								
Power (Continuous)	1000W	2000W	2000W	3000W	1000W	2000W	2000W	3000W
Power (Peak)	2000W	4000W	4000W	6000W	2000W	4000W	4000W	6000W
Voltage/Frequency	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 50Hz / 60Hz	120VAC / 50Hz /60Hz	230VAC / 50 Hz	230VAC / 50 Hz	230VAC / 50Hz /60Hz	230VAC / 50Hz /60Hz
Current	8.3A	16.6A	16.6A	25.0A	4.3A	8.7A	8.7A	13.0A
Waveform	True Sine Wave (<3% THD)				True Sine Wave (<3% THD)			
Peak Efficiency	90%	90%	90%	90%	90%	90%	90%	90%
AC Receptacle	NEMA 5-15 GFCI	NEMA 5-20 GFCI	NEMA 5-20 GFCI	NEMA 5-20 GFCI	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ
DC Output								
5V USB Output	2.1Vdc	2.1Vdc	Not Applicable	Not Applicable	2.1Vdc	2.1Vdc	Not Applicable	Not Applicable
DC Input								
Voltage (nominal)	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc	12.5Vdc
Operation Range	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc	10.5 - 15.5Vdc
Inverter Standby Current	< 1.5A	< 1.5A	< 1.5A	< 1.5A	< 1.5A	< 1.5A	< 1.5A	< 1.5A
Protection								
Input Undervoltage Shutdown	10.5/11.0Vdc	10.5/11.0Vdc	10.5/12.0Vdc	10.5/12.0Vdc	10.5/11.0Vdc	10.5/11.0Vdc	10.5/12.0Vdc	10.5/12.0Vdc
Inverter Overvoltage Shutdown	15.5Vdc	15.5Vdc	17.0Vdc	17.0Vdc	15.5Vdc	15.5Vdc	17.0Vdc	17.0Vdc
Display Panel								
Indicator	Status				Status			
Digital Display (LED)	Input Voltage, Output Power, Warning, Error Code		Not Applicable	Not Applicable	Input Voltage, Output Power, Warning, Error Code		Not Applicable	Not Applicable
Battery Charger								
Charger Voltage Range	13.5 - 14.4V	13.5 - 14.4V	13.5 - 14.8V	13.5 - 14.8V	13.5 - 14.4V	13.5 - 14.4V	13.5 - 14.8V	13.5 - 14.8V
Float Voltage Range	13.4 - 13.8V	13.4 - 13.8V	13.0 - 14.4V	13.0 - 14.4V	13.4 - 13.8V	13.4 - 13.8V	13.0 - 14.4V	13.0 - 14.4V
Charger Current	40A	55A	80A	100A	40A	55A	80A	100A
Charger Battery Type	Gel, Flooded, AGM, Lithium, Fixed Power Supply				Gel, Flooded, AGM, Lithium, Program, Fixed Power Supply			
AC Input Voltage/Frequency	120VAC / 60Hz	120VAC / 60Hz	120VAC / 50Hz / 60Hz	120VAC / 50Hz / 60Hz	230VAC / 50Hz	230VAC / 50Hz	230VAC / 50Hz /60Hz	230VAC / 50Hz /60Hz
AC Transfer Switch								
Transfer Time	<30ms	<30ms	<30ms	<30ms	<30ms	<30ms	<30ms	<30ms
Transfer Relay Rating	30A	30A	30A	30A	16A	16A	16A	16A
Regulatory Compliance								
Markings	cETLus	cETLus	cETLus	cETLus	CE, e-Mark	CE, e-Mark	CE, e-Mark	CE, e-Mark
Conformance	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards	LVD, EMC	LVD, EMC	LVD, EMC	LVD, EMC
Available Outlets								
Enclosure								
Weight	12.5 lbs.	14.5 lbs.	22.8 lbs.	23.8 lbs.	5.7 Kg	6.6 Kg	10.8 Kg	10.8 Kg
Dimension	18.8 x 9.1 x 4.6"	18.8 x 9.1 x 4.6"	17.8 x 12.0 x 4.1"	17.8 x 12.0 x 4.1"	478 x 230 x 114mm	478 x 230 x 114mm	450 x 305 x 105mm	450 x 305 x 105mm
Accessory (Optional)								
Ignition Start Module	ISRM01	ISRM01	Not Applicable	Not Applicable	ISRM01	ISRM01	Not Applicable	Not Applicable
Digital Remote Panel	Not Applicable	Not Applicable	DR1201	DR1201	Not Applicable	Not Applicable	DR1201	DR1201

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

Introducing KISAE's new dynamic duo.

NEW PRODUCT: Bi-Directional Inverter-Charger

KISAE proudly introduces the new BIC line of inverter-chargers. These premium performance, high frequency inverter-chargers possess exciting new features including: higher surge power rating to start difficult loads; ignition control to minimize battery drain by turning the inverter off automatically when the vehicle ignition key is turned to OFF; and numerous programmable settings for various battery inputs (including Lithium batteries) and protection features.

Featuring high output battery chargers and KISAE's proven expertise in high frequency switching electronics design, the BIC inverter-chargers set new standards for today's modern boater, RV'er and trucker.

Welcome to a new age of power for leisure and commercial needs.

IC - LF

Low Frequency Inverter-Chargers

Product features: • Low frequency design • True sinewave output • Multi-stage charging • Regulatory approved	120 VAC SERIES		230 VAC SERIES	
	IC 1220100 2000 Watts 100 Amps	IC 1230150 3000 Watts 150 Amps	IC 1230150i 3000 Watts 150 Amps	IC 2440090i 3500 Watts 90 Amps
				
AC Output				
Power (Continuous)	2000W	3000W	3000W	3500W
Power (Peak)	4000W	6000W	6000W	7000W
Voltage/Frequency	120VAC / 60 Hz	120VAC / 60 Hz	230VAC / 50 Hz	230VAC / 50 Hz
Current	17A	25A	13.0A	15.2A
Waveform	True Sine Wave (<3% THD)		True Sine Wave (<3% THD)	
Peak Efficiency	90%	90%	90%	90%
DC Output				
5V USB Output	2.1Vdc	2.1Vdc	2.1Vdc	2.1Vdc
DC Input				
Voltage (nominal)	12.5Vdc	12.5Vdc	12.5Vdc	25.0Vdc
Operation Range	10.5 - 16.5Vdc	10.5 - 16.5Vdc	10.5 - 16.5Vdc	21.0 - 33.0Vdc
Inverter Standby Current	< 3.5A	< 3.5A	< 3.5A	< 2.5A
Protection				
Input Undervoltage Shutdown	10.5Vdc	10.5Vdc	10.5Vdc	21.0Vdc
Inverter Overvoltage Shutdown	16.5Vdc	16.5Vdc	16.5Vdc	33.0Vdc
Display Panel				
Indicator	Battery Power, Charging, Fault		Battery Power, Charging, Fault	
Battery Charger				
Charger Voltage Range	14.2 - 16.0Vdc	14.2 - 16.0V	14.2 - 15.5V	28.4 - 32.0V
Float Voltage Range	13.4 - 13.8Vdc	13.4 - 13.8V	13.4 - 13.8V	26.8 - 127.6V
Charger Current	100A	150A	150A	90A
Charger Battery Type	Gel, Flooded, AGM		Gel, Flooded, AGM	
AC Input Voltage/Frequency	120VAC / 60Hz	120VAC / 60Hz	230VAC / 50Hz	230VAC / 50Hz
AC Transfer Switch				
Transfer Time	< 20ms	< 20ms	< 20ms	< 20ms
Transfer Relay Rating	30A	30A	20A	20A
Regulatory Compliance				
Markings	cETLus	cETLus	CE	CE
Conformance	UL & CSA Standards	UL & CSA Standards	LVD, EMC	LVD, EMC
Available Outlets				
Enclosure				
Weight	51.9 lbs.	66.4 lbs.	30.2 Kg	30.2 Kg
Dimension	15.4 x 13.4 x 7.8"	15.4 x 13.4 x 7.8"	392 x 340 x 197mm	392 x 340 x 197mm
Accessory (Optional)				
Ignition Start Cable	ISRM01 (can be used with RM1201-00 for Remote ON/OFF function)			

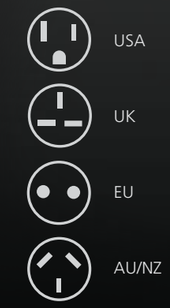
To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

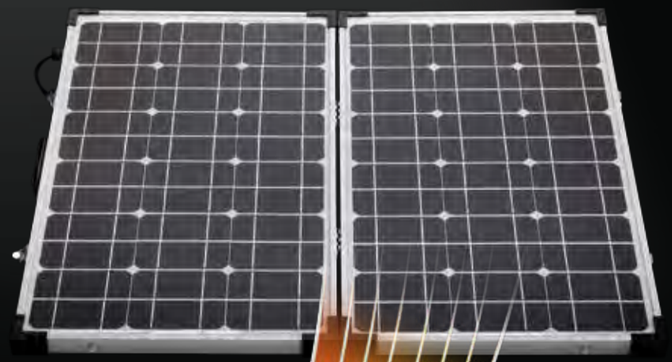
Plug-n-Play Power... made from the sun.

Always *THE* source for modern, intelligent power solutions, KISAE's Home Solar Kits are a complete line of backup power products. Each features everything needed in one smart little package, and offers emergency relief during power outages.

The unit consists of a DC-AC power inverter, a battery, AC charger, a solar charge controller, plus all the connectors necessary for a separate PV panel. Batteries can be simply and easily recharged from either utility or solar power. Extra batteries can be added to the kit to extend usage time (1800W model only). Safe for indoor use with no fuel requirements; completely silent operation with no fumes or emissions.

Available AC Outlets





Available 120V and 230V Versions

PV Panel (available for 1800W model) draws power from the sun to recharge internal batteries or recharge from utility power.

Modular Design allows for additional battery capacity to be incorporated (1800W model only).

HS series
Home Solar Kits

Product features: • Plug-n-play solar power • Reliable back-up power • Safe for indoor use	120 VAC SERIES			230 VAC SERIES		
	HS 400	HS 800	HS 1800	HS 400i	HS 800i	HS 1800i
	400 Watts	800 Watts	1800 Watts	400 Watts	800 Watts	1800 Watts
AC Output						
AC Output Power (Continuous)	400W	800W	1800W	400W	800W	1800W
AC Output Power (Peak)	800W	1600W	3600W	800W	1600W	3600W
AC Output Voltage/Frequency	120VAC / 60 Hz	120VAC / 60 Hz	120VAC / 60 Hz	230VAC / 50 Hz	230VAC / 50 Hz	230VAC / 50 Hz
AC Output Current	3.3A	6.7A	15.0A	1.7A	3.5A	7.8A
AC Output Waveform	Modified Sine Wave	Modified Sine Wave	Modified Sine Wave	Modified Sine Wave	Modified Sine Wave	Modified Sine Wave
Peak Efficiency	90%	90%	90%	90%	90%	90%
AC Output Socket	NEMA 5-15 x 2	NEMA 5-15 x 2	NEMA 5-15 x 4	UK, EU, AU/NZ	UK, EU, AU/NZ	UK, EU, AU/NZ x 2
DC Output						
USB Output	750mA	750mA	Not Applicable	750mA	750mA	Not Applicable
12V DC Lighter Socket	15A	15A	Not Applicable	15A	15A	Not Applicable
AC Charger (built-in)						
Charger Current	2A	2A	5A	2A	2A	5A
AC Input Voltage / Frequency	120Vac / 60Hz	120Vac / 60Hz	120Vac / 60Hz	230Vac / 50 Hz	230Vac / 50 Hz	230Vac / 50 Hz
AC Transfer Switch						
Transfer Time	< 30ms	< 30ms	< 30ms	< 30ms	< 30ms	< 30ms
Transfer Relay Rating	10A	10A	15A	5A	10A	10A
Display Panel						
Indicator	Status					
Digital Display (LED)	Input Voltage, Output Power, Warning, and Error Code					
Solar Charger (built-in)						
Input Current	8A DC Maximum	8A DC Maximum	8A DC Maximum	8A DC Maximum	8A DC Maximum	8A DC Maximum
Charger Stages	Three-Stages	Three-Stages	Three-Stages	Three-Stages	Three-Stages	Three-Stages
Maximum Input Voltage	26V DC	26V DC	26V DC	26V DC	26V DC	26V DC
Battery						
Type	Deep Cycle Sealed Lead Acid					
Capacity	12V 34Ah	12C 40Ah	12V 60Ah	12V 34Ah	12V 40Ah	12V 60Ah
Regulatory Compliance						
Markings	cETLus	cETLus	cETLus	CE	CE	CE
Conformance	UL & CSA Standards	UL & CSA Standards	UL & CSA Standards	LVD, EMC	LVD, EMC	LVD, EMC
Enclosure						
Weight	31 lbs.	34.3 lbs.	76 lbs.	14.1 Kg	15.6 Kg	35.4 Kg
Dimensions	10.5 x 6.2 x 10.0"	10.5 x 6.2 x 10.0"	14.5 x 10.5 x 14.0"	270 x 160 x 260mm	270 x 160 x 260mm	365 x 370 x 355mm
Solar Panel (can be included with HS1800)						
Peak Power (Pmax)	80W (2 x 40W) Monocrystalline					
Voltage (Vmp)	17.5VDC					
Open Circuit Voltage (VOC)	21VDC					
Current (Imp)	2 x 2.29A					

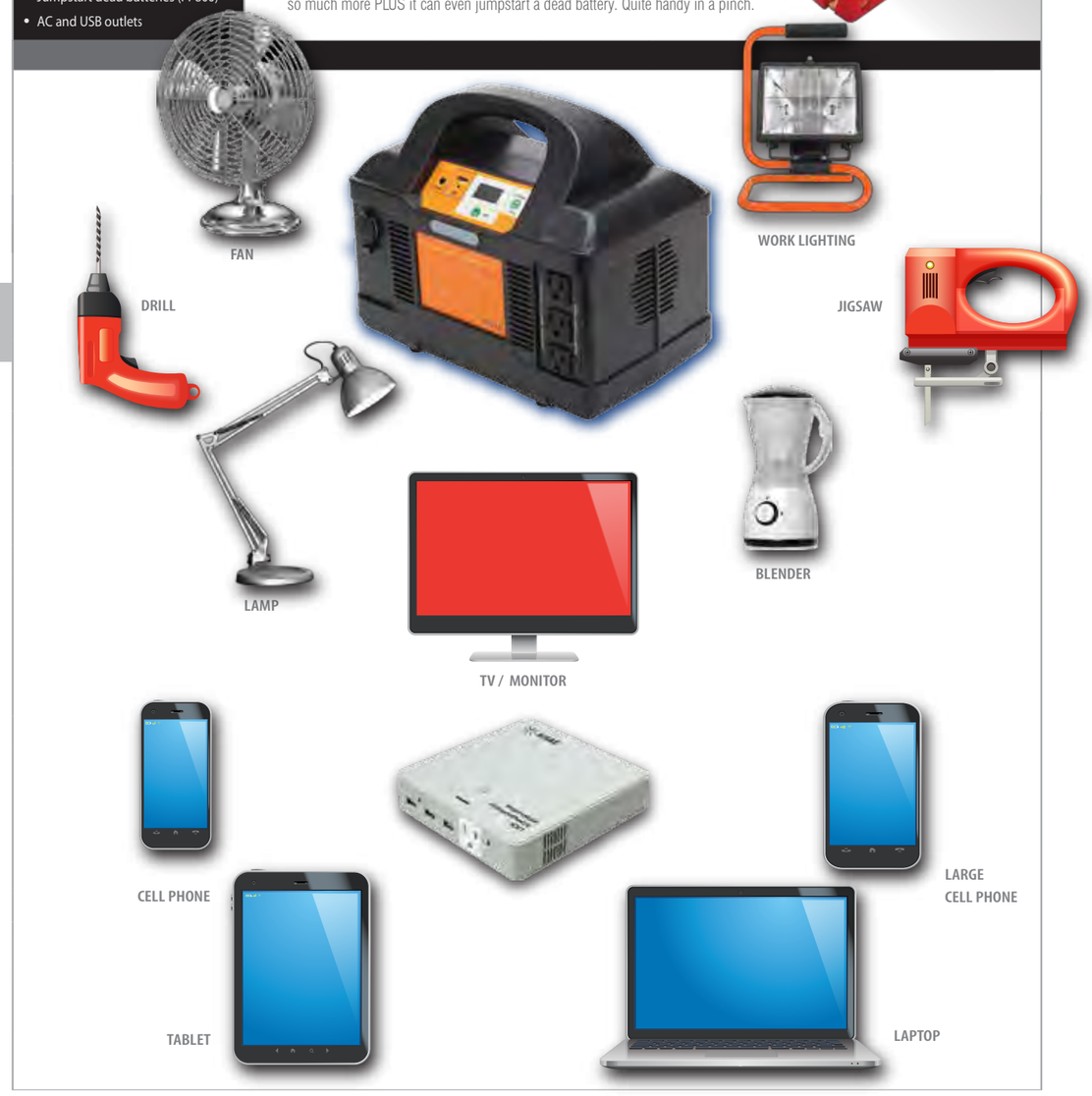
To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

PP series
Portable Power Solutions

Product benefits:
- Handy power you can take with you
- Run AC powered devices anywhere
- Jumpstart dead batteries (PP800)
- AC and USB outlets

PORTABLE POWER TO GO

Portable power solutions are designed for people on the go who need power for around the home, campsite or jobsite. KISAE offers two portable power product models to serve your mobile power needs: the Lithium battery-based Portable Powerpack 100, providing 100W of portable power for laptops and mobile devices, and the sealed lead-acid based Powerpack 800, an 800W power source ideal for running handheld power tools, TVs, lights, computers, appliances and so much more PLUS it can even jumpstart a dead battery. Quite handy in a pinch.



To download the owner's manual for any product of interest, go to **KISAEPOWER.com/downloads**

PP series
Portable Power Solutions

Product benefits:
- Handy power you can take with you
- Run AC powered devices anywhere
- Jumpstarts dead batteries (PP800)
- AC and USB outlets

	120 VAC SERIES		230 VAC SERIES
	PP 100 Lithium PowerPack 100 Watts	PP 800 PowerPack 800 Watts	PP 800i PowerPack 230V 800 Watts
			
AC Output			
Output Power	90W	800W	800W
Surge Power (Peak)	100W	1600W	1600W
Output Voltage/Frequency	120VAC / 60 Hz	120VAC / 60 Hz	230VAC / 50 Hz
Waveform	Modified Sine Wave	Modified Sine Wave	Modified Sine Wave
AC Receptacles	NEMA 5-15	NEMA 5-15 x 3	UK, EU, AU/NZ
DC Output			
USB Port	1.0A, 2.1A x 2	2.1A x 1	2.1A x 1
Lighter Plug Socket	Not Applicable	15A	15A
Display Panel			
Indicator	Power, Fault		
Digital Display (LED)	Not Applicable	Battery Voltage, Output Power, Warning, and Error Code	
Light	Not Applicable	Ultra Bright White LEDs	
Battery			
Type	Lithium Polymer	Sealed Lead Acid	
Capacity	90.7 Wh	312Wh, 12V 26Ah	
Regulatory Compliance			
Markings	cETLus	cETLus	CE
Conformance	UL & CSA Standards	UL & CSA Standards	LVD, EMC
Available Outlets			
Enclosure			
Weight	1.65 lbs.	28 lbs.	12.7 Kg
Dimensions	6.4 x 6 x 1.4"	12.8 x 7.6 x 10.2"	324 x 193 x 260mm
Accessories			
External AC Charger	15V / 1A	15V / 2A	
DC Charging Cable	Not Applicable	Lighter Plug Cable	
Jump Start Cables	Not Applicable	Heavy Duty Jump Start Cable	

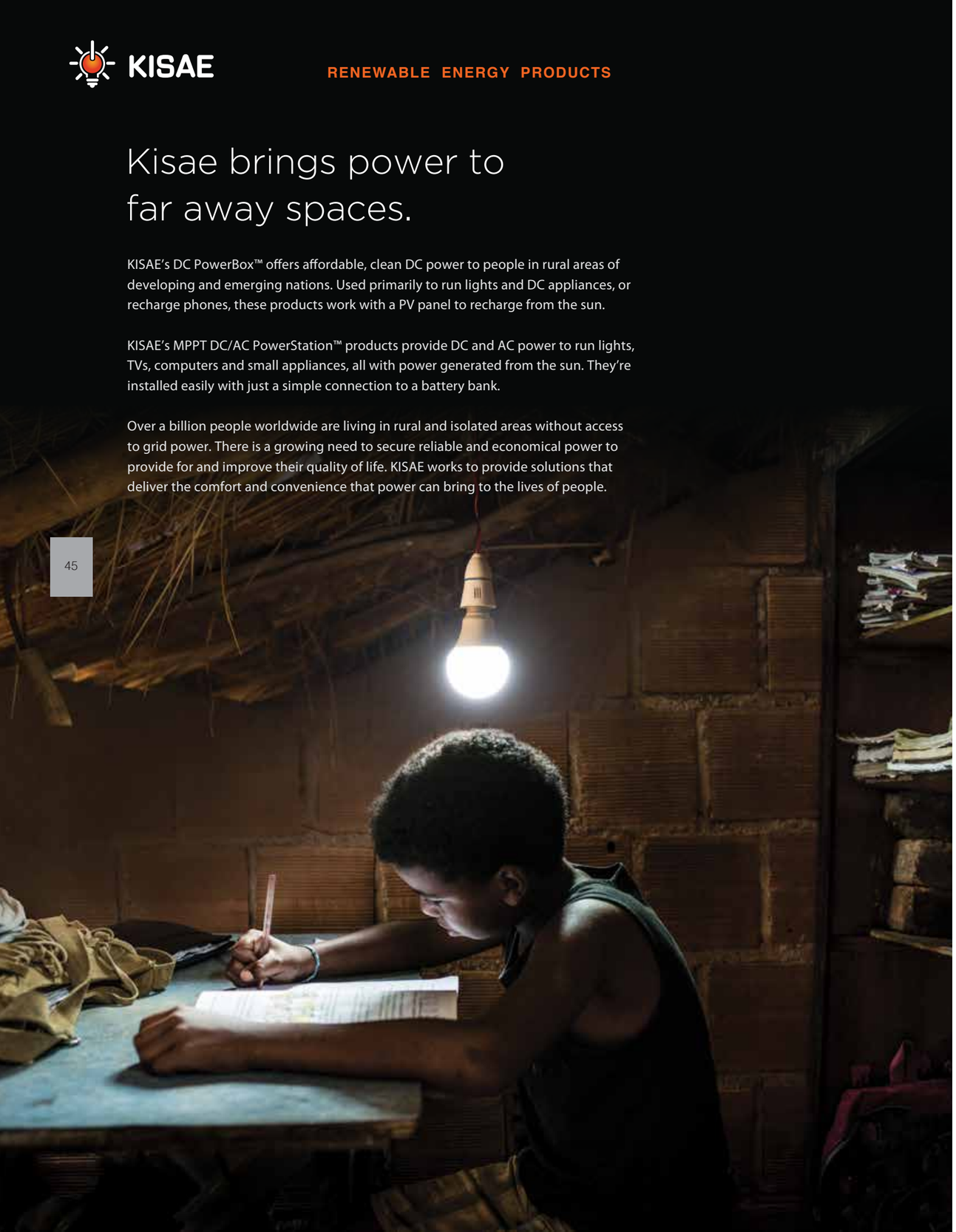
To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

Kisae brings power to far away spaces.

KISAE's DC PowerBox™ offers affordable, clean DC power to people in rural areas of developing and emerging nations. Used primarily to run lights and DC appliances, or recharge phones, these products work with a PV panel to recharge from the sun.

KISAE's MPPT DC/AC PowerStation™ products provide DC and AC power to run lights, TVs, computers and small appliances, all with power generated from the sun. They're installed easily with just a simple connection to a battery bank.

Over a billion people worldwide are living in rural and isolated areas without access to grid power. There is a growing need to secure reliable and economical power to provide for and improve their quality of life. KISAE works to provide solutions that deliver the comfort and convenience that power can bring to the lives of people.



SOLAR power solutions

KISAE Power Stations

Product features:

- Ready power, even when no utility power is available
- Indefinite recharge via the sun
- Safe for indoor use; no fumes or noise

	PWM SERIES	MPPT SERIES	
	PowerBox 80 DC 80 Watts	PowerStation 800 DC/AC 800 Watts	PowerStation 1200 DC 800 Watts
Solar Controller			
Charge Controller	Pulse Width Modulation (PWM)	Maximum Power Point Tracking (MPPT)	Maximum Power Point Tracking (MPPT)
Maximum PV Voltage	29.0 Vdc	48 Vdc	48 Vdc
Maximum PV Current	10A	40A	80A
Input Voltage Range	16 - 26Vdc	14.5 - 48Vdc	14.5 - 48Vdc
Maximum Input Power	160W	960W	1920W
Nominal DC Output	12 Vdc	N/A	N/A
Parasitic Current	< 10mA	< 0.2A	< 0.5A
MPPT Efficiency	Not Applicable	93%	93%
PV Connector Type	MC4 (1 set)	MC4 (2 sets)	MC4 (4 sets)
Bulk Charge Voltage	14.7V @ 25C (2.45V / cell @ 25C)	29.4V @ 25C (2.45V / cell @ 25C)	29.4V @ 25C (2.45V / cell @ 25C)
Float Voltage	13.6V @ 25C (2.27V / cell @ 25C)	27.2V @ 25C (2.27V / cell @ 25C)	27.2V @ 25C (2.27V / cell @ 25C)
DC to AC Inverter			
AC Output Voltage	Not Applicable	120 VAC or 230 VAC	120 VAC or 230 VAC
AC Output Power rating	Not Applicable	800VAC continuous	1200VA continuous
AC Output Frequency	Not Applicable	60 Hz for 120VAC, 50 Hz for 230VAC	60 Hz for 120VAC, 50 Hz for 230VAC
AC Output Type	Not Applicable	True Sinewave (THD <5%)	True Sinewave (THD <5%)
AC Output Socket	Not Applicable	120VAC: NEMA 5-15 AC Socket x 2 230VAC: EU/UK/AU AC Socket	120VAC: NEMA 5-15 AC Socket x 2 230VAC: EU/UK/AU AC Socket
USB Output			
'1.5A'	5V, 1.5 A	Not Applicable	Not Applicable
DC Connection			
DC 1,2	12V 1A Max. (ID 5.5 - 2.1 mm)		
DC 3	12V 3A Max. (ID 5.5 - 2.1 mm)	Single Anderson SB120 (120A Max.)	Single Anderson SB120 (120A Max.)
DC 4	12V 10A Max. (Anderson - PP15)	Connection between Main Unit and Battery Rack	Connection between Main Unit and Battery Rack
DC 5	12V 10A Max. (Lighter Socket)		
Battery Temperature Sensor			
Temp. Sensor Connection	Built-in	External (for Battery Bank Connection)	External (for Battery Bank Connection)
Connector Type	Not Applicable	Round DC Connector: ID 5.5 - 2.1mm	Round DC Connector: ID 5.5 - 2.1mm
Battery			
Battery System Voltage	12V DC System	24V DC System	24V DC System
		180Ah C100	360Ah C100
Battery Capacity	Single 12V, 80Ah C20	2V, 180Ah C100 x 12 pcs connect in series	2V, 360Ah C100 x 12 pcs connect in series
Battery Type	Silicon / Crystal Sealed Lead Acid	Silicon / Crystal Sealed Lead Acid	Silicon / Crystal Sealed Lead Acid
Enclosure & Safety			
Battery Unit Rack Dimensions	Not Applicable	16.3 x 13.0 x 10.7" (414 x 345 x 272mm)	28.3 x 7.9 x 11.8" (720 x 200 x 300mm)
Regulatory Approval	CE	120V models: cETLus, 230V models: CE	120V models: cETLus, 230V models: CE
Available Outlets		120V 	230V 

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

Optimal Performance from your PV Panels and Batteries

KISAE Solar Charge Controllers

Whether installing a charge controller for your own off-grid vacation home or for an industrial solar array installation, KISAE Solar Charge Controllers provide maintenance-free protection for your batteries and solar panels in off-grid applications. These controllers provide a regulated output to prevent batteries from overcharging, while the Load Disconnect feature protects batteries from being over-discharged. KISAE Charge Controllers have LED status indicators to provide a quick reference to Charger, Battery and Load status.

PWM series Solar Charge Controllers

Product features: • Optimizes the solar charge • MPPT designs • LED digital displays • Maintains batteries in charged state	SC 12 10 LD 10 Amps 12 Volt	SC 12 20 LD 20 Amps 12 Volt	SCD 12 30 30 Amps 12 Volt
			
PV Input			
PV Input Voltage Range	14.5 - 24V	14.5 - 24V	14.5 - 48V
Maximum PV Input Current	10A	20A	30A
PV Solar Panel Rating (reference)	120W	240W	12V: 360W, 24V: 720W
Solar Controller Output (Battery)			
Battery Rating	12V	12V	12V / 24V (Auto Detect)
Battery Type	Sealed / Flooded	Sealed / Flooded	Gel, AGM, Flooded, Lithium, Program
Max. Charge Current	10A	10A	30A
Charge Voltage Range	14.2 - 14.6V	14.2 - 14.6V	13.9 - 14.6V / 27.8 - 29.2V
Float Voltage Range	13.4 - 13.8V	13.4 - 13.8V	13.4 - 13.8V / 26.6 - 27.6V
Parasitic Current	< 10 mA	< 10 mA	< 25mA
DC Output to Load			
Load Current (Maximum)	10A	20A	30A
Protection and Features			
PV Reverse Polarity	Protected	Protected	Protected
Battery Overcharge	Yes	Yes	Yes
Load Over-Discharge Voltage	< 11.5V	< 11.5V	< 11.5V / 23.0V
Load Reconnected Voltage	12.6V	12.6V	12.6V / 25.2V
Built-in Temperature Sensor	Yes, temperature compensation on charging voltage	Yes, temperature compensation on charging voltage	Yes, temperature compensation on charging voltage
Indicator (SC Series) / Digital Display (SCD Series)			
Indicators	Charging / Load Disconnect LED indicator	Charging / Load Disconnect LED indicator	Digital Display
Battery Charging Status			Voltage / Current / Stage
DC Load Status	Not Applicable	Not Applicable	Load Current
DC Load Timer			Built-in clock for load ON/OFF
Enclosure			
Weight	0.65 lbs. / 0.3 Kg	0.65 lbs. / 0.3 Kg	1.2 lbs. / 0.55 Kg
Dimensions (H x W x D)	4.1 x 4.1 x 1.3" (105 x 105 x 34mm)	4.1 x 4.1 x 1.3" (105 x 105 x 34mm)	4.7 x 6.7 x 1.8" (122 x 170 x 45mm)

To download extensive product specifications of any product of interest, go to **KISAEPOWER.com/downloads**

Additional Options

NEW

DC-DC BATTERY CHARGER REMOTE (DMTRM1201)

Providing remote control for KISAE Abso DC-DC Battery Chargers, it allows the user to monitor status and perform unit settings remotely.

AC-DC BATTERY CHARGER REMOTE (ACRM1201)

Providing remote control for KISAE's Abso AC-DC Battery Chargers, it allows the user to monitor status and perform unit settings remotely.

IGNITION START REMOTE (ISRM01)

The Ignition Start Remote is designed for use with a High Frequency Inverter/Charger and a Sinewave Inverter with Transfer Switch. Connects to the vehicle's ignition start signal to turn the unit ON and OFF.

TRANSFER SWITCH 15A (TS15A)

A 15 Amp Transfer Relay for use with SW1210 and other sinewave inverters with less than 1200W output.

TRANSFER SWITCH 20A (TS20A)

A 20 AMP Transfer Relay for use with SW1220 and other sinewave inverters with less than 2200W output.

(HSCB175-03)

AUXILIARY BATTERY CONNECTOR CABLE

These battery cables work with the Home Solar Kit 1800 to allow it to connect to an auxiliary battery bank.

(RM1201-00)

INVERTER REMOTE ON/OFF SWITCH

For use with KISAE Modified Sinewave and True Sinewave Power Inverters. Allows user to control ON/OFF function from a remote location.

CABLE SET FOR INVERTERS <1200W (CB4-03)

Cable set to connect KISAE inverters -–with output of 1200W or less – to the battery.

CABLE SET FOR INVERTERS <2200W (CB2-03)

Cables to connect KISAE inverters 2200W and below to the battery.

AUXILIARY BATTERY BOX (HSBX60-00)

60Ah Battery Box that connects to Home Solar Kit 1800 for added capacity.

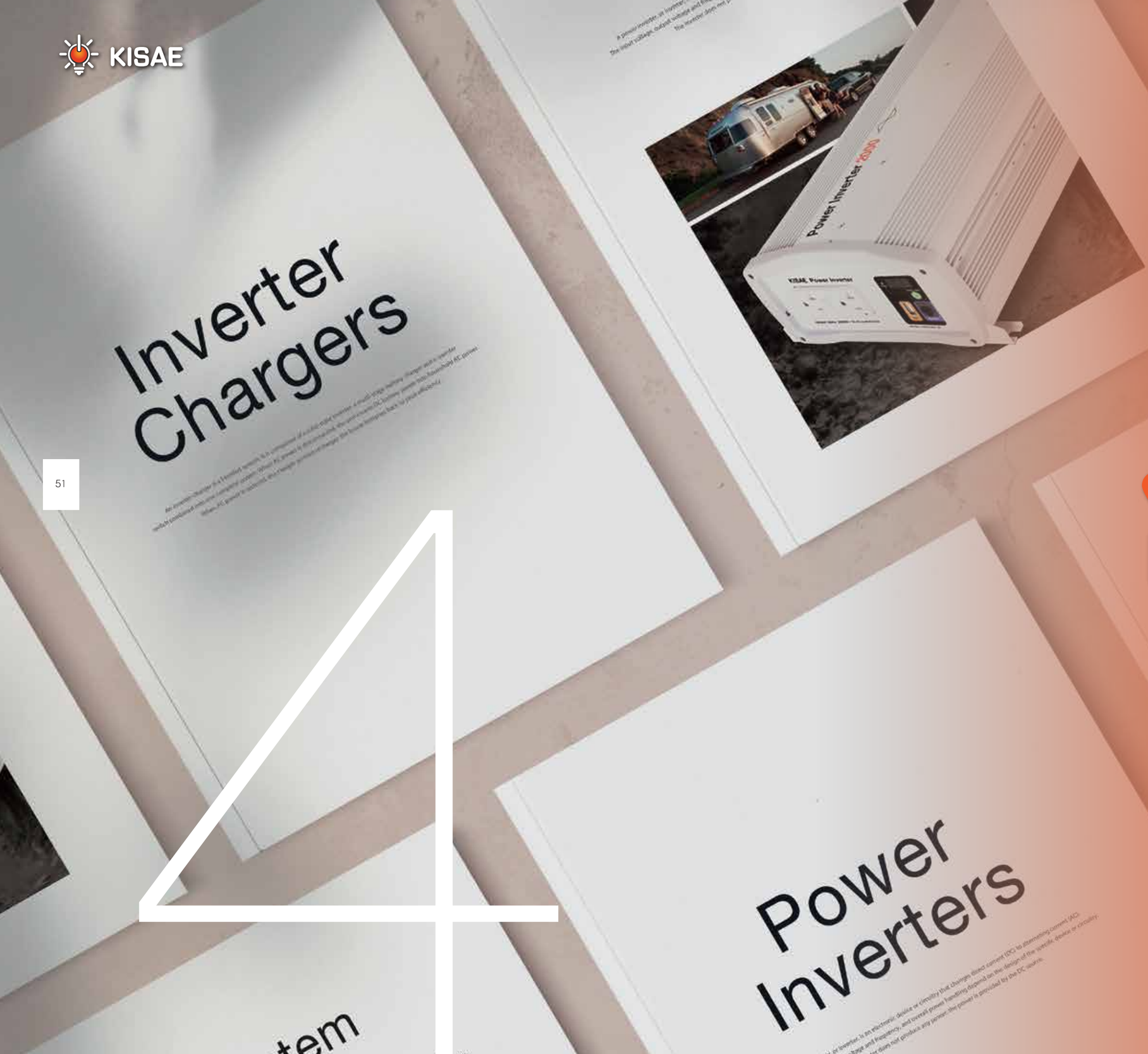
SINEWAVE INVERTER IGNITION START CABLE (IS01)

Ignition Start Remote for use with KISAE's SW sinewave inverter series. Connect to vehicle's ignition start signal to turn unit ON and OFF.

NEW

BATTERY TEMPERATURE SENSOR (BTS-10K)

KISAE Abso Charger Temperature Sensor measures the battery temperature and will make adjustments to battery charging voltage for better charging performance.



PUTTING IT ALL TOGETHER

Helpful Information

Battery Size / Run-Time Calculator

How Long Can I Run My...?

Estimated battery charging time on various battery sizes

Which Kisae Charger model is best for your need?	12V - 20Ah	12V - 40Ah	12V - 60Ah	12V - 120Ah	12V - 180Ah	12V - 240Ah	12V - 300Ah
AC Load							
20 Watts	6 hrs	13 hrs	21 hrs	44 hrs	66 hrs	87 hrs	110 hrs
40 Watts	4 hrs	8.5 hrs	13 hrs	27 hrs	41 hrs	54 hrs	68 hrs
50 Watts	3 hrs	6.2 hrs	10.5 hrs	22 hrs	33 hrs	44 hrs	55 hrs
100 Watts	1.5 hrs	3 hrs	5 hrs	10.5 hrs	16.5 hrs	23 hrs	29 hrs
150 Watts	54 mins	2 hrs	3 hrs	6.2 hrs	10.8 hrs	14 hrs	19 hrs
200 Watts	36 mins	1.3 hrs	2.2 hrs	4.5 hrs	7.5 hrs	11 hrs	13 hrs
350 Watts	13 mins	40 mins	1 hrs	2.2 hrs	4.2 hrs	5.5 hrs	7.2 hrs
500 Watts	N/A	25 mins	45 mins	1.8 hrs	3 hrs	4 hrs	5 hrs
750 Watts	N/A	13 mins	22 mins	54 mins	2 hrs	2.5 hrs	3.2 hrs
1000 Watts	N/A	7 mins	15 mins	49 mins	1.2 hrs	1.8 hrs	2.2 hrs
1250 Watts	N/A	N/A	11 mins	37 mins	1 hr	1.3 hrs	1.9 hrs
1500 Watts	N/A	N/A	7 mins	25 mins	47 mins	1 hr	1.4 hrs
1750 Watts	N/A	N/A	5 mins	18 mins	41 mins	52 mins	1.1 hrs
2000 Watts	N/A	N/A	N/A	15 mins	32 mins	43 mins	54 mins
3000 Watts	N/A	N/A	N/A	7 mins	15 mins	22 mins	37 mins

NOTE: AC Load Run-Time Calculator is based on using a KISAE Power Inverter running on 12V lead acid battery. N/A = Not Applicable

Selecting a KISAE Battery Charger

AC 1220 12V - 20A		AC 1240 12V - 40A		AC 1260 12V - 60A		AC 2430 24V - 30A	
Current Setting	Battery Capacity	Current Setting	Battery Capacity	Current Setting	Battery Capacity	Current Setting	Battery Capacity
5 Amps	Minimum 10Ah	5 Amps	Minimum 10Ah	5 Amps	Minimum 10Ah	5 Amps	Minimum 10Ah
10 Amps	Minimum 20Ah	10 Amps	Minimum 20Ah	20 Amps	Minimum 40Ah	10 Amps	Minimum 20Ah
15 Amps	Minimum 30Ah	20 Amps	Minimum 40Ah	40 Amps	Minimum 80Ah	20 Amps	Minimum 40Ah
20 Amps	Minimum 40Ah	40 Amps	Minimum 80Ah	60 Amps	Minimum 120Ah	30 Amps	Minimum 60Ah

NOTE: The rule of thumb is the maximum battery charging current is half the battery capacity size.

Battery Wire Selection Calculator

Battery Wires and Fuse Recommendations

Which wire or fuse is required for your KISAE product?	Inverter Nominal Power (Watts)	Maximum (one way distance; not round trip) <feet>	AWG Gauge # (copper)	Number of Wires per each polarity	DC Fuse (ANL or Class T)
Model #					
IC 244090	3500W	5 (recommended)	2/0 (00)	1	300A
		5	2	2	
		7	2	3	
		10	2/0 (00)	2	
		12	3/0 (000)	2	
		15	4/0 (0000)	2	
IC 1230150	3000W	5 (recommended)	4/0 (0000)	1	400A
		5	1/0 (0)	2	
		5	2	3	
		7.5	1/0 (0)	3	
		10	4/0	2	
SWXFR 1230 MW 1230HW	3000W	5 (recommended)	4/0 (0000)	1	350A
		5	1/0 (0)	2	
		5	2	3	
		7.5	1/0 (0)	3	
		10	4/0 (0000)	2	
		10	2/0 (00)	3	
SW 1220 SWXFR 1220 IC122055 IC 1220100	2000W	5 (recommended)	2/0 (00)	1	300A
		5	2	2	
		7.5	4/0 (0000)	1	
		10	2/0 (00)	2	
		12	3/0 (000)	2	
		15	4/0 (0000)	2	
MW1215	1500W	5 (recommended)	1/0 (0)	1	225A
		6	2/0 (00)	1	
		6	2	2	
		10	1/0 (0)	2	
		12	2/0 (00)	2	
		15	3/0 (000)	2	
SW 1210 MW1210 IC 121040 SWXFR 1210 SW2420	1000W (2000W for the SW2420i)	5 (recommended)	2	1	150A
		6	4	2	
		7.5	1/0 (0)	1	
		10	2/0 (00)	1	
		10	2	2	
		12	1	2	
		15	1/0 (0)	2	
SW2405	500W	5 (recommended)	10	1	30A
		6	12	2	
		8	8	1	
		12	6	1	
		10	10	2	
		15	8	2	
		20	4	1	
MW 1204 SW 1204	400W	5 (recommended)	8	1	50A
		6	10	2	
		8	6	1	
		9	10	3	
		10	8	2	
		12	4	1	
		19	2	1	

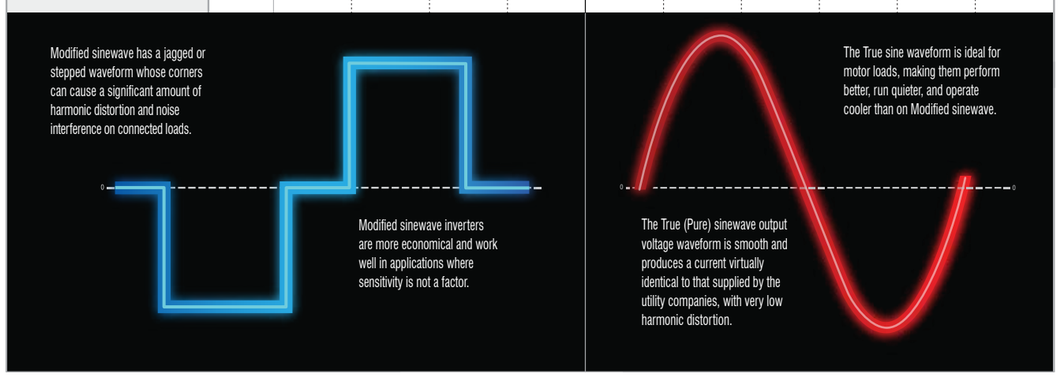
Note: For battery banks with total capacity under 500Ah, the most affordable ANL fuse type can be used with its corresponding fuse holder. Otherwise use Class-T type.

Product Applications Chart

Which Kisae Inverter model is best for your need?	Power Level	Modified Sine Wave Products				True Sine Wave Products					
		MW 1204	MW 1210	MW 1215	MW 1230hw	SL 1204	SW 1210	SWXFR 1210	SW 1220	SWXFR 1220	SWXFR 1230
Entertainment											
DVD Player	30W	•	•	•	•	•	•	•	•	•	•
Portable Stereo	40W	•	•	•	•	•	•	•	•	•	•
22" LCD TV	60W	•	•	•	•	•	•	•	•	•	•
32" LCD TV	120W	•	•	•	•	•	•	•	•	•	•
XBOX	130W	•	•	•	•	•	•	•	•	•	•
Home Stereo System	250W	-	•	•	•	•	•	•	•	•	•
Office											
17" LCD Monitor	40W	•	•	•	•	•	•	•	•	•	•
Ink Jet Printer	60W	•	•	•	•	•	•	•	•	•	•
Laser Printer	250W	-	•	•	•	•	•	•	•	•	•
Desktop Computer	350W	-	•	•	•	•	•	•	•	•	•
Lighting											
Energy saving light bulbs (3x17W)	51W	•	•	•	•	•	•	•	•	•	•
Energy saving light bulbs (6x17W)	102W	-	-	•	•	•	•	•	•	•	•
Incandescent lights (2x60W)	120W	•	•	•	•	•	•	•	•	•	•
Incandescent lights (5x60W)	300W	-	•	•	•	•	•	•	•	•	•
Flooded Light	500W	-	•	•	•	-	•	•	•	•	•
Halogen Spot Light	1000W	-	-	•	•	-	•	•	•	•	•
Kitchen											
Handheld Mixer	220W	•	•	•	•	•	•	•	•	•	•
Blender	350W	-	•	•	•	-	•	•	•	•	•
Freezer 14 cuft	450W	-	•	•	•	-	•	•	•	•	•
Refrigerator 20 cuft	550W	-	-	•	•	-	•	•	•	•	•
Coffee Maker/Toaster	800W	-	•	•	•	-	•	•	•	•	•
Microwave 800W	800W	-	-	•	•	-	-	-	•	•	•
Microwave 1200W	1200W	-	-	•	•	-	-	-	•	•	•

Product Applications Chart

Which Kisae Inverter model is best for your need?	Power Level	Modified Sine Wave Products				True Sine Wave Products					
		MW 1204	MW 1210	MW 1215	MW 1230hw	SL 1204	SW 1210	SWXFR 1210	SW 1220	SWXFR 1220	SWXFR 1230
Household											
Fan 10", Humidifier	30W	•	•	•	•	•	•	•	•	•	•
Sewing Machine	100W	-	•	•	•	•	•	•	•	•	•
Air Purifier	100W	•	•	•	•	•	•	•	•	•	•
Electric Blanket	200W	•	•	•	•	•	•	•	•	•	•
Garage Door Opener	350W	-	-	•	•	-	•	•	•	•	•
Iron	1200W	-	-	•	•	-	-	-	•	•	•
Household Vacuum	1200W	-	-	-	•	-	-	-	•	•	•
Hair Dryer	1750W	-	-	-	•	-	-	-	•	•	•
Air Conditioner (room)	1500W	-	-	-	-	-	-	-	-	-	•
Construction											
Soldering Iron	40W	•	•	•	•	•	•	•	•	•	•
1/4" Drill	250W	•	•	•	•	•	•	•	•	•	•
Grinder	300W	-	•	•	•	-	•	•	•	•	•
Weed Eater	350W	-	•	•	•	•	•	•	•	•	•
1/2" Drill	700W	-	•	•	•	-	•	•	•	•	•
Air Compressor 3/4 HP	750W	-	-	•	•	-	•	•	•	•	•
12" Chain Saw	1200W	-	-	•	•	-	-	-	•	•	•
8 1/4" Circular Saw	1500W	-	-	-	•	-	-	-	•	•	•



System Diagram 1

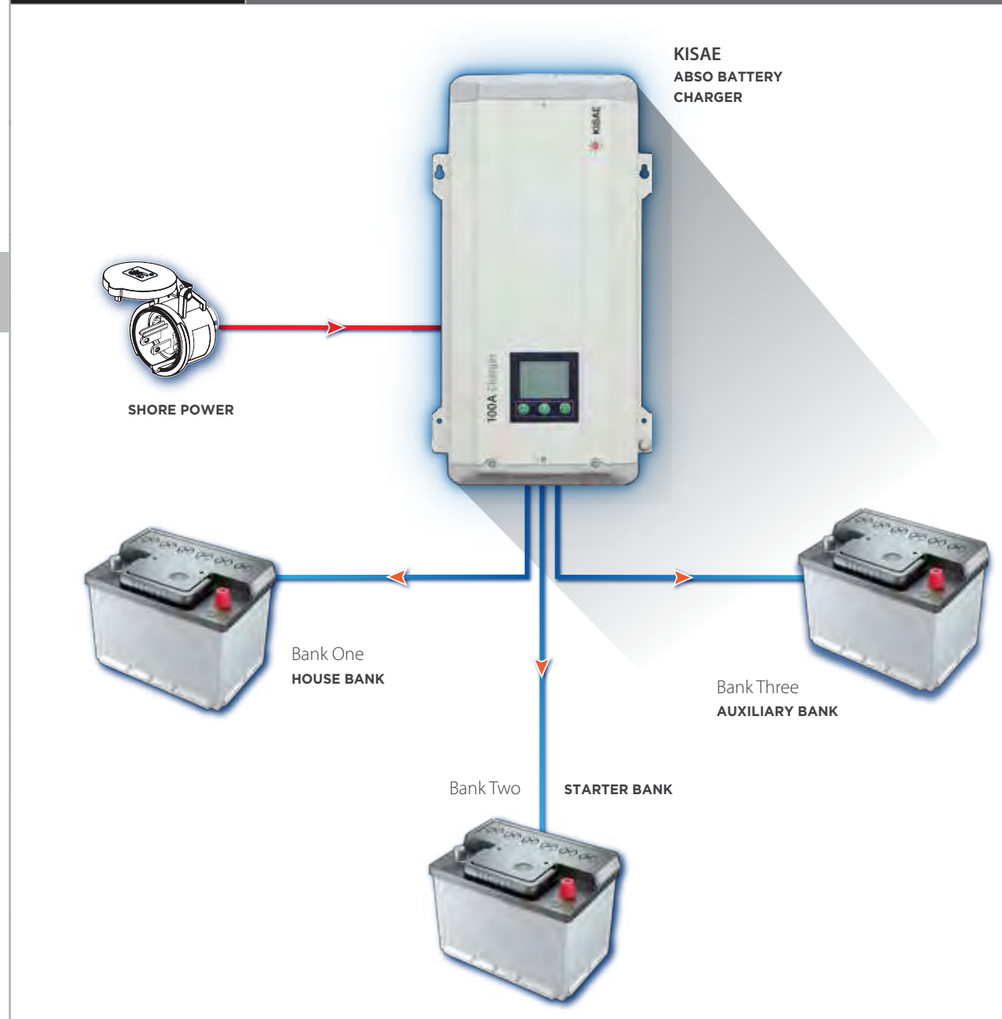
KISAE Abso Battery Charger

System benefits:

- Charge 3 battery banks
- Quick and accurate charging using multi-stage charging algorithm
- Maximize battery lifetime

ABSO BATTERY CHARGER in Typical Marine Depiction

The Abso Charger is a 3-bank battery charger that allows the user to decide which battery is the most important. It will deliver a priority charge to Bank 1, allowing this bank to get charged the quickest, then shift the cycle to battery Banks 2 and 3. In the event that all three banks need a recharge, an override function can recover all three banks quickly and evenly before switching back to Bank 1 Priority.



To download the owner's manual for any product of interest, go to **KISAEPOWER.com/downloads**

System Diagram 2

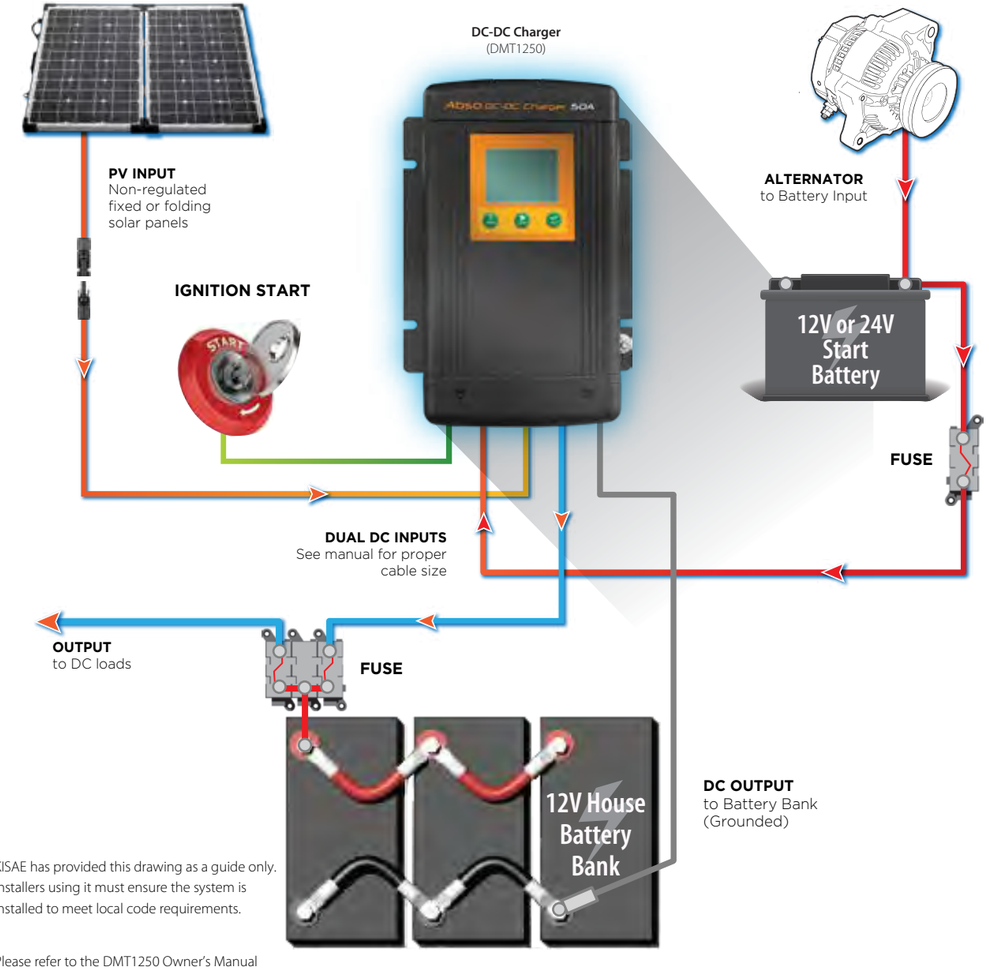
DC-DC Battery Charger

System benefits:

- Recharge batteries from two sources
- 12V DC and 24V DC versions
- Charges a variety of battery types

POWER DC LOADS WHEN AC POWER IS UNAVAILABLE / Simple Wiring Depiction

KISAE DC to DC Chargers allow the charging of a household battery bank from a solar panel or from an engine alternator. They provide dual input: MPPT Solar input and Auxiliary battery input with maintenance-free protection for batteries and solar panels. Smart, multi-stage charging algorithms offer Gel, AGM, Flooded, and Lithium batteries a precise charge as recommended by their manufacturers, resulting in maximized battery life.



KISAE has provided this drawing as a guide only. Installers using it must ensure the system is installed to meet local code requirements.

Please refer to the DMT1250 Owner's Manual for proper fuse protection and wire sizing.

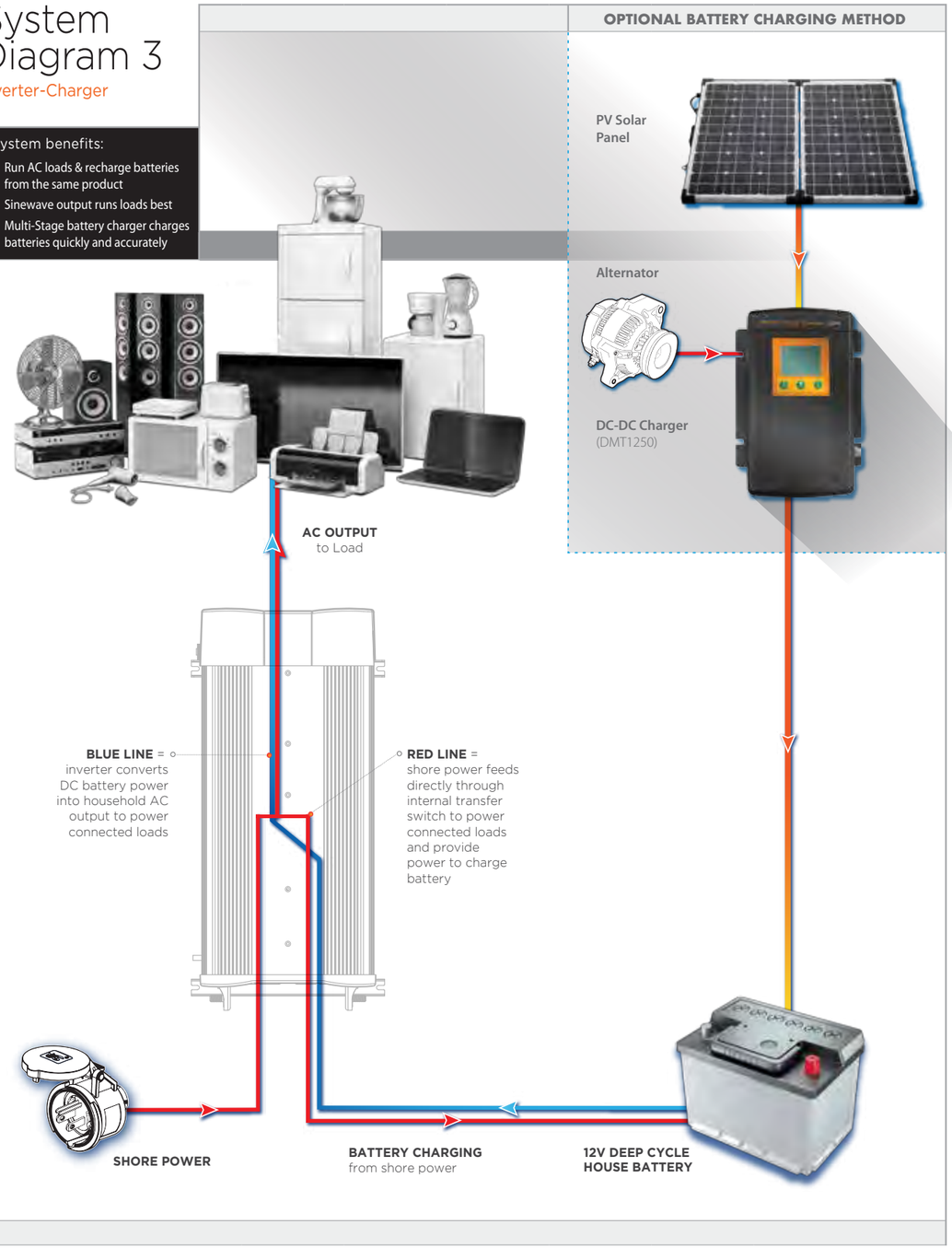
To download the owner's manual for any product of interest, go to **KISAEPOWER.com/downloads**

System Diagram 3

Inverter-Charger

System benefits:

- Run AC loads & recharge batteries from the same product
- Sinewave output runs loads best
- Multi-Stage battery charger charges batteries quickly and accurately



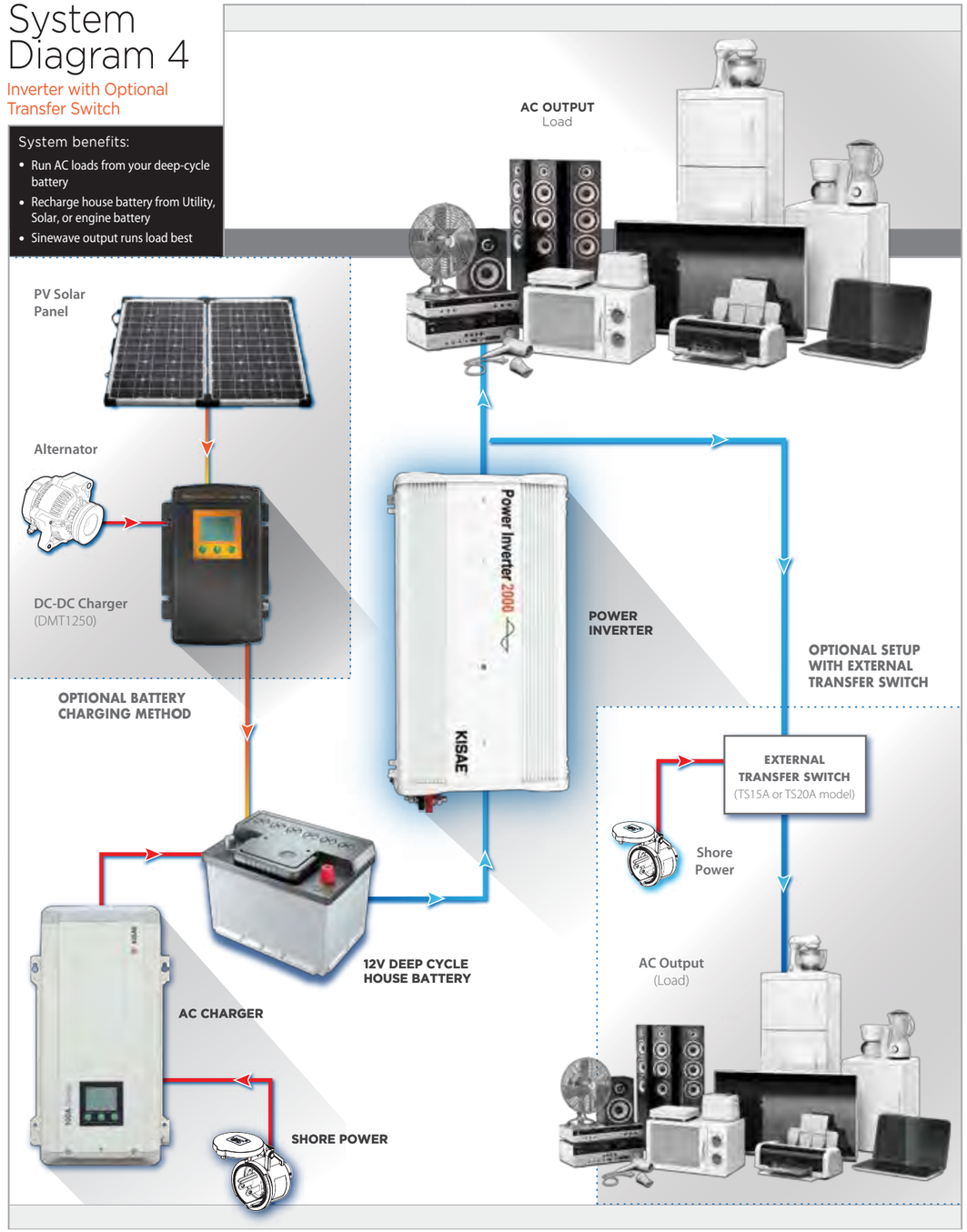
To download the owner's manual for any product of interest, go to **KISAEPOWER.com/downloads**

System Diagram 4

Inverter with Optional Transfer Switch

System benefits:

- Run AC loads from your deep-cycle battery
- Recharge house battery from Utility, Solar, or engine battery
- Sinewave output runs load best



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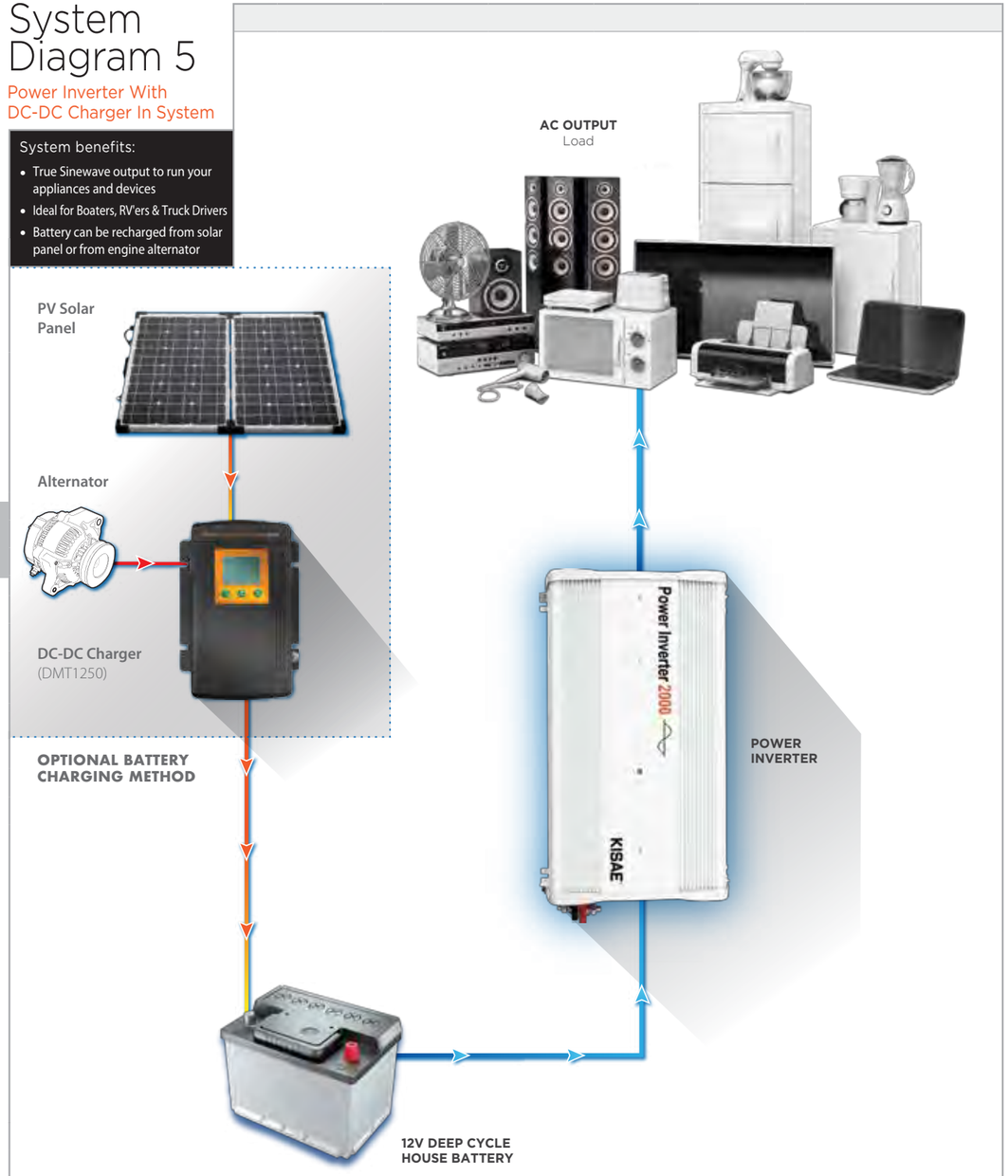
System Diagram 5

Power Inverter With DC-DC Charger In System

System benefits:

- True Sinewave output to run your appliances and devices
- Ideal for Boaters, RV'ers & Truck Drivers
- Battery can be recharged from solar panel or from engine alternator



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System Diagram 6

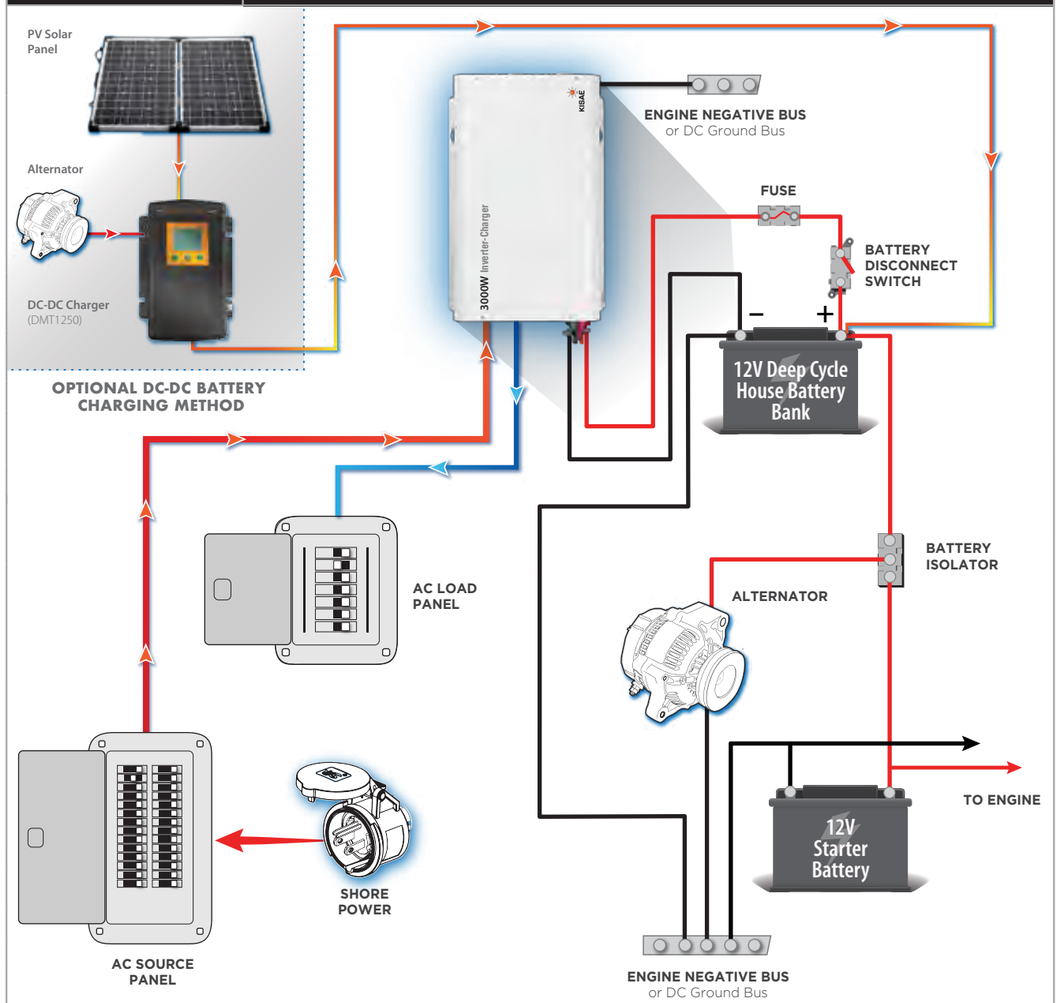
Bi-Directional Inverter-Charger

System benefits:

- Sinewave output runs loads best
- When connected to shore power, power passes through the inverter directly to the loads and can be used to recharge batteries

BI-DIRECTIONAL INVERTER - CHARGER / In-Vehicle Depiction

The KISAE Bi-Directional Inverter-Charger is an ideal solution to convert 12V battery power to True Sinewave AC household power. It features high surge current to start difficult loads, and its built-in battery charger allows you to recharge your batteries quickly and efficiently whenever shore power is available.



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System Diagram 7

Inverter with Transfer Switch

System benefits:

- Sinewave output runs loads best
- Built-in transfer switch automatically switches between shore power and inverter-battery power

SWXFR INVERTER SERIES

AC OUTPUT
to Load

BY-PASS THROUGHPUT
TO AC LOADS WITHOUT TRANSFER SWITCH INVOLVED

INVERTER THROUGHPUT
TO AC LOADS WITH TRANSFER SWITCH INVOLVED

SHORE POWER

12V DEEP CYCLE HOUSE BATTERY

System Diagram 8

Low Frequency Inverter-Charger

System benefits:

- Sinewave output runs loads best
- Built-in transfer switch automatically switches between shore power and inverter-battery power

LOW FREQUENCY INVERTER-CHARGER WITH DC AND AC SOURCE

When connected to shore power, the KISAE Inverter-Charger passes the utility power directly to your loads, and charges your batteries with any leftover power. When not connected to shore power, the inverter converts DC power from the batteries into AC power to run your appliances and devices. This inverter output is a true (pure) sinewave output, a waveform that will work best for all load applications.

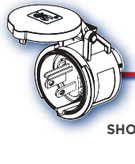
AC OUTPUT
to Load

KISAE LOW FREQUENCY INVERTER-CHARGER

BLUE LINE = inverter converts DC battery power into household AC output to power connected loads

RED LINE = shore power feeds directly through inverter to power connected loads and provide power to charge battery

BATTERY CHARGING
from shore power



SHORE POWER

12V DEEP CYCLE HOUSE BATTERY

System Diagram 9

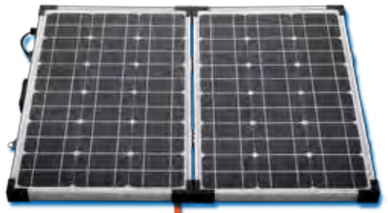
Solar Charge Controller

System benefits:

- Maintains batteries in fully charged state
- Protects battery from overcharging and discharging
- Residential and Industrial applications

OPTIMAL BATTERY CHARGING FROM A SOLAR PANEL

Whether installing a charge controller for your own off-grid vacation home or for an industrial solar array installation, KISAE Solar Charge Controllers provide maintenance-free protection for your batteries and solar panels in off-grid applications. These controllers provide a regulated output to prevent batteries from overcharging, while the Load Disconnect feature protects batteries from being over-discharged. KISAE Charge Controllers have LED status indicators to provide a quick reference to Charger, Battery and Load status.



PV SOLAR PANEL

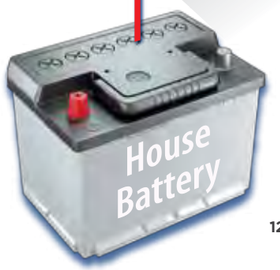
DC LOADS with Low Voltage Disconnect feature (LVD)

- Cell phone & Tablet rechargers
- DC fans
- Car Vacuums
- Air Pumps
- Coolers

SOLAR CHARGE CONTROLLER (SC1220 LD)

PV INPUT to charge the House Battery

DC OUTPUT provides battery power for low to medium DC Loads (<30A)



12V/24V HOUSE BATTERY

To download the owner's manual for any product of interest, go to **KISAEPOWER.com/downloads**

Glossary of Terms

PURPOSE

This glossary of terms is provided as an addendum and a support to this catalog. Its purpose is to serve as a helpful resource should the need arise. It is alphabetical and includes definitions for many of the common electrical words and ratings used thoughout this reference.

Terms and Definitions

Alternating Current (AC) - The type of electrical power supplied by the Utility.

Amp Hour (Ah) - One amp of electrical current flowing for one hour. Battery capacity is rated in Amp-hours.

Battery Charger - A device that is used to refill the capacity of a battery (its "charge") by supplying DC current to the battery.

Direct Current (DC) - The type of electricity stored in batteries.

DC Loads - These loads are those that run off a DC electrical system (battery). Examples of DC loads include lights, pumps, and some motors.

Engine Battery - A battery that is separate from the House battery, specifically designated to provide power for engine starting.

House Battery - The house or auxiliary battery is the large capacity, deep cycle battery that is usually connected to the inverter and allows for longer run times.

Idle Current - The amount of electrical power required to keep an inverter ready to produce electricity on demand.

Inductive Loads - TVs, VCRs, stereos, computers, and electric motors are examples of inductive loads which surge on start up. They require a high start-up current compared to a resistive load such as a hair dryer.

Inverter - A device that converts DC power to AC power.

Load - Any device that consumes electricity in order to operate. Appliances, tools, and equipment are examples of electrical loads.

Modified Sine Wave (MSW) - An AC wave form (generated by many inverters) that is a pulse width modified square wave.

Resistive Loads - Toasters, coffee pots, and incandescent lights are examples of resistive loads.

Sine Wave - The optimal output wave form of alternating current (AC). A smooth wave going above and below zero.

Surge Capacity - The amount of current an inverter can deliver for short periods of time. This rating is particularly important to understand how much power is required to start high surge loads such as microwave ovens and refrigerators.

Transfer Switch - A switch designed to transfer electricity being supplied to loads from one source of power to another. A transfer switch may be used to designate whether power will come from the Utility or from an inverter/battery.

Watt(s) (W) - A quantitative measurement of electrical power taking into account power factor. Watts are calculated by multiplying volts times amps (watts = volts × amps).

High Frequency Inverter Design – Inverters designed with smaller transformers with high switching speed transistors. Typically less expensive, and have smaller footprints

Low Frequency Inverter Design - Inverters designed with larger transformers and slower switching transistors. Allows these inverters to operate cooler and works well for high surge loads like pumps and motors.

Voltage - A unit of measure of the pressure in an electrical circuit. AC voltage is typically 100VAC in Japan, 120VAC in North America, 230VAC in Europe and 240VAC in Australia

Amp(s) (A) - A measurement of the flow of electrical current. One amp is equal to the electric force of one volt acting across the resistance of one ohm.

Pulse Width Modulation (PWM) - Pulse Width Modulation is the most effective means to achieve constant voltage battery charging by switching the solar system controller's power devices. When in PWM regulation, the current from the solar array tapers according to the battery's condition and recharging needs. This method is used in KISAE charge controllers

Hertz (Hz) - The frequency, or number of times per second, that the flow of AC electricity reverses itself

Bulk Charge - The first of the three stages of 3-stage battery charging. Current is sent to batteries at the maximum rate they will accept while voltage rises to full charge level.

Absorption Charge - The second of the three stages of 3-stage battery charging. Voltage remains constant and current tapers off.

Float Charge - The third of the three stages of 3-stage battery charging. After batteries are fully charged, the charging voltage is reduced to a lower level to reduce gassing and prolong battery life. Also referred to as a "maintenance charge".

Equalization - Also can be referred to as a fourth battery charge stage, equalization is a controlled overcharge of the batteries, reducing sulfation and stratification in flooded lead acid batteries

To download extensive product specifications or manuals for any product of interest, go to **KISAEPOWER.com/downloads**

KISAE

KISAEPOWER.com

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