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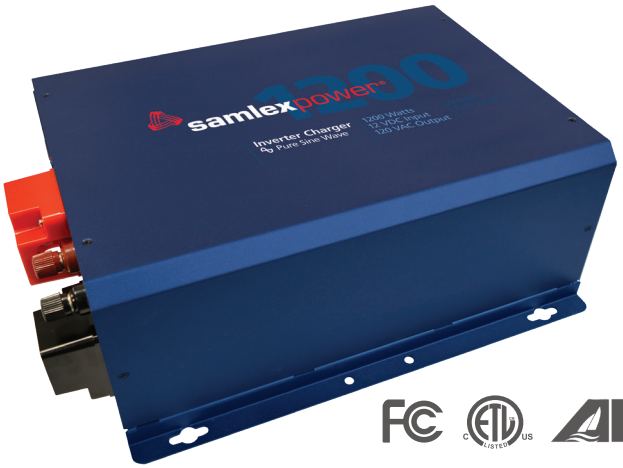
EVOLUTION™ F Series Inverter/Charger

Pure Sine Wave Inverter, Adaptive Battery Charger, Transfer Relay – All in ONE unit.



EVO-RC-PLUS

PRODUCT FEATURES

- Pure Sine Wave Inverter
- 6 programmable charging profiles – 2, 3 and 4 stages with Equalization
- Use Lead Acid or Lithium Batteries
- GFCI & Hardwired models available

Models Available

EVO-1212F / 1212F-HW	EVO-1224F / 1224F-HW
1200 Watts	1200 Watts
12 VDC	24 VDC

Adaptive Battery Charging Option for Lead Acid Batteries

Algorithm monitoring in the Bulk Stage assesses the battery's condition. The remaining charging stages are based on the battery's condition rather than a pre-set charging time. Reduces excess charging time and extends life of battery.

Synchronized Transfer

Zero transfer time when switching from inverter to AC input source. When AC input source comes on, the inverter synchronizes with the incoming wave form and then transfers instantly at zero crossing without any interruption to the load.

High Surge Inverter

The inverter has a surge capability of 3X its continuous power rating, allowing it to turn on loads with high starting surge.

Active Power Boost

In addition to 3X surge on start up, inverter loads can exceed the continuous power output by the Power Boost Allowances without triggering an overload fault. Get 150% for 30 seconds, 140% for 1 minute, 120% for 10 minutes or 110% for 30 minutes! There is no need to upsize to a larger inverter/charger to handle a heavy surge load, resulting in reduced costs.

Input for Solar Charge Controller

Connect a solar charge controller (up to 50A) directly to the EVO™ through the Battery Charger External DC Input (Solar Input). External charging current is monitored to free up more power from the grid to be available to the load while charging. Also, when the grid is not available, the batteries may still be charging to extend user run time.

Online Mode

Use to prioritize Batteries/Inverter over the grid. Ideal for those who want to operate primarily on solar power even when grid is available (when grid is costly). In Online Mode, grid is only used as backup power when batteries need charging.

Bullet Proof Intelligence

Multiple physical points of protection monitoring are scanned up to 10,000 times per second to detect adverse internal and external conditions. When detected, the unit will initiate a healthy shutdown before any damage can be done, making the EVO™ practically indestructible in the field.

Wide Operating Temperature Range

-20°C to +60°C, -4°F to 140°F
Will operate below zero!

Temperature Controlled Cooling

2 internal fans are speed controlled based on multiple temperature sensors. Reduces unnecessary fan noise and energy consumption by cooling only where and when needed.

AC Input / Output Option

- AC Power Cord Inlet & Duplex GFCI outlet: EVO-1224F / 1224F
- Hardwired: EVO-1212F-HW / 1224F-HW

Programmable Power Save Mode

Select sleep and wake up point based on load power draw. Power consumption is < 8 Watts in Sleep Mode. Configurable so that intermittent loads turn ON consistently from power save mode – extends battery/inverter run time during grid failure.
Programmable with EVO-RC-PLUS optional remote control, sold separately.

Safety Certified and EMC Compliant

ETL safety listed to stringent UL standards & CSA. EMC Compliant to FCC requirements.

3 YEAR LIMITED WARRANTY

Fleet Vehicles, Remote Locations, Boats, RV's and for Emergency Back-up Power

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EVOLUTION™

Inverter/ Charger

Pure Sine Wave

Model:
EVO-1212F
EVO-1212F-HW
EVO-1224F
EVO-1224F-HW

Programmable
Remote Control
Model: EVO-RC-PLUS
(Sold Separately)

3 YEAR LIMITED WARRANTY

	MODEL NO.	EVO-1212F / EVO-1212F-HW	EVO-1224F / EVO-1224F-HW
INVERTER SPECIFICATIONS	OUTPUT WAVEFORM	Pure Sine Wave	
	INPUT BATTERY VOLTAGE RANGE	9.1 - 17 VDC	18.1 - 34 VDC
	NOMINAL AC OUTPUT VOLTAGE	120 VAC ± 5%	
	OUTPUT FREQUENCY	60 Hz ± 0.1 Hz	
	TOTAL HARMONIC DISTORTION OF PURE SINE WAVE FORM (THD)	< 5%	
	CONTINUOUS OUTPUT POWER AND POWER FACTOR (PF)	1200 Watt at PF = 0.95	
	CONTINUOUS AC OUTPUT CURRENT	10A	
	SURGE POWER FOR 1 MSEC	300% (3600VA, 30A)	
	SURGE POWER FOR 100 MSEC	200% (2400VA, 20A)	
	POWER BOOST FOR 30 SEC	150% (1800W at PF = 0.95)	
	POWER BOOST FOR 1 MIN	140% (1680W at PF = 0.95)	
	POWER BOOST FOR 10 MIN	120% (1440W at PF = 0.95)	
	POWER BOOST FOR 30 MIN	110% (1320W at PF = 0.95)	
	MAXIMUM CONTINUOUS DC INPUT CURRENT	152A	76A
	INVERTER EFFICIENCY (PEAK)	89%	91%
	NO LOAD POWER CONSUMPTION IN POWER SAVING MODE	< 8 W	
	NO LOAD POWER CONSUMPTION IN NORMAL MODE (120 VAC OUTPUT, TYPICAL)	20 watts	20 watts
	NO LOAD POWER CONSUMPTION IN STANDBY MODE	< 5W	
AC INPUT	AC INPUT VOLTAGE	120VAC (60-140VAC +/- 5% selectable)	
	AC INPUT FREQUENCY	60Hz	
	MAXIMUM PROGRAMMABLE (DEFAULT) AC INPUT CURRENT	5 - 20A (Default - 20A)	
	AC INPUT BREAKER SIZE	20A (i) EVO-1212F and EVO-1224F have built-in Breaker (ii) For EVO-1212F-HW and EVO-1224F-HW, breaker has to be installed externally by the installer / user.	
TRANSFER CHARACTERISTICS	TRANSFER RELAY TYPE AND CAPACITY	SPDT, 30A	
	TRANSFER TIME – INVERTER TO GRID / GENERATOR	< 1 ms (Synchronized transfer at zero crossing)	
	TRANSFER TIME – GRID / GENERATOR TO INVERTER	Up to 18ms (Synchronized transfer at zero crossing)	
INTERNAL BATTERY CHARGER	AC INPUT VOLTAGE RANGE	120 VAC (60 to 140 VAC +/-5% selectable) ; 60 Hz	
	MAX CONTINUOUS AC INPUT CURRENT AT MAXIMUM BULK CHARGING CURRENT	11.2A, AC (At BULK CURRENT = 60 ADC)	11.2A, AC (At BULK CURRENT = 40 ADC)
	AC INPUT POWER FACTOR	> 0.95	

Over ▶

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EVOLUTION™

Inverter/ Charger

Pure Sine Wave

Model:
EVO-1212F
EVO-1212F-HW
EVO-1224F
EVO-1224F-HW

	MODEL NO.	EVO-1212F / EVO-1212F-HW	EVO-1224F / EVO-1224F-HW
INTERNAL BATTERY CHARGER	PROGRAMMABLE BULK CHARGING CURRENT	0 - 60A, DC	0 - 40A, DC
	PROGRAMMABLE CHARGING VOLTAGES: BULK / ABSORPTION FLOAT STAGE EQUALIZATION STAGE	 13.5 to 16.0V (Default 14.4V) 13.0 to 15.0V (Default 13.5V) 14.0 to 16.0V (Default 14.4V)	 27.0 to 32.0V (Default 28.8V) 26.0V to 30.0V (Default 27.0V 28.0 to 32.0V (Default 28.8V)
	PROGRAMMABLE CHARGING PROFILES	• 3 profiles under 3-Stage Charging: Bulk, Absorption, Float • 1 profile under 4-Stage Charging: Bulk, Absorption, Equalize, Float • 2 profiles under 2-Stage Charging: Bulk, Absorption	
	BATTERY TEMPERATURE COMPENSATION	• Battery Temperature Sensor included • Compensation Range from -20°C to 60°C	
	CHARGER EFFICIENCY	75%	86%
EXTERNAL BATTERY CHARGER (SOLAR CHARGE CONTROLLER)	CHARGING VOLTAGE RANGE	13 - 16 VDC	26 - 32 VDC
	MAXIMUM CHARGING CURRENT	50A	
COOLING, PROTECTIONS AND ALARMS	COOLING	2 Fans – Temperature Controlled, Variable Speed	
	PROTECTIONS AND ALARMS	• Battery Low Voltage Alarm and Low / Over Voltage Shut Down • Shut Down under Input Over Current, Output Over Current, Output Overload and Output Short • Transformer and Heat Sink Overheat Shut Down • Immunity Against Conducted Electrical Transients in Vehicles	
	BUILT-IN OVER CURRENT BREAKERS	Input: 20A Output: 15A • For EVO-1212F and EVO-1224F only. • To be installed externally for EVO-1212F-HW and EVO-1224F-HW	
INPUT AND OUTPUT CONNECTIONS	BATTERY CONNECTION	• Stud and Nut: M8 (Pitch1.25mm)	
	EXTERNAL CHARGE CONTROLLER CONNECTION	• Stud and Thumb Nut: M6 (Pitch 1mm)	
	AC INPUT CONNECTION	(i) **EVO-1212F and EVO-1224F:** • IEC 60320 C-20 Male Power Inlet Plug. Requires 20A Detachable Power Cord with mating IEC 60320 C-19 Socket Connector and NEMA5-20P Plug (ii) **EVO-1212F-HW and EVO-1224F-HW:** • Terminal Block	
	AC OUTPUT CONNECTION	(i) **EVO-1212F and EVO-1224F**: • NEMA5-15P, Duplex GFCI Outlet, 15A (ii) **EVO-1212F-HW and EVO-1224F-HW**: • Terminal Block	
OPTIONAL REMOTE CONTROL	MODEL NO.	EVO-RC-PLUS	
	SPECIFICATIONS	• Advanced Features for programming various parameters and modes of operation • 4 Rows of 20 Character Alpha Numeric LCD Display for messaging • Up to 32 GB SD Card Slot for Data Logging • Comes with 10M / 33ft RJ-45 Data Cable	
COMPLIANCE	SAFETY COMPLIANCE	• Intertek-ETL listed: Certified to CAN / CSA STD. C22.2 No. 107.1-01 • Intertek-ETL listed: Conforms to ANSI / UL STD. 458	
	EMI / EMC COMPLIANCE	Certified to FCC Part 15(B), Class A	
	ABYC COMPLIANCE	Meets ABYC A-31 and ABYC E-11 ; Meets Ignition Protection SAE-J1171 and ISO 8846.	
ENVIRONMENTAL SPECIFICATIONS	OPERATING TEMPERATURE	-20°C to +60°C (-4°F to 140°F)	
	STORAGE TEMPERATURE	-40°C to +70°C (-40°F to 158°F)	
	OPERATING HUMIDITY	0 to 95% RH non condensing	
WEIGHTS AND DIMENSIONS	DIMENSIONS: W X D X H	324 x 415 x 148 mm; 12.76 x 16.34 x 5.83 in	
	WEIGHTS	17.6 Kg / 38.8 lb	

NOTES:
(1) All AC power ratings in the Inverter Section are specified at Power Factor = 0.95
(2) All specifications given above are at ambient temperature of 25°C / 77°F unless specified otherwise
(3) Specifications are subject to change without notice

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