TAKE **CHARGE** OF
YOUR BATTERIES

Xtender M1007

X tender ™
Battery Regenerator

ChargePlus

SPE

FSIP

DisChargePlus
FSIP
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MOTIVE **POWER**
SOLUTIONS

![FSIP logo]

Flight Systems Industrial Products (FSIP), established in 1968, is proud to offer manufactured, remanufactured, and new electronic products for the battery-powered and IC markets, such as golf cars, material handling, construction, and more. Our product offerings include the Xtender Battery Regenerator, battery chargers, charger modules, controllers, dash displays, joysticks, and other battery management products.

FSIP is committed to providing quality products and services with zero defects that fully satisfy our customers' requirements and expectations. We've built alliances with leading electronics and vehicle manufacturers, and our remanufacturing provides a cost-effective, reliable alternative to new parts.

FSIP is ISO 9001:2015 Certified by Perry Johnson Registrars.

Motive Power Solutions

Consult * Supply * Train * Support

Electronic motive power technology is in a state of constant change. As an industry leader in battery charging, regeneration, and management solutions, Flight Systems Industrial Products (FSIP) is a partner you can rely upon. Our Motive Power Solutions team is available for consultations, business analysis, and recommendations to optimize your electric battery-powered vehicle business.

What can you expect from Flight Systems Industrial Products?

Consulting. Our Motive Power Solutions team learns about your business and qualifies your needs from customizable chargers for lithium and lead-acid batteries, to automating your battery reconditioning and testing process. We work with our manufacturing partners and you to evaluate and recommend the best course of action to support your business.

Supply. FSIP supports your business through our long-standing brand relationships like S.P.E. Elettronica Industriale, MarooOn Inc., Delta-Q Technologies, and Philadelphia Scientific. We offer both new and remanufactured services to meet your budget. We limit lead-times by warehousing product onsite at our locations.

Training. We engage with your frontline team to ensure best practices, optimized equipment usage, and educate your sales teams on how to maximize sales. Virtual or onsite product training* is available as needed.

*Xtender Battery Regenerator may have onsite trial and training.

Support. Your Motive Power Solutions team members are available to answer any questions that may arise after the implementation of your equipment. Additional assistance is available through either the Sales Support or Technical Support teams. FSIP is here for you before, during, and after the sale.

From consultation, motive power planning, training, and support, our Motive Power Solutions team will keep your electric vehicle business lean and competitive.

Xtender Battery Regenerator

This all-in-one, fully automated machine safely discharges and charges lead-acid (flooded, AGM, or gel traction) batteries, restoring lost capacity after business hours. The Xtender comes in either single-phase 220 VAC, perfect for the golf industry or in three-phase 220 VAC for material handling, telecommunications, UPS, utility, and transportation applications.

Features:
- All-in-one discharger, cycler, and charger
- Simple touchscreen programming
- Remote Bluetooth monitoring
- Diagnostic reports
- Optional Battery Monitoring System (BMS)

Battery Monitoring System (BMS)

Get accurate data on either battery or individual cell health.
- Collect data from up to 100 cells simultaneously
- Reports real-time voltage measurement via Bluetooth every 3 minutes
- Automatically generates cell/battery health reports
- Software and updates included
- Works with Xtender or Smart Discharger

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Sum	Avg
00:00	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	39.60	2.20
00:03	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	39.60	2.20
00:06	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	39.42	2.19
00:09	2.18	2.18	2.18	2.18	2.18	2.18	2.19	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	39.25	2.18
00:12	2.18	2.18	2.18	2.18	2.18	2.18	2.14	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	39.20	2.18
00:15	2.17	2.17	2.17	2.17	2.17	2.17	2.14	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	39.03	2.17
00:18	2.17	2.17	2.17	2.17	2.17	2.17	2.14	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	39.03	2.17
00:21	2.16	2.16	2.16	2.16	2.16	2.16	2.14	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	38.86	2.16
00:24	2.16	2.16	2.16	2.16	2.16	2.16	2.14	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	38.86	2.16
00:27	2.15	2.15	2.15	2.15	2.15	2.15	2	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	38.55	2.14
00:30	2.15	2.15	2.15	2.15	2.15	2.15	2	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	38.55	2.14
00:33	2.14	2.14	2.14	2.14	2.14	2.14	2	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	38.38	2.13
00:36	2.14	2.14	2.14	2.14	2.14	2.14	1.89	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	38.27	2.13
00:39	2.13	2.13	2.13	2.13	2.13	2.13	1.85	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	38.06	2.11
00:42	2.13	2.13	2.13	2.13	2.13	2.13	1.75	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	37.96	2.11
00:45	2.12	2.12	2.12	2.12	2.12	2.12	1.6	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	37.64	2.09
00:48	2.12	2.12	2.12	2.12	2.12	2.12	1.6	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	37.64	2.09
00:51	2.11	2.11	2.11	2.11	2.11	2.11	1.6	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	37.47	2.08
00:54	2.11	2.11	2.11	2.11	2.11	2.11	1.6	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	37.47	2.08
00:57	2.1	2.1	2.1	2.1	2.1	2.1	1.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	37.30	2.07
00:60	2.1	2.1	2.1	2.1	2.1	2.1	1.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	37.30	2.07

Sensors	2 V	6 V	8-12 V
M1001 Kit	-	8	6
M1007 Kit	24*	-	-

*Additional sensors available for purchase

Smart Discharger

Troubleshoot and manage battery-powered equipment expenses by accurately tracking your battery's remaining capacity.
- Designed to test 12 V–96 V batteries
- Discharge capacity of 0–200 Amps, allows for C6 discharge rate on batteries up to 1,200 Ah
- Programmable cycle termination based on minimum voltage reached or total capacity discharged
- Works in conjunction with the Xtender or as a stand-alone load bank/discharger
- Capable of monitoring each cell with the addition of wireless BMS sensors

SEE THEM IN **ACTION**, ON SITE AT YOUR FACILITY - BOOK A DEMO

Model	Input Voltage	Max Input Current	DC Output Voltage	DC Output Current	Dim.	Wt.
93-M1001	208–240 VAC, Single-Phase	35 A	1.2–110 V	0–30 A	24" x 16" x 52.5"	273 lbs.
93-M1007	208–240 VAC, Three-Phase	75 A	1.2–125 V	0–100 A	24" x 20" x 52.5"	554 lbs.
93-M1007-480	480 VAC, Three-Phase	40 A	1.2–125 V	0–100 A	24" x 20" x 52.5"	554 lbs.

Rental and lease options available.

Model	Input Voltage	Max Input Current	Output Voltage	Load Capacity	Max Amp Hour Rating	Dim.	Wt.
93-D1007-200	120 VAC, Single-Phase	115 VAC 15 A	10–110 VDC	0–200 A	1200 Ah C6	16" x 16" x 37"	143 lbs.

GREEN Series
Three-Phase Industrial Battery Chargers

FSIP exclusive **GREEN** Series Industrial Chargers are three-phase high-frequency, fully automatic chargers for use with either lead-acid or lithium batteries. Sporting a durable, dependable modular design for uninterrupted charging. The **GREEN** Series Industrial Chargers provide a solution for your light- to heavy-duty electric vehicle charging needs.

IP20 RATED

BC CALIFORNIA ENERGY COMMISSION COMPLIANT

GREEN6:
- 208–240 VAC, 480 VAC, or 600 VAC
- 24 V, 36 V, 48 V, 80 V
- 2–150 A

GREEN8:
- 208–240 VAC or 480 VAC
- 24 V, 36 V, 48 V, 80 V
- 2–200 A

GREENX:
- 480 VAC
- 24 V, 36 V, 48 V, 80 V
- 2–300 A

Features:
- LED charging indicator light
- Fast charge capable
- Multivoltage/multicurrent configurable via the front panel display or USB type A/B port
- Standard CC/CV/Stop profile or CAN Bus option for lithium batteries
- High-frequency switching technology
- 7-preloaded charging curves, custom curves available
- Specialized charging curves available
- >90% high-energy efficiency
- Charge cycles can begin as low as 2 volts
- Soft charging cycle
- Reverse polarity protection
- Cables: 10-foot DC cable
- Locate on floor, wall-mount, or stand-mount
- Durable steel case
- Remanufacturable
- Easy to service and repair, when necessary, with little to no downtime

Optional Integrated Data Logger with RTC (Real-Time Calendar)
Optional Battery Identification Device (BID)

Model	DC Output Voltage	DC Output Current	Flooded 8-Hour Ah Range (C6)	Flooded 4-Hour Ah Range (C6)	AC Input Current	Input Voltage
GREEN6 Dim.: 13.7" x 8.7" x 26.2" Wt.: 78 lbs.						
24-GREEN6220-24150	24 V	150 A	1250 Ah	–––	35 A	208–240 VAC
24-GREEN6220-36150	36 V	150 A	1250 Ah	–––	30 A	208–240 VAC
24-GREEN6220-48150	48 V	150 A	1250 Ah	–––	30 A	208–240 VAC
24-GREEN6220-80100	80 V	100 A	850 Ah	–––	40 A	208–240 VAC
24-GREEN6-24150	24 V	150 A	1250 Ah	–––	10 A	480 VAC
24-GREEN6-36150	36 V	150 A	1250 Ah	–––	15 A	480 VAC
24-GREEN6-48150	48 V	150 A	1250 Ah	–––	20 A	480 VAC
24-GREEN6-80100	80 V	100 A	850 Ah	–––	20 A	480 VAC
24-GREEN6600-48150	48 V	150 A	1250 Ah	–––	15 A	600 VAC
GREEN8 Dim.: 19.5" x 8.6" x 26.2" Wt.: 95.5 lbs.						
24-GREEN8220-24200	24 V	200 A	1650 Ah	850 Ah	50 A	208–240 VAC
24-GREEN8220-36200	36 V	200 A	1650 Ah	850 Ah	50 A	208–240 VAC
24-GREEN8220-48200	48 V	200 A	1650 Ah	850 Ah	50 A	208–240 VAC
24-GREEN8480-24200	24 V	200 A	1650 Ah	850 Ah	25 A	480 VAC
24-GREEN8480-36200	36 V	200 A	1650 Ah	850 Ah	25 A	480 VAC
24-GREEN8480-48200	48 V	200 A	1650 Ah	850 Ah	25 A	480 VAC
24-GREEN8480-80130	80 V	130 A	1100 Ah	575 Ah	25 A	480 VAC
GREENX Dim.: 13.7" x 15.9" x 26.2" Wt.: 135 lbs.						
24-GREENX480-24250	24 V	250 A	2500 Ah	1250 Ah	30 A	480 VAC
24-GREENX480-36250	36 V	250 A	2500 Ah	1250 Ah	20 A	480 VAC
24-GREENX480-48250	48 V	250 A	2500 Ah	1250 Ah	27 A	480 VAC
24-GREENX480-24300	24 V	300 A	2500 Ah	1250 Ah	35 A	480 VAC
24-GREENX480-36300	36 V	300 A	2500 Ah	1250 Ah	35 A	480 VAC
24-GREENX480-48300	48 V	300 A	2500 Ah	1250 Ah	35 A	480 VAC
24-GREENX480-80160	80 V	160 A	1320 Ah	680 Ah	30 A	480 VAC
24-GREENX480-80200	80 V	200 A	1750 Ah	875 Ah	40 A	480 VAC

UL   c UL us   **3** YEAR INDUSTRIAL APPLICATION WARRANTY

GREEN Series
Single-Phase Industrial Battery Chargers

FSIP exclusive **GREEN** Series Industrial Chargers are single-phase, high-frequency, fully automatic chargers for use with either lead-acid or lithium batteries. They are portable, easy-to-use, voltage specific and current adjustable. They deliver over 90% high-energy efficiency. The **GREEN** Series Single-Phase Industrial Chargers provide a solution for your small- to mid-size electric vehicle charging needs.

GREEN2:
- 120 VAC
- 24 V, 36 V, 48 V, or 80 V
- 40 A–70 A

GREEN4:
- 220 VAC
- 24 V, 36 V, 48 V, 80 V, or 96 V
- 50 A–120 A

Features:
- Single-phase battery chargers
- Suitable for lead-acid (flooded, AGM, and gel traction) or lithium batteries
- Multicurrent configurable via front display or USB A/B Port
- Standard CC/CV/Stop profile or CAN Bus option for lithium batteries
- 7-preloaded charging curves
- Specialized charging curves available
- >90% high-energy efficiency
- Charge cycle can begin as low as 2 volts
- Soft start charging cycle
- Reverse polarity protection
- Cables: 6.6 foot AC cable (no receptacle) and 10-foot DC cable
- Durable steel case
- Remanufacturable
- Wall-mounted or stand-mounted

Model	DC Output Voltage	DC Output Current	Flooded 8-Hour Ah Range (C6)	Max AC Input Current	Input Voltage
GREEN2 Dim.: 11.8" x 7.1" x 18.7" Wt.: 25 lbs.					
24-GREEN2-2470	24 V	70 A	600 Ah	25 A	110–120 VAC
24-GREEN2-3645	36 V	45 A	400 Ah	25 A	110–120 VAC
24-GREEN2-4840	48 V	40 A	350 Ah	25 A	110–120 VAC
24-GREEN2-8020	80 V	20 A	220 Ah	25 A	110–120 VAC
GREEN4 Dim.: 13.1" x 7.1" x 20.5" Wt.: 29 lbs.					
24-GREEN4-24120	24 V	120 A	1020 Ah	20 A	208–240 VAC
24-GREEN4-3690	36 V	90 A	750 Ah	25 A	208–240 VAC
24-GREEN4-4875	48 V	75 A	650 Ah	30 A	208–240 VAC
24-GREEN4-4895	48 V	95 A	790 Ah	30 A	208–240 VAC
24-GREEN4-8040	80 V	40 A	340 Ah	25 A	208–240 VAC
24-GREEN4-9635	96 V	35 A	300 Ah	30 A	208–240 VAC

Vertical Industrial Charger Stand

Durable, heavy-duty construction with slim line design for space saving industrial battery charger station configuration(s). Easy-to-install with minimal assembly required.

Features:
- Holds up to two chargers
- Safety-yellow powder coating welded frame
- 2" post diameter
- Includes cross arm and floor bolts

GREEN2 and **GREEN**4 Vertical Charger Stand Mounting Hardware Kit contains hardware to mount one **GREEN** Series single-phase charger.
- (4) M6 X 30 mm Hex Head Bolts
- (8) M6 Flat Washers
- (4) M6 Lock Washers
- (8) M6 Nuts

GREEN6 and **GREEN**8 Vertical Charger Stand Mounting Hardware Kit contains hardware to mount one **GREEN** Series three-phase charger.
- (4) M8 X 30 mm Hex Head Bolts
- (8) M8 Flat Washers
- (4) M8 Lock Washers
- (8) M8 Nuts

GREENXL Hybrid Industrial Battery Charger

FSIP exclusive **GREEN** Series Hybrid Industrial Charger is a high frequency, fully automatic charger for lithium batteries with CAN Bus communication.

Features:
- IGBT architecture
- Fast charge capable
- Multivoltage/multicurrent configurable via the front panel display or USB type A/B port
- CAN Bus communication for lithium batteries
- >89% high-energy efficiency
- Soft charging cycle
- Charge cycles can begin as low as 2 volts
- Hybrid technology: main power transformer that works at the mains frequency plus AC/DC high frequency switching converter
- Reverse polarity protection
- Cables: 10-foot DC cable*
- Durable steel case
- Remanufacturable

* Longer cables available upon request

GREENXL HYBRID Dim.: 25.6" x 21.7" x 55.1" Wt.: 716.5 lbs.						
Model	DC Output Voltage	DC Output Current	Flooded 8-Hour Ah Range (C6)	Flooded 4-Hour Ah Range (C6)	Max AC Input Current	Input Voltage
24-GREENXL480-48450	48 V	450 A	2670–3240 Ah	1330–1630 Ah*	42 A	480 VAC, Three-phase, 60 Hz
24-GREENXL480-48500	48 V	500 A	2960–3610 Ah	1480–1810 Ah*	46 A	480 VAC, Three-phase, 60 Hz
24-GREENXL480-80350	80 V	350 A	2070–2520 Ah	1030–1260 Ah*	50 A	480 VAC, Three-phase, 60 Hz

*To be evaluated based upon the battery technology and application.
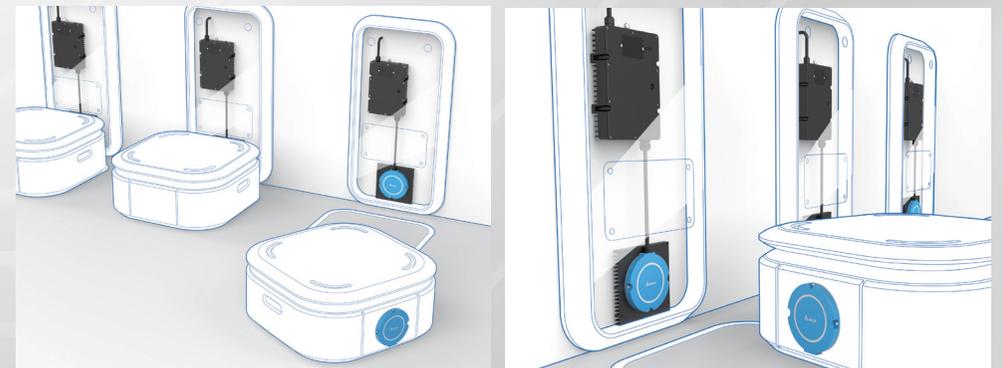
1kW Wireless Charging System

Highly efficient contactless charging for industrial applications, including electric vehicles.

Features:
- Fully automated charging
- Low weight on vehicle
- Versatile
  - Charge any battery type
  - Each primary unit charges 24 V and 48 V
  - CAN bus control or profile charging
  - Reliable and silent operation
- Easy Integration
  - Compact onboard charging unit
  - Intelligent communications
  - Power transfer over a 20 mm gap
- Contactless Power Transfer
  - Efficiency meets traditional wired chargers
  - Safe and unmanned 24/7 operation
  - No connector wear
  - No maintenance downtime

1 kW Wireless Charging System Dim.: 10.51" x 7.44" x 3.18" Wt.: 9 lbs.			
DC Output Voltage	DC Output Current	Max AC Input Current	Input Voltage
24 V	41.7 A	12 A	85–265 VAC
48 V	20.8 A	12 A	85–265 VAC

ChargePlus
Universal High Frequency Chargers

Universal, high frequency, portable, off board lead-acid or lithium battery chargers. Perfect for motive power applications like golf cars, pallet jacks, scissor lifts, floor care equipment, and more.

ChargePlus **FLEX:**
- Programmable voltage and current via keypad
- Adjustable to 12, 24, 36, or 48 volts
- For lead-acid (flooded, AGM or gel) batteries
- Includes all other **Charge**Plus features

ChargePlus**:**
- Available in either 12–48 volt or 60–72 volt models
- >90% high-energy efficiency
- Programmable voltage and current
- Starts charging cycle as low as 2 volts
- Automatic float mode
- Easy-to-read LCD digital display
- 5 foot of cable from charger to stock SB50 DC connector
- Additional 5 foot of cable
- Wide selection of adaptor cables (pigtails) for golf cars or Anderson SB connections

FSIP can remanufacture these products.

Model	DC Output Voltage	DC Output Current	Input Voltage	DC Connector
ChargePlus **FLEX** Dim.: 13.7" x 8.7" x 26.2" Wt.: 78 lbs.				
24-CBHF2M-3625FLEX	12–48 V	25 A	110–120 VAC 50–60 Hz	SB50
ChargePlus Dim.: 13.7" x 8.7" x 26.2" Wt.: 78 lbs.				
24-CBHF2-STKXX	12–48 V	15–30 A	110–120 VAC 50–60 Hz	SB50
24-CBHF2175DCXX	24–48 V	15–30 A	110–120 VAC 50–60 Hz	SB175
24-CBHF2-CC	48 V	20 A	110–120 VAC 50–60 Hz	CC 3-Pin
24-CBHF2-CC36	36 V	25 A	110–120 VAC 50–60 Hz	CC 2-Pin (Crows Foot)
24-CBHF2-EZ36	36 V	25 A	110–120 VAC 50–60 Hz	E-Z-GO 2-Pin (D Shaped)
24-CBHF2-EZ48	48 V	20 A	110–120 VAC 50–60 Hz	E-Z-GO RXV (Triangle)
24-CBHF2-EZ48TXT	48 V	20 A	110–120 VAC 50–60 Hz	E-Z-GO 2-Pin (Notched)
24-CBHF2-STR36	36 V	25 A	110–120 VAC 50–60 Hz	Star 3-Pin
24-CBHF2-STR48	48 V	20 A	110–120 VAC 50–60 Hz	Star 3-Pin
24-CBHF2-YAM	48 V	20 A	110–120 VAC 50–60 Hz	Yamaha 2-Pin
24-CBHF2-YDRE	48 V	20 A	110–120 VAC 50–60 Hz	Yamaha 3-Pin (Clover)
ChargePlus **72 V** Dim.: 13.7" x 8.7" x 26.2" Wt.: 78 lbs.				
24-CBHF2-STKXX	60–72 V	10–12 A	110–120 VAC 50–60 Hz	SB50
24-CBHF2175DC72	72 V	12 A	110–120 VAC 50–60 Hz	SB175
24-CBHF2-CC36-72V	72 V	12 A	110–120 VAC 50–60 Hz	CC 2-Pin (Crows Foot)
24-CBHF2-CC-72V	72 V	12 A	110–120 VAC 50–60 Hz	CC 3-Pin
24-CBHF2-EZ36-72V	72 V	12 A	110–120 VAC 50–60 Hz	E-Z-GO 2-Pin (D Shaped)
24-CBHF2-EZ48-72V	72 V	12 A	110–120 VAC 50–60 Hz	E-Z-GO RXV (Triangle)
24-CBHF2-EZ48TXT-72V	72 V	12 A	110–120 VAC 50–60 Hz	E-Z-GO 2-Pin (Notched)
24-CBHF2-GEM-72V	72 V	12 A	110–120 VAC 50–60 Hz	Ring Terminals
24-CBHF2-STR36-72V	72 V	12 A	110–120 VAC 50–60 Hz	Star 3-Pin
24-CBHF2-STR48-72V	72 V	12 A	110–120 VAC 50–60 Hz	Star 3-Pin
24-CBHF2-YAM-72V	72 V	12 A	110–120 VAC 50–60 Hz	Yamaha 2-Pin
24-CBHF2-YDRE-72V	72 V	12 A	110–120 VAC 50–60 Hz	Yamaha 3-Pin (Clover)

Available pigtails:

Frequently Asked Questions

Xtender Battery Regenerator:

How long is the restoration cycle using an Xtender?
A full battery restoration consisting of two complete discharge and restoration cycles will take approximately 35–45 hours depending upon the initial battery condition.

What's the benefit of hooking the Smart Discharger to the Xtender?
Pairing the Smart Discharger with the Xtender increases the discharge rate from 100 Amps to 200 Amps. This allows you to run a C6 discharge on any battery up to 1,200 Ah.

Why use a BMS (Battery Monitoring Sensor) Kit with the Xtender or Smart Discharger?
The battery monitoring sensors take cell/vehicle battery voltage readings to determine if there is any mechanical damage and its severity. The sensors can indicate whether the battery/cell needs to be replaced. All information is communicated via Bluetooth to the Integrated Monitor software on a laptop. The Integrated Monitor software then provides a detailed graph detailing the health of the battery/cells.

How do I make money with the Xtender?
You can profit by adding a new service for your customers, prolonging rental fleet batteries, or by prolonging used batteries prior to sale.

ChargePlus and ChargePlus FLEX:

What is the purpose of a float mode?
Float mode maintains the battery charge at 100%. The current supplied to the battery cycles on and off. The charger supplies the exact current needed to maintain a healthy 100% charge. Float mode is a safe option if you intend to leave your battery hooked up to a charger for extended periods of time.

I do not see 48 V as an option on the ChargePlus FLEX. How do I access this setting?
The charging voltage is restricted to the voltages available for the selected current. For example, to be able to select 48 V the current must be changed to the correct range first; which for 48 V is 15–20 A. So once you change the current to 15–20 A then 48 V is now available as a selection. Now that the unit is set to 48 V, the only charging currents that will appear in the programming menu will be 15 and 20 A (the range for 48 V).

Can the ChargePlus pigtails be used with the ChargePlus FLEX?
Yes. All the pigtails which help customize the ChargePlus can be used with the ChargePlus FLEX.

Frequently Asked Questions (Cont.)

GREEN Series Industrial Battery Chargers:

What is the warranty on the GREEN Series?
FSIP offers a 3-year industrial application warranty. For full warranty details, go to https://shop.fsip.biz/en/content/terms-conditions. Select FSIP Customer Terms & Conditions.
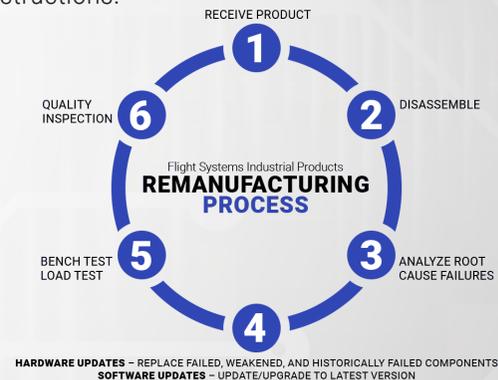
Can I adjust the voltage of my GREEN2 charger?
No, the GREEN2 and GREEN4 single-phase industrial chargers are current adjustable and voltage specific. The charger must be ordered to match your applications' voltage.

For the GREEN6–X three-phase chargers, can bad modules be remanufactured?
Yes. If your unit is under warranty, follow the warranty return process outlined at *https://shop.fsip.biz/en/content/warranties-returns*. If not under warranty, go to *https://shop.fsip.biz/en/content/remanufacturing*. Download the Remanufacture & Return form and follow the instructions.

Are the GREEN Series Industrial Chargers CAN Bus compatible?
Yes. The GREEN Series Industrial Chargers (GREEN2–X) have a standard CC/CV/Stop profile or CAN Bus option for lithium batteries. The GREENXL has CAN Bus for lithium batteries.

I see the GREEN Series are wall-mountable. Do they have to be hung?
The GREEN2 and GREEN4 must be mounted to the wall or on a charger stand. However, the GREEN6, 8, or X may either sit on the floor or may be wall- or stand-mounted. The GREENXL is designed for on-floor use.

Is the GREENXL Hybrid a high-efficiency modular industrial charger?
The GREENXL is an industrial battery charger with >89% efficiency. It has an IGBT architecture for lithium batteries with CAN Bus communications. It is not a modular design.

Delta-Q Onboard & Off Board Chargers

- For lead-acid (wet/flooded, sealed AGM, or gel) or lithium-ion batteries
- Delta-Q chargers have custom-matched charging algorithms to help extend battery life
- Each charger line has an identical mechanical design for easy integrations
- Each charger has customized cabling and charge profiles for better application fit

QuiQ

- Available in 24, 36, 48, and 72 volt packs
- Holds up to 10 optimized charge profiles
- Usable on any worldwide single-phase electrical grid
- Multicolor LED indicator for charging status and fault/error
- Integrated charge cycle and event tracking
- AC input ranges from 85–265 V
- >92% energy efficient

QuiQ1000 / QuiQ1500 Dim.: 10.9" x 9.7" x 4.3" Wt.: 11.0 lbs.				
Model	Delta-Q	DC Output Voltage	DC Output Current	DC Connector
23-912XX00	QuiQ 1000	24–48 V	25–18 A	OEM specific with 12 AWG wire
23-9127200	QuiQ 1000	72 V	12 A	
23-9122400-16	QuiQ 1000	24 V	25 A	Includes SB50 red connector, TYCO Mate-N-Lock interlock plug and 6-pin Deutsch
23-9123600-D1	QuiQ 1000	36–48 V	21–18 A	Ring terminal connections with temp. sensor, interlock and remote display cable for connection to vehicle dash
23-9127200-D1	QuiQ 1000	72 V	12 A	
23-9144800-01	QuiQ 1500	48 V	30 A	OEM specific with 12 AWG wire

RC900

- Mechanical design allows for any orientation
- Great for space restricted areas
- AC Input 85-270 VAC
- CAN Bus communication
- Convection cooling

RC900 Dim.: 11.8" x7.0" x 3.2" Wt.: 8.8 lbs.			
Model	DC Output Voltage	DC Output Current	DC Connector
23-9440003	48 V	20 A	Polk-Yoke threaded fasteners for ring terminals. Negative M6; Postive M8

IC650 / IC900

- Field programmable with up to 25 charge algorithms
- Preprogrammed with 17 lead algorithms
- Update charge profiles with touch of a button
- Deep discharge battery recovery mode, will charge when voltage is as low as 1.2 volts
- USB port for data downloads, support software, and charge profile updates
- AC input range of 85–270 V, enabling global use on any single-phase electrical grid
- AC/DC cables are field-replaceable
- Optional CAN Bus communication and USB host port

IC650 / IC900 Dim.: 9.9" x 7.3" x 3.1" Wt.: <6.5 lbs.				
Model	Delta-Q	DC Output Voltage	DC Output Current	DC Connector
23-9400001	IC650	24 V	27.1 A	M6 threaded fasteners for ring terminals. Universal DC connections.
23-9400001S00X	IC650	24 V	27.1 A	
23-9400002	IC650	36 V	18.1 A	
23-9400004	IC650	24 V	27.1 A	
23-9400021	IC650	24 V	27.1 A	
23-9420010	IC900	48 V	20 A	

ICL1500

- Specifically for lithium-ion batteries (LCO, NCA, NMC, LFP, LTO, etc.)
- CAN Bus communication with battery management system
- Optimized charge profile programming included*
- AC/DC cables, not included
- Locking AC cable, 23-4750496 recommended

ICL1500 Dim.: 11.8" x7.0" x 3.2" Wt.: 8.8 lbs.			
Model	DC Output Voltage	DC Output Current	DC Connector
23-9430006	58 V	33.3 A	Poka-Yoke threaded fasteners for ring terminals. Negative M6; Postitive M8
23-9430011	120 V	18.7 A	

Additional battery information required

FSIP can remanufacture these products.

Additional Onboard Charger

TORO 720

- Reverse polarity and charge time out protection as well as OTP/OCP/OVP
- BLE APP for charging monitoring and data logging
- Battery temperature sensor
- 1.0 A interlock
- Output range of 360–720 W and 15–30 A
- AC input voltage range of 100–240 VAC – 50–60 Hz
- High efficiency of up to 92%
- Suitable for lead-acid batteries (Wet/gel/agm) and lithium batteries
- High IP grade of IP66
- Includes software to support charger programming, battery troubleshooting and charge cycle data analysis

TORO 720 Dim.: 10.51" x 7.44" x 3.18" Wt.: 9 lbs.			
Model	**DC Output Voltage**	**DC Output Current**	**DC Connector**
24-TORO720-2430	24 V	30 A	JONHON ICA-BY20F0200J, 2 pins

Battery Care & Test Equipment

DisChargePlus

Discharges and tests 36 or 48 volt battery packs

- Auto-senses battery voltage to determine appropriate discharge rate
- Programmable discharge rates of 25 A, 56 A, or 75 A
- Automatically stops discharge cycle based on either volts per cell or 400 minutes elapsed time
- No AC power required
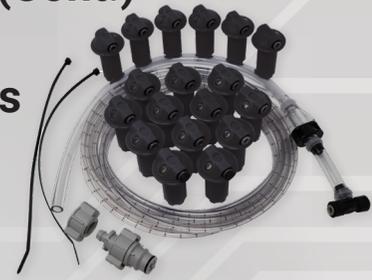- Includes 200 Amp battery connection clamps and 8-foot DC cable

Model	Output Voltage	Load Capacity	Dim.	Wt.
94-DCP3648	36–48 V	25 A, 56 A, 75 A	15.5" x 6.25" x 14"	16.7 lbs.

Battery Care & Test Equipment (Cont.)

Point-to-Point Watering Systems (24, 36, 48 or 72 volt)

Systematically fill all battery cells to the same level at the same time.

- Available in 12 Cell, 24 V; 18 Cell, 36 V; 24 Cell, 48 V; 36 Cell, 72 V
- Kink-and crush-resistant tubing
- Push-fit ports
- DirectLink connects your wall tap/spigot to fill the Stealth Watering System *(Sold separately)*
- Use Single Point Watering Adapter (94-SPWGUN) for regulated water flow

Stealth Watering Systems do not work with Crown Battery's Max Haul battery or GNB Industrial Power's flat-plate battery.

Hydrovolt Battery Acid Tester

Measures the specific gravity of a wet cell battery electrolyte, then determines the charge status at all electrolyte temperatures to determine if acid was lost.

- Compact size
- Large, easy-to-read scale with quick check-colored sectors
- Readings independent of vertical positioning of instrument
- Fast, bubble-free intake of fluid sample
- Automatic airlock prevents fluid loss and air bleed
- Unexcelled temperature compensation and measuring accuracy
- Sturdy, shock-resistant materials, completely non-corrosive

Water Deionizer System & Watering Gun

Purifies and dispenses water for your battery refilling needs.

- 20-foot output hose
- Watering gun lets you fill a battery directly from the deionizer
- Mounting plate with hose hanger
- Easy-to-use

FSIP

**1015 HARRISBURG PIKE
CARLISLE, PA 17013
800-333-1194**

**80S FAIRBANK STREET
SUITE #7
ADDISON, IL 60101
800-804-5711**

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