Charger Solutions Customized to Meet Your Material Handling Power Needs

REVOLUTION Modular High Frequency Battery Chargers

CONVENTIONAL, OPPORTUNITY & FAST MODULAR CHARGERS

Innovative modular architecture with long term savings

Designed, Engineered and Manufactured In the USA

The REVOLUTION Series is an innovative line of high frequency battery chargers that incorporates cutting edge modular power design that delivers peak efficiency greater than 93% and efficiencies greater than 90% throughout the entire charge cycle. As the charge cycle progresses and the output current tapers down, the charger will turn off unneeded modules, allowing the remaining modules to operate at peak efficiency.

- *Modular architecture that is scalable and reliable*
- *Multi-voltage 1.3kW power modules, that can be combined to produce over 30kW output*
- *"Plug and Play" utility makes expansion easy and inexpensive*
- *Can be programmed for conventional, opportunity or fast applications*
- *Single cable outputs for up to 450 amps*
- *No Downtime! Charger remains operational if a power module fails*
- *Wireless Communication*

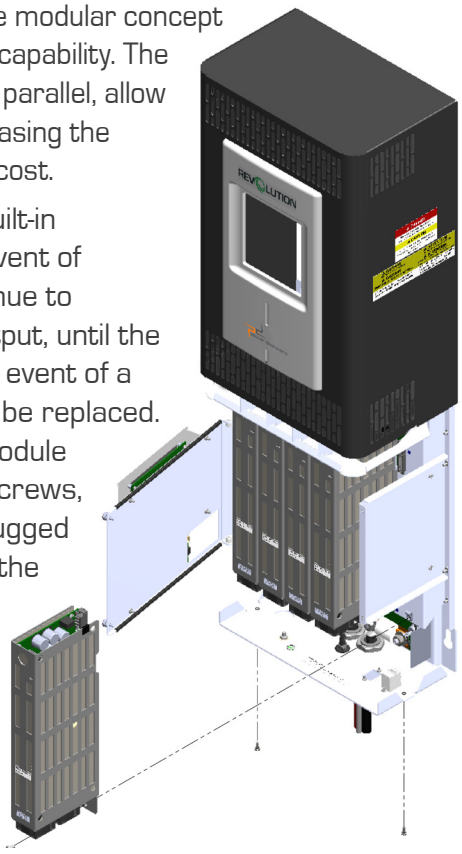
The REVOLUTION Series is a combination of cutting edge charging and energy management technologies, with a smaller footprint, lower acquisition costs, easy maintenance, and flexible configurations, which makes updating your fleet of electric lift trucks a more attractive investment than ever before. Free your operation from spare batteries, daily battery changes, battery storage areas, and energy inefficient charging!

REVOLUTION

Variable Configuration Architecture

The REVOLUTION series of chargers are modular concept chargers offering multiple configuration capability. The independent power modules, installed in parallel, allow the user to add individual modules, increasing the charger's output for a minimal upgrade cost.

The parallel module design provides built-in redundancy that ensures that in the event of a module failure the charger will continue to operate, at a slightly lower current output, until the problematic module is replaced. In the event of a module failure, the module can quickly be replaced. The charger display will indicate the module failure and with the removal of a few screws, the faulted module can simply be unplugged and a new module plugged in, replace the door, re-energize the charger, and it is back to work. The unique modular architecture provides unmatched value, as diagnosis and repair of an REVOLUTION is the simplest and fastest of any charger in service today.



Unmatched energy savings

- *Highest charging efficiency throughout the entire charge cycle*
- *Lowest energy costs related to battery charging*
- *Latest generation MOSFET power conversion technology*
- *CEC Compliant*

Cost effective with long term savings

- *Charger can be programmed for lead acid and lithium batteries*
- *Eliminates the need to replace chargers as your lift truck/battery fleet changes in the future*
- *PowerCharge.Net monitoring system option allows you to collect and analyze fleet utilization information from a single location, optimizing your cost savings*

The REVOLUTION charger, when combined with the PowerTrac 3 or SP+ data logger, has the ability to be multi-voltage (24/36/48), allowing the charger to automatically recognize and charge a wide range of batteries and amp hour capacities. Plus, it provides detailed fleet management information.

REVOLUTION Charger Specifications

Model	Module Size	Output Voltage	4kW	5kW	6kW	8kW	9kW	10kW	12kW	13kW	14kW	15kW	18kW	21kW	23kW	26kW	29kW	31kW
Maximum Current Output																		
5X	36	24V/36V	90	120	150													
	48	24V/36V/48V	75/67	100/90	125/112													
8X	36	24V/36V			150	180	210	240										
	48	24V/36V/48V			125/112	150/135	170/157	200/180										
12X	36	24V/36V						240	270	300	330	350						
	48	24V/36V/48V						200/180	225/202	250/225	275/247	300/270						
16X	36	24V/36V										360	420[SC]	480				
	48	24V/36V/48V										300/270	350/315[SC]	400/360[SC]				
24X	36	24V/36V													540	600	660	700
	48	24V/36V/48V													450/405[SC]	500/450[SC]	550/495	600/540

Number of Modules	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24
Charger kW Rating	3.9	5.2	6.5	7.8	9.1	10.4	11.7	13.0	14.3	15.6	18.2	20.8	23.4	26.0	28.6	31.2
Input Current Draw	5.5	7.4	9.2	11.1	12.9	14.8	16.6	18.5	20.3	22.2	25.9	29.6	33.3	37.0	40.7	44.4

AC Breaker	5X: 15A 8X: 20A 12X: 30A 16X: 40A 24X: 60A
Max. Input Current	5X: 10A 8X: 15A 12X: 22A 16X: 30A 24X: 44A
Input Voltage	480VAC, 3-phase ± 10%
Efficiency	Total charge cycle efficiency > 90% Peak charging efficiency > 93%
User Interface	LCD/Keypad, Ethernet (optional)
Cooling	Forced air (fans)
Dimensions (WxDxH)	5X: 12.5" x 8.5" x 20.25" 8X: 18.5" x 9.5" x 21" 12X: 26.5" x 9.5" x 21" 16X: 22" x 10" x 48" 24X: 30" x 10" x 48"
Weight	5X: ≤ 56 lbs 8X: ≤ 81 lbs 12X: ≤ 120 lbs 16X: ≤ 210 lbs 24X: ≤ 300 lbs
Certifications	UL and cUL listed; CEC Compliant

Conventional charge rate based on 17% start rate
Opportunity charge rate based on 25% start rate
Fast charge rate based on 40% start rate

48V chargers are capable of charging 24/36/48 batteries
36V chargers are capable of charging 24/36 batteries

[SC] Single cable versions available please contact Power Designers for more details

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