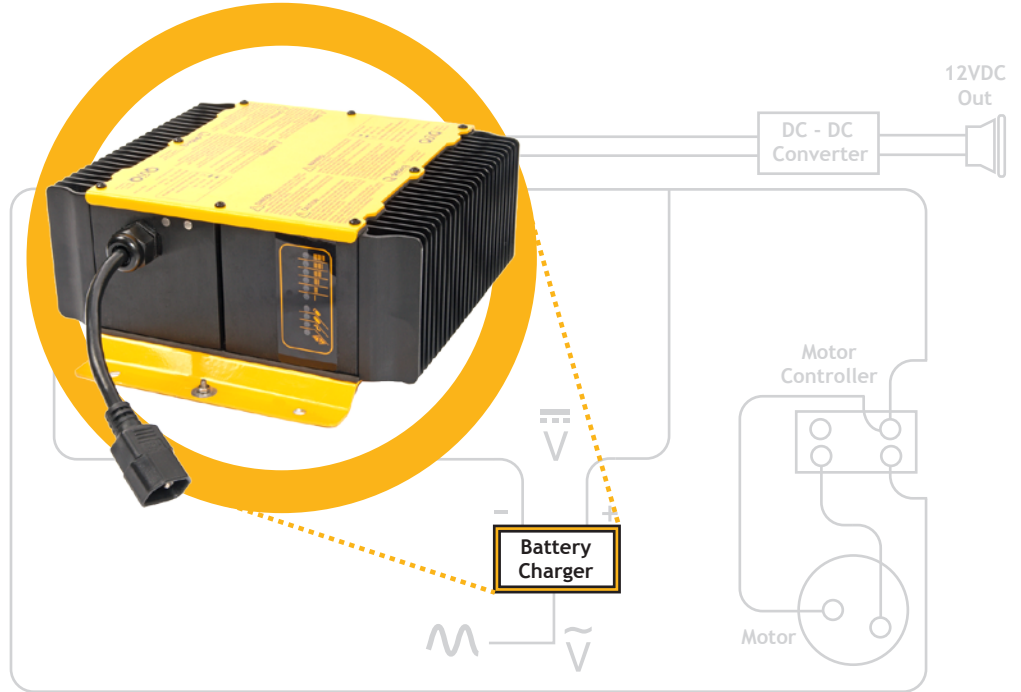




**NOW IN
84V and
96V**

- ✓ **High Reliability**
- ✓ **High Performance**
- ✓ **Unbeatable Value**



Universal Input

QuiQ is designed with a wide input voltage range from 85 - 265 VAC, making it an ideal choice for any worldwide application. Power Factor Correction and 12A maximum current draw ensures the charger will work reliably from any power outlet in the world, even through surges and sags.

Standardizing on a single universal model reduces component count, saving vehicle OEMs manufacturing and service inventory management costs.

Reduced Operating Costs

The high-efficiency design and near unity Power Factor combine to make the QuiQ charger extremely grid-friendly. Over 88% of power taken from the grid is converted to real power to charge the battery. This not only saves users over 30% in raw electricity costs when compared to ferro-resonant chargers, but avoids Power Factor surcharges from utilities as well.

Simple Offboard Operation

Configured with an optional panel mount connector and OEM specific DC output cord, the QuiQ can be easily used to off-board charge almost any vehicle.

Approved Charge Algorithms

The QuiQ's intelligent microprocessor controller can store up to 10 Delta-Q-developed optimized charge algorithms. Delta-Q has designed algorithms for many types of batteries, and is constantly preparing algorithms for new battery types, sizes and chemistries. Battery manufacturers certify Delta-Q algorithms because they help improve battery life and minimize maintenance. Delta-Q configures chargers with the most appropriate set of algorithms for each OEM's applications. Manufacturing and field service personnel can easily toggle between algorithms and, with new field reprogrammable chargers, download new algorithms into the charger "on the fly."

Regulatory Compliance

All Delta-Q chargers are UL and CE compliant and have passed stringent EMI, safety, vibration and water ingress protection (IP) tests. QuiQ offers leading-edge efficiency, power factor correction and GFCI compatibility for safe and reliable operation.

Designed for Onboard Use

QuiQ is built for onboard operation in harsh environments. Its rugged, lightweight and intelligent design provides continuous operation in any application. High efficiency power conversion allows the QuiQ to be delivered in a fully sealed enclosure, making it ideal for onboard applications in the dirtiest and wettest environments. Reliability is increased by the reduction of moving parts.

For more information contact:

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Unit 3, 5250 Grimmer Street
Burnaby, BC V5H 2H2
Canada

tel: 604.327.8244
fax: 604.327.8246
email: info@delta-q.com
www.delta-q.com



- Advanced high frequency switching design and 90% typical efficiency
- Wide range AC input (85 - 265 VAC) for worldwide operation
- Fully sealed enclosure provides improved reliability in demanding environments
- > 0.99 Power Factor minimizes utility surcharges and optimizes use of AC power
- Approved battery charge algorithms for ideal charging (default I₁, I₂, U, I_{3a})

QuiQ HF/PFC Battery Charger Specifications

subject to change without notice

DC Output	QuiQ Model: 912- or 913-					
	24xx	36xx	48xx	72xx	84xx	96xx
DC Output Voltage - nominal	24 V	36 V	48 V	72 V	84 V	96 V
DC Output Voltage - maximum	34 V	51 V	68 V	100 V	120 V	135 V
DC Output Current - maximum	25 A	21 A	18 A	12 A	10 A	9 A
Interlock Current - maximum	1 A	1 A	1 A	0.5 A	0.5 A	0.5 A
Battery Type	Specific to selected algorithm					
Reverse Polarity	Electronic protection - auto-reset					
Short Circuit	Electronic current limit					

AC Input

AC Input Voltage - range	85 - 265 VAC
AC Input Voltage - nominal	120 VAC / 230 VAC rms
AC Input Frequency	45 - 65 Hz
AC Input Current - maximum/nominal	12 A / 9.5 A rms @ 120 VAC or 5 A rms @ 230 VAC
AC Power Factor - nominal	> 0.99 @ 120 VAC / > 0.98 @ 230 VAC

Mechanical

Dimensions	28.0 x 24.6 x 11.0 cm (11 x 9.7 x 4.3")
Weight	< 5 kg (< 11 lbs) w/standard output cord
Environmental	Enclosure: IP46 (NEMA4)
Operating Temperature	-30°C to +50°C (-22°F to 122°F), derated above 30°C (86°F), below 0°C (32°F)
Storage Temperature	-40°C to +70°C (-40°F to 158°F)
AC input connector	IEC320/C14 (require ≥ 1.8m localized cord)
DC output connector	OEM specific w/12AWG wire

Regulatory

Safety	UL2202, UL1564 2nd Edition, CSA-C22.2 No. 107.2, EN 60335-1/2-29
Emissions	FCC Part 15/ICES 003 Class A, EN 55011, EN 61000-3-2, EN 61000-3-3
Immunity	EN 61000-4-2/-3/-4/-5/-6/-11

Operation

AC ON	Solid YELLOW AC LED
>80% Charge Indicator	Solid YELLOW Charge LED
100% Charge Indicator	Solid GREEN Finish LED
Fault Indicator	Flash RED Fault LED
DC Ammeter	LED Bargraph (6 level)
Long-term Storage Mode	Auto-restart if battery voltage < 2.1 V/cell or 30 days elapse

Special Features

Battery Temperature Monitoring	Temperature Sensor on negative ring terminal
External Communications	PC-based configuration software for field programmability

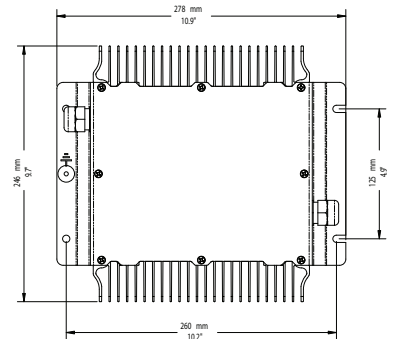
Options

- Custom Remote LEDs
- MODBUS Serial Communications
- Panel Mount DC Connector
- OEM Specific DC Output Cord
- Localized AC Input Cord
- Reverse or Dry Contact Interlocks



Available with optional Panel Mount DC Connector (36V unit shown), OEM Specific DC Output Cord and Localized AC Input Cord.

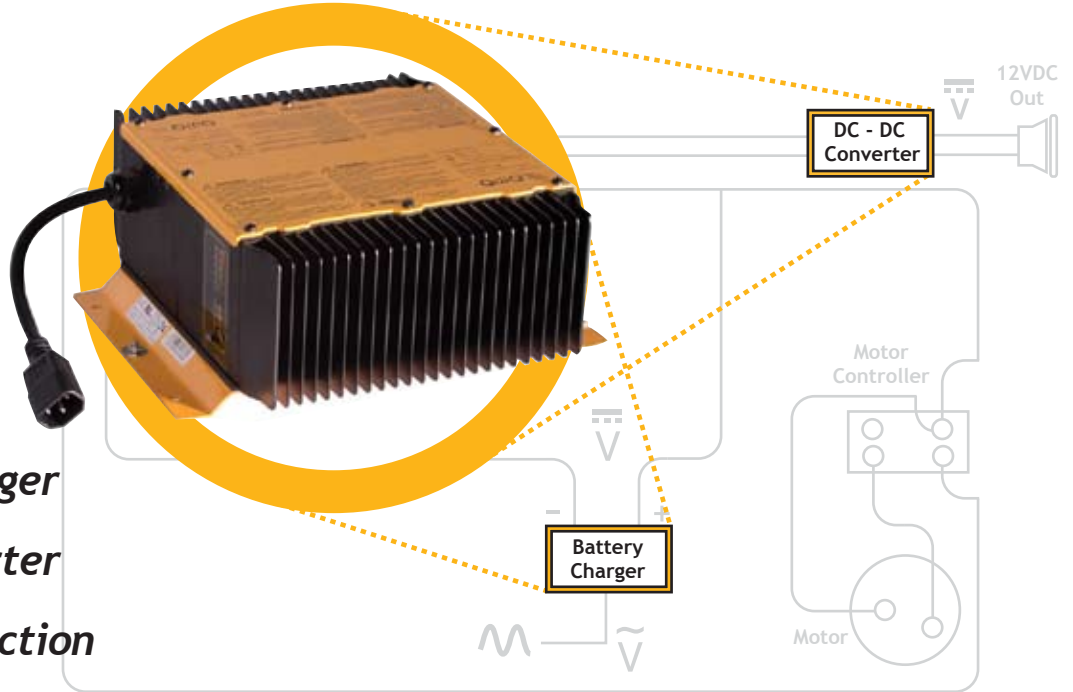
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- ✓ **1kW HF/PFC Charger**
- ✓ **400W 12V Converter**
- ✓ **System Cost Reduction**

Designed for Onboard Use

The QuiQ-dci is specifically built for onboard operation in harsh automotive environments. Rugged, lightweight and intelligent design provides continuous operation in any application. High efficiency power conversion allows the QuiQ-dci to offer 1 kiloWatt of charging and 400 Watts of DC power in the same fully sealed enclosure. Reliability is increased by the reduction of moving parts and cable interconnections.

Approved Charge Algorithms

The QuiQ-dci can store up to 10 Delta-Q-developed charge algorithms. Delta-Q has designed algorithms for many battery types, sizes and chemistries, and battery manufacturers have certified them. Manufacturing and field service personnel can easily toggle between algorithms as batteries change and download new algorithms into the charger “on the fly.”



Universal Input

QuiQ-dci is designed with a wide input voltage range from 85 - 265 VAC, making it an ideal choice for any worldwide application. Power Factor Correction and 12A maximum current draw ensures the charger will work reliably from any power outlet in the world, even through surges and sags.

The isolated 400 Watt DC-DC converter provides clean, continuous power from your 48V or 72V battery pack, without taking any more valuable space.

Regulatory Compliance

The QuiQ-dci is UL and CE compliant and has passed stringent EMI, safety, vibration and water ingress protection (IP) tests. QuiQ-dci offers leading-edge efficiency, power factor correction and GFCI compatibility for safe and reliable operation.

System Cost Reduction

Replace two separate components with the QuiQ-dci, and take advantage of space, weight, storage, inventory management, wiring harness, installation labor and field service savings.

The QuiQ-dci is that unique product that meets all the typical design constraints faced by the electric vehicle engineer.

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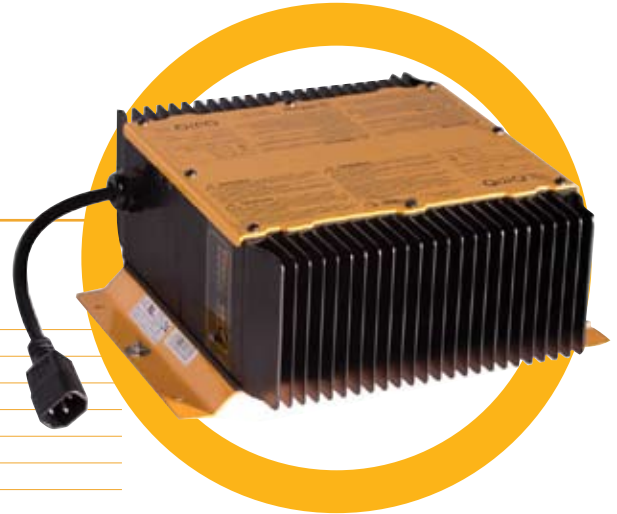


- Integrated unit saves space, weight and cabling, while increasing system reliability
- Advanced high frequency switching design and 90% typical efficiency
- Wide range AC input (85 - 265 VAC) for worldwide operation
- Fully sealed enclosure provides improved reliability in demanding environments
- > 0.99 Power Factor minimizes utility surcharges and optimizes use of AC power
- Approved battery charge algorithms for ideal charging (default I₁, I₂, U, I_{3a})

QuiQ-dci HF/PFC Battery Charger / DC-DC Converter Specifications

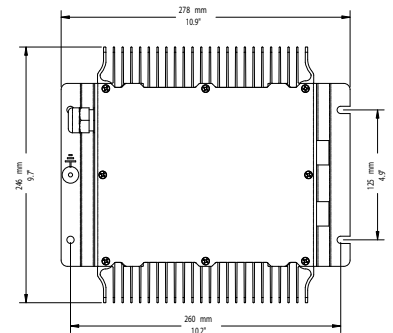
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	QuiQ Model: 922- or 923-	
	48xx	72xx
DC Output (Charger)		
DC Output Voltage - nominal	48 V	72 V
DC Output Voltage - maximum	68 V	100 V
DC Output Current - maximum	18 A	12 A
Interlock Current - maximum	1 A	0.5 A
Battery Type	Specific to selected algorithm	
Reverse Polarity	Electronic protection - auto-reset	
Short Circuit	Electronic current limit	
DC Output (Converter)		
DC Output Voltage	13.5 +/- 0.7 V	
Output Current - continuous/peak	30 A / 60 A	
Output Lines	Switched, Direct (unswitched)	
No-load power draw	< 0.7 W	
DC Input (Battery) Voltage - range	35 - 87 V	50 - 130 V
Operating Temperature	-30°C to +70°C (-22°F to 158°F)	
AC Input		
AC Input Voltage - range	85 - 265 VAC	
AC Input Voltage - nominal	120 VAC / 230 VAC rms	
AC Input Frequency	45 - 65 Hz	
AC Input Current - maximum/nominal	12 A / 9.5 A rms @ 120 VAC or 5 A rms @ 230 VAC	
AC Power Factor - nominal	> 0.99 @ 120 VAC / > 0.98 @ 230 VAC	
Mechanical		
Dimensions	28.0 x 24.6 x 11.0 cm (11 x 9.7 x 4.3")	
Weight	< 6 kg (< 13 lbs)	
Environmental	Enclosure: IP46 (NEMA4)	
Operating Temperature	-30°C to +50°C (-22°F to 122°F), derated above 30°C (86°F), below 0°C (32°F)	
Storage Temperature	-40°C to +70°C (-40°F to 158°F)	
AC input connector	IEC320/C14 (require ≥ 1.8m localized cord)	
DC output connector	OEM specific w/12AWG wire	
Regulatory		
Safety	UL2202, UL1564 2nd Edition, CSA-C22.2 No. 107.2, EN 60335-1/2-29	
Emissions	FCC Part 15/ICES 003 Class A, EN 55011, EN 61000-3-2, EN 61000-3-3	
Immunity	EN 61000-4-2/-3/-4/-5/-6/-11	
Operation		
AC ON	Solid YELLOW AC LED	
>80% Charge Indicator	Solid YELLOW Charge LED	
100% Charge Indicator	Solid GREEN Finish LED	
Fault Indicator	Flash RED Fault LED	
DC Ammeter	LED Bargraph (6 level)	
Long-term Storage Mode	Auto-restart if battery voltage < 2.1 V/cell or 30 days elapse	
Special Features		
Battery Temperature Monitoring	Temperature Sensor on negative ring terminal	
External Communications	PC-based configuration software for field programmability	
Options		
• Custom Remote LEDs	• MODBUS Serial Communications	
• OEM Specific DC Output Cords	• Localized AC Input Cord	



Rear view of QuiQ-dci shows Panel Mount DC Connectors (48 V output green, 12 V output black). Mate with OEM Specific DC Output Cords.

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