



## **Delta-Q Technologies RQ Series**

350W Battery Charger for Lithium and Lead-Acid Battery Chemistries

The RQ Series are compact, rugged and highly efficient automotive grade battery chargers. Designed for worldwide installation, its latest charging technology effectively charges lead-acid and lithium-ion batteries for optimal performance. CANbus communication (CANopen and J1939 protocols) allows for BMS controlled charge, vehicle and telematics system integration. Suitable for floor machines, pallet trucks, MEWP, OPE and e-mobility.



| Available Models | 12V      | 24V      | 36V      | 48V      |
|------------------|----------|----------|----------|----------|
| RQ 350 Models    | <b>/</b> | <b>~</b> | <b>~</b> | <b>~</b> |

## **Features**



#### Sealed and Rugged

IP66 rated to protect against water and dirt ingress. Designed to withstand automotive shock and vibration.



#### **Residential and Automotive Emissions**

FCC B / CISPR 14 compliant for installation on residential power circuits. UNECE R10 compliant for electromagnetic compatibility on road vehicles.



#### **Safety Protection**

Protects against reverse polarity, short-cirucuit, overcurrent and AC over voltage up to 420V AC.



#### **Can Bus Communication**

CANopen and J1939 protocols to interact with vehicle, telematics and lithium BMS. CAN bus can be used to also update charger software, load chargng profiles, and download charge tracking and diagnostic information.



LED's to indicate charging status, errors and faults. Push button to update charge profile in the field



#### **Charge Quality**

Highly optimized charging to prolong battery life and application requirements using Delta-Q's extensive library of charging algorithms.

## **OEM Features**

- Wide AC input voltage (85-270V) for worldwide installation
- >92% peak efficiency and compliant to global efficiency standards
- AC over voltage protection up to 420V AC for EU and Asia
- Safety interlock feature to prevent vehicle movement while charging
- Field programmable with up to 25 charge profiles
- Auto- recharge in maintenance mode
- Optional carrying handle for portability

# **Applications**













| DC Output                                           | 12V                                                                                                                                   | 24V                                                                                                   | 36V       | 48V       |  |  |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------|-----------|--|--|
| Max DC output voltage                               | 24 VDC                                                                                                                                | 36 VDC                                                                                                | 60 VDC    | 72 VDC    |  |  |
| Max DC output current                               | 15 A                                                                                                                                  | 13 A                                                                                                  | 10 A      | 7 A       |  |  |
| Max DC output power                                 | 150 W                                                                                                                                 | 350 W                                                                                                 |           |           |  |  |
| Deep discharge recovery (Lead-acid minimum voltage) | 0.1 Volts per cell                                                                                                                    |                                                                                                       |           |           |  |  |
| Dry contact interlock current rating                | Standard: 1.0 A<br>Optional: 5.0 A                                                                                                    |                                                                                                       |           |           |  |  |
| Lithium final charging voltage                      | 12-24 VDC                                                                                                                             | 24-36 VDC                                                                                             | 36-54 VDC | 48-72 VDC |  |  |
| Lithium cells in series                             | Up to 5                                                                                                                               | 5 to 9                                                                                                | 8 to 14   | 10 to 19  |  |  |
| Battery type                                        | Lead-acid (wet / AGM / gel), lithium-ion                                                                                              |                                                                                                       |           |           |  |  |
| Reverse polarity                                    | Electronic protection with auto-reset                                                                                                 |                                                                                                       |           |           |  |  |
| Short circuit                                       | Electronic current limit                                                                                                              |                                                                                                       |           |           |  |  |
| AC Input                                            | 12V                                                                                                                                   | 24V                                                                                                   | 36V       | 48V       |  |  |
| AC input voltage range                              | 85-270 VAC                                                                                                                            |                                                                                                       |           |           |  |  |
| Nominal AC input voltage range                      | 100-240 VAC                                                                                                                           |                                                                                                       |           |           |  |  |
| Nominal AC input frequency                          | 50/60 Hz                                                                                                                              |                                                                                                       |           |           |  |  |
| Max AC input current                                | Up to 1.7 A                                                                                                                           | 3.8 A                                                                                                 |           |           |  |  |
| Nominal AC input current                            | 1.5 A @ 120 VAC                                                                                                                       | 1.5 A @ 120 VAC 3.2 A @ 120 VAC                                                                       |           |           |  |  |
|                                                     | 1.3 A @ 240 VAC 1.6 A @ 240 VAC                                                                                                       |                                                                                                       |           |           |  |  |
| Nominal AC power factor                             | >0.99 @ 120 VAC, >0.98 @ 230 VAC                                                                                                      |                                                                                                       |           |           |  |  |
| Mechanical                                          | All Models                                                                                                                            |                                                                                                       |           |           |  |  |
| Dimensions                                          | 200 x 145 x 60 mm (7.8 x 5.7 x 2.3")                                                                                                  |                                                                                                       |           |           |  |  |
| Weight                                              | 1.5 kg (3.3 lbs)                                                                                                                      |                                                                                                       |           |           |  |  |
| AC input connector                                  | IEC320/C14 with country-specific AC cord                                                                                              |                                                                                                       |           |           |  |  |
| DC output connector                                 | OEM customizable output connector                                                                                                     |                                                                                                       |           |           |  |  |
| Mounting holes                                      | M4 diameter slots                                                                                                                     |                                                                                                       |           |           |  |  |
| Cooling                                             | Natural convection                                                                                                                    |                                                                                                       |           |           |  |  |
| Regulatory*                                         | All Models                                                                                                                            |                                                                                                       |           |           |  |  |
| Efficiency                                          | 93% peak efficiency; California Energy Commission (CEC) and Department of Energy (DOE) compliant                                      |                                                                                                       |           |           |  |  |
| Safety                                              | CE, UL1564, EN 60335-2-29, AS/NZS60335 (RCM)                                                                                          |                                                                                                       |           |           |  |  |
| Emissions                                           | <b>All Models:</b> FCC Part 15 / ICES 003 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-3, CISPR 14.1 <b>RQ 350W 48V:</b> UNECE R10 |                                                                                                       |           |           |  |  |
| Immunity                                            | <b>All Models:</b> CISPR 14.2, EN 61000-6-2 (Industrial) <b>RQ 350W 48V:</b> UNECE R10                                                |                                                                                                       |           |           |  |  |
| Environmental                                       |                                                                                                                                       | All                                                                                                   | Models    |           |  |  |
| Enclosure                                           | IP66 (NEMA4)                                                                                                                          |                                                                                                       |           |           |  |  |
| Mechanical shock & vibration                        | Shock: ISO 16750-3 c                                                                                                                  | Shock: ISO 16750-3 chap. 4.2.2. Vibration: ISO 16750-3 chap. 4.1.2.4 (Test IV: vehicle body) GMW 3172 |           |           |  |  |
| Operating temperature                               | -40°C to +65°C (-40°F to 149°F)                                                                                                       |                                                                                                       |           |           |  |  |
| Storage temperature                                 |                                                                                                                                       | -40°C to +85°C (-40°F to 185°F)                                                                       |           |           |  |  |

### \*Regulatory certifications pending

Specifications are subject to change.

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