



IC

900



Available models:

24 V / 37.5 A

36 V / 25 A

48 V / 20 A

Delta-Q IC900

900 W Industrial Battery Charger

Capable of charging lead acid (wet, AGM, gel) and lithium battery chemistries, the IC900 Charger is available in on- and off-board configurations. Optional CAN bus communication ensures seamless machine integration and AC/DC cabling is completely customizable. Applications include boom lifts, lift trucks, floor care machines, speciality golf vehicles, utility vehicles, motorcycles, and scooters.



High Reliability

Engineered using design for reliability. Validated for long service life in worst-case operating conditions. Manufactured in a world class facility specializing in high reliability solutions.



Charge Quality

Charge profiles to precisely charge deep-cycle lead acid and lithium batteries. Developed in Delta-Q's battery lab to balance charge time, battery life and application requirements.



Easy to Integrate

Assists machine troubleshooting with built-in charge cycle tracking. Download data / upgrade software through USB host port. Optional CAN bus communication enables deep machine integration, diagnostics and control.



Global + Efficient

Capable of operating reliably on any single-phase grid worldwide. High-efficiency performance for electricity savings and shorter charge times.

The IC900 Charger is currently undergoing regulatory approval and is anticipated to comply with the following safety regulatory requirements: UL, CEC, CE, and RCM. Additional certifications can be pursued based on market demand.

IC900 Charger Specifications

DC Output	24 VDC	36 VDC	48 VDC
Maximum DC output voltage	36 V	54 V	72 V
Maximum DC output current	37.5 A	25.0 A	20.0 A
Maximum DC output power	900 W		960 W
Deep discharge recovery (minimum voltage)	1.2 V	1.8 V	2.4 V
Maximum interlock signal current	10 A		
Maximum solid state relay current rating (COMM models)	10 A		
Battery type	Lead acid (wet / AGM / gel), lithium		
Reverse polarity	Electronic protection with auto-reset		
Short circuit	Electronic current limit		

AC Input			
AC input voltage range	85-270 VAC		
Nominal AC input voltage	100-240 VAC		
Nominal AC input frequency	50 / 60 Hz		
Maximum AC input current	10.5 A		
Nominal AC input current	10.1 A @ 100 VAC	8.4 A @ 120 VAC	
	4.4 A @ 230 VAC	4.3 A @ 240 VAC	
Power factor	>0.99 @ 120 VAC	>0.98 @ 230 VAC	

Regulatory	
Efficiency	90% at full load, 120 VAC, 48 VDC 92% at full load, 240 VAC, 48 VDC California Energy Commission (CEC) standards pending
Safety	Pending: UL1564, CSA 107.2, EN 60335-2-29, AZ/NZS60335 (RSM)
Emissions	FCC Part 15 / ICES 003 Class A, EN55011
Immunity	EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4

Environmental		
Operating temperature	-40°C to +65°C (-40°F to 149°F)	Derated output at >40°C (104°F)
Storage temperature	-40°C to +85°C (-40°F to 185°F)	
Ingress protection	Charger rated IP66 (Complete protection against contact, dust, and powerful water jets) with sealed Delta-Q AC cord AC input connector rated to IP20 (protect against dust and water -- keep clean and dry) with a non-Delta-Q AC cord	
Chemical	MIL 810-G, Method 504.1: Withstands exposure to chemicals typically found in application (battery acid, salt, cleaners, fertilizers, etc.)	
Salt	Withstands 720 hours (30 days) salt spray test per GMW 3172 with 5% (w/w) salt solution (pH 6.5-7.2) at 35°C (95°F) without degradation of performance	
Shock / vibration	Infrequent shock: 100g, 11ms half-sine pulse, 3 cycles in each of 3 axes Repetitive shock (bump): 25g, 11ms, 2400 cycles Vibration: Random vibration of 4.55g from 10-1000Hz for 8 hours in each of 3 axes, using the sprung mass profile of GMW 3172	
Humidity	0 to 95% non-condensing	
Altitude	< 15,000 feet derated above 20°C	



Usability Features

- + Optional CAN bus communication for machine integration or lithium BMS
- + Multi-color LED indicator for AC source, battery status, charging, error, fault
- + Numeric display for charge profile, alarm/fault codes
- + Field programmable with up to 25 charge profiles
- + Auto-recharge for low voltage in maintenance mode
- + OEM customizable, field replaceable cable design

IC900 Charger Specifications

Mechanical	
Dimensions	Charger: 33.5 x 17.9 x 10.2 cm (13.2 x 7.0 x 4.0")
	Shipping carton: 38.7 x 23.0 x 20.0 cm (15.2 x 9.1 x 7.9")
Weight	Charger: 4.4 kg (9.6 lbs)
	Shipping carton: 5.0 kg (11.0 lbs)
AC input connector	IEC320/C14 Receptacle with Delta-Q AC cord retention tabs
DC output connector	M6 threaded fasteners for ring terminals, field replaceable in the event of cross-threading or other damage Allowable cable diameter depends on cable clamp orientation: 6.5mm (2 x 6AWG) 1c cable or 10mm (12AWG) 4c cord
Signal Connector	IC900 BASE
	6.3 mm (1/4") blade terminals: C1 - Battery Temp Sense '-' C2 - Battery Temp Sense '+' C3 - Interlock Signal L1 - Remote LED '+' L2 - Remote LED '-'
Signal Connector	IC900 COMM
	6.3 mm (1/4") blade terminals - C1, C2, C3, L1, L2 TE AmpSeal automotive connector (IP6K9K rated) - mates with TE Connectivity AmpSeal Plug (p/n: 776273): Signals for CANbus (isolated); Remote status indicators; Battery temp sense; Solid State Interlock
Service port	Sealed (IP66) USB 2.0 Host Port (Type A) with dust cover
Mounting holes	6.4mm (1/4") dia. slots in each corner allow for safe installation on a shelf or on a wall or bulkhead
Cooling	Active cooling (Variable speed, Field serviceable, Field replaceable, Fan)

Operation						
Status indicators	AC present, charging status (low state-of-charge, high state-of-charge, complete), alarm, fault, USB activity					
Numeric display	Displays selected charging profile, alarm and / or fault codes					
Long-term storage mode	Automatic restart to maintain battery state-of-charge and prevent sulphation or freezing					
Power source	Charge control circuitry powered from AC input. Backup power provided by battery if AC not present.					
	24 VDC BASE	36 VDC BASE	48 VDC BASE	24 VDC COMM	36 VDC COMM	48 VDC COMM
Standby AC power consumption	< 2.2 W	< 2.2 W	< 2.4 W	< 2.3 W	< 2.4 W	< 2.6 W
Quiescent DC current (connected to battery only)	< 27 mA (0.65 W)	< 18 mA (0.65 W)	< 15 mA (0.72 W)	< 62 mA (1.5 W)	< 42 mA (1.5 W)	< 33 mA (1.6 W)
<i>Note: for up to 18 days, after which current draw is < 9 mA</i>						

Communications / Signals	IC900 BASE	IC900 COMM
Battery temperature input	Isolated temperature sensor signals (mates with Delta-Q isolated battery temperature sensors)	
Interlock signal	Normally-Closed (NC) Signal - Batt+ Voltage on C3 when AC not present	
Solid State Interlock Relay	Not available	NC Relay Contact - 80 VDC max, 10 ADC max (polarized)
Remote Status LED	Tri-color RED/YELLOW/GREEN	
CANbus	Not available	Isolated CAN-H, CAN-L, CAN-GND CANopen CiA 418: Battery and CiA 419: Charger

USB Host Port	
Required equipment	Standard USB flash drive with FAT formatting
Charge Tracking Data Points	VAC, IAC, VDC, IDC, temperature (battery & charger) Ahr returned, charge duration, end of charge voltage, fault / error codes logged
Software Update	Allows updating of software using USB flash drive, replacing software and / or charge profiles

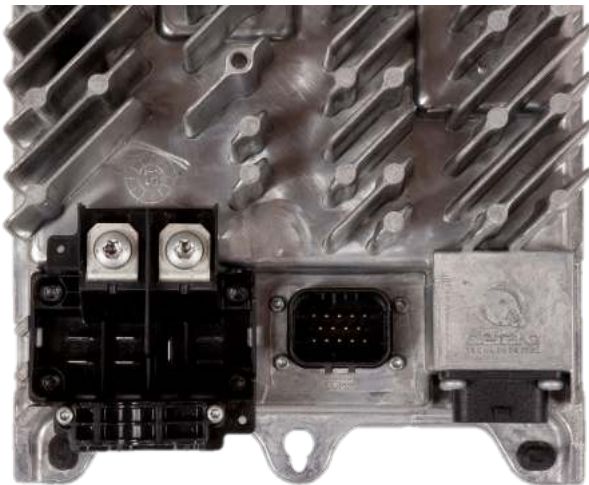
IC900 Charger Specifications

Special Features

Charging profile selection	Up to 25 charging profiles stored on the charger. Button and LED numeric display allows default charging profile to be selected
Datalogging	Flash memory for logging charge cycle parameters (V, I, T, Ah returned, charge duration), events and diagnostic information
Service	No custom service tools needed. USB Flash Drive used to update charger software, load charging profiles, select default charging profile, and download charge tracking and diagnostic information. Software can be upgraded and logged charge cycle information can be downloaded using CANbus (for OEM handhelds).
External communications	PC-based configuration software for field programmability, analyzing charging performance and troubleshooting issues

Options

OEM-specific AC, DC & signal cords	Customized cords to suit OEM requirement, factory-installed for OEM convenience
AC cord	Delta-Q's sealed, IEC-compliant AC power cords provide a sealed, retained AC connection when mated with an IC Series Charger. Cords available for North America, Europe, Great Britain, China, Japan, and Australia. The sealed connection prevents damage from fluids, dirt or acid corrosion, as well as maintaining a firm connection between the power cord and inlet. The charger can also be connected to an off-the-shelf, country-specific AC cord which has a standard IEC320 C13 plug.
Isolated battery temperature sensor	Mounts on battery post or can be attached to side of a battery to provide battery temperature information to charging profiles which will do battery temperature voltage compensation.
Tri-color remote status indicator	Mimics behavior of charger's status display - Flashing Green = Charging, Solid Green = Charging complete, Flashing Yellow = Error Condition, Solid Red = Charger Fault
IC series handle & rubber feet kit	Easily insert into charger's mounting holes to protect mounting surface and prevent charger from sliding.



IC1200 COMM (Rear View). View of battery temperature sense and interlock blade terminals within DC output block.

Dimensions

