

Battery Charge Profiles (Algorithms)

A battery charge profile (also known as an algorithm) contains all of the logic used to execute a multi-stage charging process, including the bulk, absorption and finishing phases. Charge profiles differ depending on the battery type and manufacturer.

To develop new charge profiles, Delta-Q maintains an extensive battery testing lab. Here, new charge profiles are developed, often with the involvement of battery manufacturers. The lab includes more than 20 test channels and a temperature chamber to simulate charging in different ambient temperature environments.



Safety Information

This document is only for the use of Authorized OEMs and Distributors. Use by any other parties may void the battery and/or charger warranty.

* - Temperature compensated algorithm: charger temperature sensor must be connected

**** CAUTION:** Use of charge algorithms with batteries they were not designed for is done at your own risk. Delta-Q is continuously testing and updating charge algorithms for various batteries. Though many algorithms will work with a range of batteries, variations in manufacturing, chemical composition, health, and other properties may cause unacceptable charging performance. Always closely monitor a suggested battery/algorithm combination for at least three cycles to ensure the batteries are being properly charged. If you are not sure of how to monitor a battery charge, contact Delta-Q Technical Support for advice.

Charge Profiles by Battery Type

Flooded (Wet) Batteries

ID	Algorithm Description	Ah	Designed For	May Be Compatible With**
1*	Trojan Flooded	225	Trojan T105	150 - 260Ah 6V, 8V, 12V flooded
3	Trojan Constant Power dv/dt	225	Trojan T105	150 - 250Ah 6V, 8V, 12V flooded
5*	Trojan Group 31 Flooded	130	Trojan 30XHS, 31XHS	85 - 150Ah 12V "marine" flooded Exide Orbital AGMs, Optima AGMs
7	Trojan 305 Constant Power dv/dt	305	Trojan J305, L16	250 - 420Ah flooded
11	200 - 255Ah Flooded Constant Power dv/dt	230	U.S. Battery US125	200 - 255Ah flooded golf
17	Flooded/AGM Universal non-temp comp	225		All 200 - 250Ah flooded and AGM, Interstate flooded 200 - 250Ah
19	Flooded/AGM Universal non-temp comp off-board	225		All 200 - 250Ah flooded and AGM
21*	Exide Flooded *** Based on C/5 capacity	210	Exide 3ET200, FF06255, 185PZB210	
62	Trojan Group 31 Flooded dv/dt	130	Trojan 30XHS, 31XHS	85 - 150Ah 12V flooded
71	140 - 200Ah Flooded Constant Power dv/dt	170	U.S. Battery 8V-GC	140 - 200Ah flooded
72	250 - 335Ah Flooded Constant Power dv/dt	305	U.S. Battery US-305HC	250 - 320Ah flooded
73	400Ah Flooded Constant Power dv/dt	390	U.S. Battery L-16	330 - 425Ah flooded
173	400Ah Flooded Constant Power dv/dt	415	U.S. Battery L-16HC	400 - 425Ah flooded

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Charge Profiles by Battery Type (Continued)

Absorbed Glass Mat (AGM) Batteries

ID	Algorithm Description	Ah	Designed For	May Be Compatible With**
17	Flooded/AGM Universal non-temp comp	225		All 200 - 250Ah flooded and AGM, Interstate flooded 200 - 250Ah
19	Flooded/AGM Universal non-temp comp off-board	225		All 200 - 250Ah flooded and AGM
42*	Discover 80 - 150Ah AGM	100	Discover EV31A	Other 80 - 150Ah AGM
43*	Discover 200 - 400Ah AGM	220	Discover EVL16A, EVGC6A, EV185A	Other 200 - 400Ah AGM
125*	Fullriver 160 - 220Ah AGM	180	Fullriver DC180-6, DC224-6	Fullriver 160 - 220Ah AGM
126*	Fullriver 85 - 145Ah AGM	110	Fullriver DC115-12	Fullriver 85 - 145Ah AGM
141*	Fullriver 300 - 370Ah AGM	335	Fullriver DC335-6	Fullriver 300 - 370Ah AGM
143*	Discover 400Ah AGM	400	Discover EVL16A	Other 400Ah AGM
151*	Fullriver 220 - 290Ah AGM	250	Fullriver DC250-6	Fullriver 220 - 290Ah AGM
225*	Fullriver Universal IUU	180	Fullriver DC180-6	Fullriver 105 - 208Ah AGM
237*	Fullriver 370-420Ah AGM	415	Fullriver DC400-6	Fullriver 370 - 420Ah AGM

Gel Batteries

ID	Algorithm Description	Ah	Designed For	May Be Compatible With**
6*	Deka 8G31 Gel	100	Deka 8G31	Deka 98 - 120Ah gel
12*	Exide Gel *** Based on C/5 capacity	240	Exide DF06240	200 - 300Ah gel
26*	Deka 8GGC2 Gel	180	Deka 8GGC2	Deka 150 - 230Ah gel
28*	Deka 8GGC2 Gel Float	180	Deka 8GGC2	Deka 150 - 230Ah gel
51*	Exide 180Ah Gel *** Based on C/5 capacity	180	Sonnenschein 180Ah Gel	150 - 200Ah gel
52*	Exide 105Ah Gel *** Based on C/5 capacity	105	Sonnenschein 105Ah Gel	80 - 130Ah gel

Lithium-Ion Batteries

ID	Algorithm Description	Ah	Designed For	May Be Compatible With**
162	Valence UT/XP	N/A	Valence 12V/18V modules	
233	Samsung SDI 20A	N/A	Samsung 12/48V modules	

Lithium-Ion Profiles

Delta-Q is experienced in developing charging profiles for lithium ion battery packs, and has a library of existing profiles. These are provided directly to OEMs for development purposes. If you are interested in using a lithium charging profile, please contact our OEM Support Services group. We will also be able to provide information about the CAN bus communication capabilities of the IC650 Charger in your lithium implementation.

Custom Profile Development

Delta-Q operates an extensive battery lab to develop charge profiles using short-, medium-, and long-term testing methods. If you are interested in having an algorithm developed for your battery model, or for a specific application, please contact Delta-Q's Sales department and speak with one of our application engineers. They can also assist you in specifying any of our existing charge profiles.



Contact Delta-Q

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Charge Profile (Algorithm) Application Chart

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Battery Group / Size (C/20 Ah)	Group 31								12V Golf				8V Golf				6V Golf								L16													
Battery Type	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420			
Flooded Lead-Acid																																						
Trojan temp comp						5									1																							
Trojan dV/dt					62									3																				7				
Exide temp comp dV/dt <i>*** Based on C/5 capacity</i>													21*				21*																					
U.S. Battery/generic dV/dt										71					11																			73		173		
AGM Temperature Compensated																																						
Discover			42											43																					143			
Fullriver				126							125						151																			237		
Gel Temperature Compensated																																						
Deka			6																																			
Exide/Sonnenschein <i>*** Based on C/5 capacity</i>			52*								51*						12*																					

Legend	
Bold	Designed For
Shaded	May Be Compatible With
*	Based on C/5 capacity