

Introduction

The ODYSSEY battery ingeniously uses absorbed glass mat (AGM) valve regulated lead acid (VRLA) technology to offer, in one package, the characteristics of two separate batteries. It can deep cycle as well as deliver serious cranking power - it is like an athlete who is both a champion long distance runner and an excellent sprinter. Traditional battery designs allow them to either deep cycle or provide high amperage discharges for applications such as engine starting. The ODYSSEY battery can support applications in either category. ODYSSEY batteries are capable of providing engine cranking pulses of up to 2,250A for 5 seconds at 25°C (77°F) as well as deliver 400 charge/discharge cycles to 80% depth of discharge (DOD) when properly charged. A typical starting, lighting and ignition (SLI) battery, for example, is designed to provide short-duration, high-amperage pulses; it performs poorly when repeatedly taken down to deep depths of discharge or if they are placed on a continuous trickle charge, such as when they are used to crank a backup generator. A traditional battery resembles either a sprinter or a long distance runner; an ODYSSEY battery will do both - provide short duration high amperage pulses or low rate, long duration drains.

Why use ODYSSEY Batteries?

■ Guaranteed longer service life

With a 10 to 12-year design life and a 3 to 8-year service life, ODYSSEY batteries save you time and money because you do not have to replace them as often. Unlike other AGM VRLA batteries, the ODYSSEY battery is capable of delivering up to 400 cycles when discharged to 80% DOD and properly charged.

■ Longer storage life

Unlike conventional batteries that need a recharge every 6 to 12 weeks, a fully charged ODYSSEY battery can be stored for up to 2 years at 25°C (77°F) from a full state of charge. At lower temperatures, storage times will be even longer.

■ Deep discharge recovery

The ease with which an ODYSSEY battery can recover from a deep discharge is extraordinary. A later section on storage and recharge criteria discusses test data on this important topic.

■ Superior cranking and fast charge capability

The cranking power of ODYSSEY batteries is double to triple that of equally sized conventional batteries, even when the temperature is as low as -40°C (-40°F). In addition, with simple constant voltage charging there is no need to limit the inrush current, allowing the battery to be rapidly charged. Please see the section titled *Rapid charging of ODYSSEY batteries* for more details on this feature.

■ Easy shipping

The AGM valve-regulated design of the ODYSSEY battery eliminates the need for vent tubes; further, no battery watering is required and there is no fear of acid burns or damage to expensive chrome or paint. Because of the starved electrolyte design, the US Department of Transportation (USDOT) has classified the ODYSSEY battery as a dry battery. Shipping these batteries by express ground or by air is possible.

■ Tough construction

The rugged construction of the ODYSSEY battery makes it suitable for use in a variety of environments ranging from vacuum to 2 atmospheres (29.4 PSI).

■ Mounting flexibility

Installing the ODYSSEY battery in any orientation does not affect any performance attribute. There is also no fear of acid spillage. However, inverted installation is not recommended.

■ Superior vibration resistance

ODYSSEY batteries have passed a variety of rigorous tests that demonstrate their ruggedness and exceptional tolerance of mechanical abuse. Please see the section titled *Shock, impact and vibration testing* for more details on these tests.

■ Ready out of the box

ODYSSEY batteries ship from the factory fully charged. If the battery's open circuit voltage is higher than 12.65V, simply install it in your vehicle and you are ready to go; if below 12.65V boost charge the battery following the instructions in this manual or the owner's manual. For optimum reliability, a boost charge prior to installation is recommended, regardless of the battery's open circuit voltage (OCV).

Specifications

Feature	Model (Ah @ 10-hour rate/Ah @ 20-hour rate)											
	PC310 (7/8)	PC535 (13/14.8)	PC545 (12/14)	PC625 (17/18)	PC680 (16/17)	PC925 (27/28)	PC1200 (41/44)	PC1500 (62/68)	PC1700 (65/68)	PC2150 (97/104)	PC2250 (114/126)	
5 sec. pulse hot cranking amps (PHCA)	310	535	545	625	680	925	1,200	1,500	1,700	2,150	2,250	
CCA @ 0°F	100	200	185	265	220	380	550	825	875	1,090	1,225	
CA @ 32°F	155	265	240	350	300	500	725	1,050	1,175	1,370	1,550	
HCA @ 80°F	200	300	300	440	370	625	860	1,250	1,325	1,545	1,730	
Charge voltage	Float voltage: 13.5V to 13.8V at 25°C (77°F); no current limit Cyclic voltage: 14.4V to 15.0V at 25°C (77°F); no current limit											
Reserve capacity, minutes	9	21	18	27	24	52	78	125	142	200	240	
Terminals	M4 bolt	M6 bolt	M6 bolt	M6 stud	M6 bolt or SAE 3/8" receptacle		M6 bolt or SAE 3/8" receptacle	Top SAE 3/8" Side: 3/8" X 16 receptacle	M6 bolt SAE 3/8" receptacle or 5/16" SS stud	3/8" stud /SAE	Dual SAE/DIN terminal and 3/8" stud	
Terminal torque, in-lbs.	8.9	40	50	40	50	60	60	70	60	150-200	100	
Length, in. (mm.)	5.43 (138.0)	6.70 (170.2)	7.00 (177.8)	6.70 (170.2)	7.27 (184.7)	6.64 (168.6)	7.87 (199.9)	10.85 (275.6)	13.02 (330.7)	13.00 (330.2)	11.26 (286.0)	
Width, in. (mm.)	3.39 (86.0)	3.90 (99.1)	3.37 (85.6)	3.90 (99.1)	3.11 (79.0)	7.05 (179.0)	6.66 (169.1)	6.99 (177.5)	6.62 (168.2)	6.80 (172.7)	10.59 (269.0)	
Height, in. (mm.)	3.98 (101.0)	6.125 (155.6)	5.17 (131.3)	6.89 (175.0)	6.67 (169.4)	5.04 (128.0)	6.80 (172.7)	7.82 (198.6)	6.93 (176.0)	9.4 (238.8)	9.17 (233.0)	
Weight, lb. (kg.)	5.9 (2.7)	12.0 (5.4)	12.6 (5.7)	13.2 (6.0)	15.4 (7.0)	26.0 (11.8)	38.2 (17.4)	53.0 (24.0)	60.9 (27.6)	75.0 (34.1)	86.0 (39.0)	
Cycle life @ 77°F	400 cycles to 80% depth of discharge, with correct charge profile											
Temperature range	-40°C (°F) to 45°C (113°F) for PC535 & PC625 -40°C (°F) to 80°C (176°F) with metal jacket on all other models, except PC310, PC535 and PC625 -40°C (°F) to +50°C (122°F) for PC310							-40°C (°F) to 80°C (176°F) with metal jacket on all models, except PC2250 -30°C (-22°F) to +40°C (104°F) for PC2250				
Resistance @ 1kHz at 77°F	27.1m	8.0m	10.0m	7.0m	7.0m	5.0m	4.5m	2.5m	3.5m	2.2m	2.1m	
Short circuit amps	455	1,000	1,200	1,800	1,800	2,400	2,600	3,100	3,500	5,000	5,000	

NOTE: Metal jackets are not available for PC310, PC535, PC625, PC1500, and PC2250