## **VEV12-50**

12V 50Ah / 10h



#### Introduction

Samson EV AGM Series is designed for tough applications and repeated deep discharging. It is superior with the long cycle life, large current discharge capability, high reliability and safety. The range is the definitive choice for golf cart, electric medical equipment, automated guided vehicles (AGV), aerial lifts, floor cleaning equipment, robotics applications.

#### **Battery Features**

- Extra long cycle life and resistance to mechanical stress and the elements all in one battery.
- Maintenance-free
- Very high purity lead (purity rate 99.994%)
- Traction heavy duty grid design gives consistent active material adhesion and corrosion resistance.
- Fully tank formed plates for evenly formed and capacity matched plates.
- Low impurity electrolyte
- Recognized gas recombination efficiency greater than 99.9%
- Flame arresting pressure regulated safety sealing valves for safety.
- Low self-discharge
- Classified as non-spillable and not restricted for transportation by > Air (IATA/ICAO provision 67)
  - > Surface (DOT-CFR-HMR49)
  - > Water (per IMDG amendment 27)

#### **Electrical Specification**

Design Life Cycles @ 80% D.O.D. (25°C)   450 Cycles	Electrical Specification								
Nominal Capacity @ 25°C /77°F	Design	10 years							
100 hour rate 0.6 to 1.75Vpc 50 Ah 10 hour rate 5 A to 1.75Vpc 50 Ah 5 hour rate 8.1 A to 1.75Vpc 45 Ah 3 hour rate 12 A to 1.70Vpc 40 Ah 1 hour rate 27 A to 1.60Vpc 30 Ah  Minutes of Discharge 25A to 10.5V 92 56A to 10.2V 35 75A to 10.2V 23 85A to 10.2V 19 100A to 10.2V 15  Cranking Amps Cold Cranking Amps 0°C /32°F 260 -18°C /0°F 215  Internal Resistance (Fully charged battery @ 25°C /77°F) 9 mΩ  Max. Discharge Current @ 25°C /77°F 450 A (5S)  Short Circuit Current 800 A  Charge Methods: Constant voltage charge @ 25°C /77°F  Cycle Use 14.7 ~ 14.9V Max. Current for best battery life 12.5 A  Standby Use 13.6 - 13.8V  Operating Temperature Range -20 ~ 60°C  Notes: battery voltage must be adjusted according to temperature.	Design	450 Cycles							
10 hour rate 5 A to 1.75Vpc 50 Ah 5 hour rate 8.1 A to 1.75Vpc 45 Ah 3 hour rate 12 A to 1.70Vpc 40 Ah 1 hour rate 27 A to 1.60Vpc 30 Ah  Minutes of Discharge  25A to 10.5V 92 56A to 10.2V 35  75A to 10.2V 23 85A to 10.2V 19  100A to 10.2V 15  Cranking Amps Cold Cranking Amps 0°C /32°F 260 -18°C /0°F 215  Internal Resistance (Fully charged battery @ 25°C /77°F) 9 mΩ  Max. Discharge Current @ 25°C /77°F 450 A (5S)  Short Circuit Current 800 A  Charge Methods: Constant voltage charge @ 25°C /77°F  Cycle Use 14.7 ~ 14.9V  Max. Current for best battery life 12.5 A  Standby Use 13.6 - 13.8V  Operating Temperature Range -20 ~ 60°C  Notes: battery voltage must be adjusted according to temperature.	Nominal Capacity @ 25°C /77°F								
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3 hour rate 12 A to 1.70Vpc	10	hour rate	5 A to 1.75Vpc		50 Ah				
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Minutes of Discharge         25A to 10.5V       92       56A to 10.2V       35         75A to 10.2V       23       85A to 10.2V       19         100A to 10.2V       15         Cranking Amps         0°C /32°F       260       -18°C /0°F       215         Internal Resistance         (Fully charged battery @ 25°C /77°F       9 mΩ         Max. Discharge Current @ 25°C /77°F       450 A (5S)         Short Circuit Current       800 A         Charge Methods: Constant voltage charge @ 25°C /77°F         Cycle Use       14.7 ~ 14.9V         Max. Current       15.0 A         Max. Current for best battery life       12.5 A         Standby Use       13.6 - 13.8V         Operating Temperature Range       -20 ~ 60°C         Notes: battery voltage must be adjusted according to temperature.	3	hour rate	12 A to 1.70Vpc		40 Ah				
25A to 10.5V 92 56A to 10.2V 35 75A to 10.2V 23 85A to 10.2V 19 100A to 10.2V 15  Cranking Amps Cold Cranking Amps 0°C /32°F 260 -18°C /0°F 215  Internal Resistance (Fully charged battery @ 25°C /77°F) 9 mΩ  Max. Discharge Current @ 25°C /77°F 450 A (5S)  Short Circuit Current 800 A  Charge Methods: Constant voltage charge @ 25°C /77°F  Cycle Use 14.7 ~ 14.9V  Max. Current 15.0 A  Max. Current for best battery life 12.5 A  Standby Use 13.6 - 13.8V  Operating Temperature Range -20 ~ 60°C  Notes: battery voltage must be adjusted according to temperature.	1	hour rate	27 A to 1.60Vpc		30 Ah				
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Cranking Amps       Cold Cranking Amps         0°C /32°F       260       -18°C /0°F       215         Internal Resistance       (Fully charged battery @ 25°C /77°F)       9 mΩ         Max. Discharge Current @ 25°C /77°F       450 A (5S)         Short Circuit Current       800 A         Charge Methods: Constant voltage charge @ 25°C /77°F         Cycle Use       14.7 ~ 14.9V         Max. Current       15.0 A         Max. Current for best battery life       12.5 A         Standby Use       13.6 - 13.8V         Operating Temperature Range       -20 ~ 60°C         Notes: battery voltage must be adjusted according to temperature.	75A to 10.2V		23	85A to 10.2V	19				
0°C /32°F       260       -18°C /0°F       215         Internal Resistance         (Fully charged battery @ 25°C /77°F)       9 mΩ         Max. Discharge Current @ 25°C /77°F       450 A (5S)         Short Circuit Current       800 A         Charge Methods: Constant voltage charge @ 25°C /77°F         Cycle Use       14.7 ~ 14.9V         Max. Current       15.0 A         Max. Current for best battery life       12.5 A         Standby Use       13.6 - 13.8V         Operating Temperature Range       -20 ~ 60°C         Notes: battery voltage must be adjusted according to temperature.	100A to	10.2V	15						
Internal Resistance (Fully charged battery @ $25^{\circ}$ C /77°F) 9 m $\Omega$ Max. Discharge Current @ $25^{\circ}$ C /77°F 450 A (5S)  Short Circuit Current 800 A  Charge Methods: Constant voltage charge @ $25^{\circ}$ C /77°F  Cycle Use 14.7 ~ 14.9V  Max. Current 15.0 A  Max. Current for best battery life 12.5 A  Standby Use 13.6 - 13.8V  Operating Temperature Range -20 ~ 60°C  Notes: battery voltage must be adjusted according to temperature.	Cranki	g Amps							
(Fully charged battery @ 25°C /77°F)       9 mΩ         Max. Discharge Current @ 25°C /77°F       450 A (5S)         Short Circuit Current       800 A         Charge Methods: Constant voltage charge @ 25°C /77°F       Cycle Use       14.7 ~ 14.9V         Max. Current       15.0 A       Max. Current for best battery life       12.5 A         Standby Use       13.6 - 13.8V         Operating Temperature Range       -20 ~ 60°C         Notes: battery voltage must be adjusted according to temperature.	0°C /32°F		260	-18°C /0°F	215				
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Short Circuit Current 800 A Charge Methods: Constant voltage charge @ 25°C /77°F Cycle Use 14.7 $\sim$ 14.9V Max. Current 15.0 A Max. Current for best battery life 12.5 A Standby Use 13.6 - 13.8V Operating Temperature Range $-20 \sim 60$ °C Notes: battery voltage must be adjusted according to temperature.	(Full	$9~\text{m}\Omega$							
Charge Methods: Constant voltage charge @ 25°C /77°F  Cycle Use 14.7 ~ 14.9V  Max. Current 15.0 A  Max. Current for best battery life 12.5 A  Standby Use 13.6 - 13.8V  Operating Temperature Range $-20 \sim 60$ °C  Notes: battery voltage must be adjusted according to temperature.	Max. D	450 A (5S)							
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Max. Current 15.0 A  Max. Current for best battery life 12.5 A  Standby Use 13.6 - 13.8V  Operating Temperature Range -20 $\sim$ 60°C  Notes: battery voltage must be adjusted according to temperature.	Charge Methods: Constant voltage charge @ 25°C /77°F								
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Standby Use 13.6 - 13.8V  Operating Temperature Range -20 ~ 60°C  Notes: battery voltage must be adjusted according to temperature.	Max.	15.0 A							
Operating Temperature Range -20 ~ 60°C Notes: battery voltage must be adjusted according to temperature.	Max.	12.5 A							
Notes: battery voltage must be adjusted according to temperature.	Stan	13.6 - 13.8V							
	Operat	-20 ~ 60°C							
Please refer to our recommendation	Notes: battery voltage must be adjusted according to temperature.								
ricade refer to our recommendation.									

#### **Battery Picture & Terminal Layout**



#### **Dimension & Weight**

	Weight			
Length	Width	Height	Total Height	(± 2%)
229 mm	138 mm	208 mm	212 mm	17,5 kg
9,0 inch	5,4 inch	8,2 inch	8,3 inch	38,6 lbs

#### **Typical Applications**

- Golf Cart Golf Trolley
- Tour Bus Sweeper
- Electric Medical Equipments Floor Cleaning Machines
- Aerial and Fork Lifts Marine and RV
- O Automated guided vehicles (AGV)

**Version No.:** 

#### Other relevant information

Contry of origin: China HS Code (harmonized system code): 85 07 20 00 UN-Transport declaration: UN2800 Customs tariff number 8507 10 20 80

#### Cetificates











12-08-2021





Self-Discharge

3% of capacity declined per month @  $25^{\circ}\text{C}$  (77°F).

Subject to revision without notice. Please contact our sales representatives for latest version.

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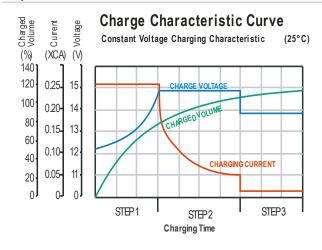
# **VEV12-50**

12V 50Ah / 10hr rate

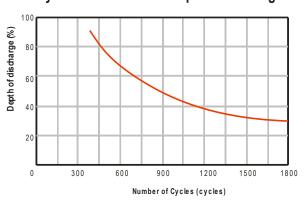


### Graphs

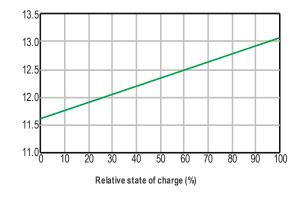
Battery voltage (V)



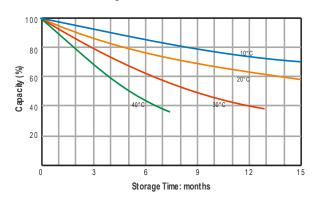
## Cycle Service Life V.S. Depth Of Discharge



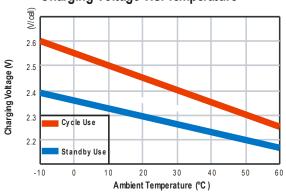
## OCV V.S. State of Charge (20°C)



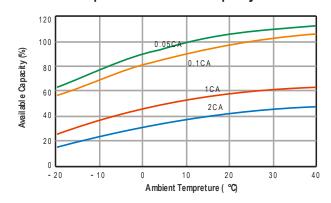
## Self-Discharge Characteristic



### Charging Voltage V.S. Temperature



## **Temperature Effects On Capacity**



 $\label{thm:control} \textit{Subject to revision without notice. Please contact our sales \textit{representatives for latest version.} \\$ 

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**Version No.:** 

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