



## Features & Benefits

Professional Series EV Advanced AGM Batteries, Designed and Engineered for Dependability in Commercial, Industrial, Public and Private applications; Mobility and Home Medical Equipment (HME), Broadband and Cable TV (CATV), Uninterruptible Power Supplies (UPS) and Telecommunication, Photovoltaic, Solar and Renewable Energy, Electronic and Security, Marine and RV, Golf and Electric Vehicle, Aerial Lifts and Fork Lifts, Floor Machines and Robotics.

- *In Doors*
- *Out Back*
- *Off Shore*
- *On Duty*

Discover™ Professional Series Batteries have the Features and Benefits that matter to your customers and you!

### Advanced AGM

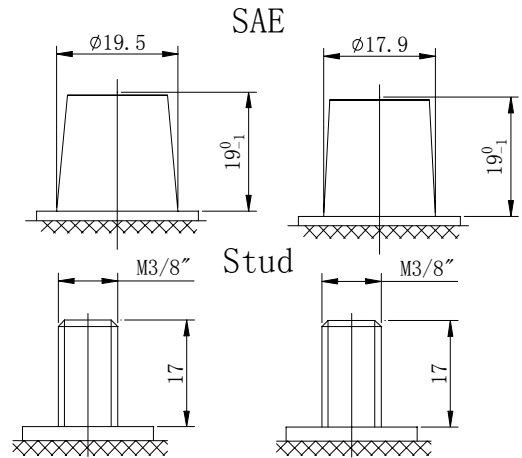
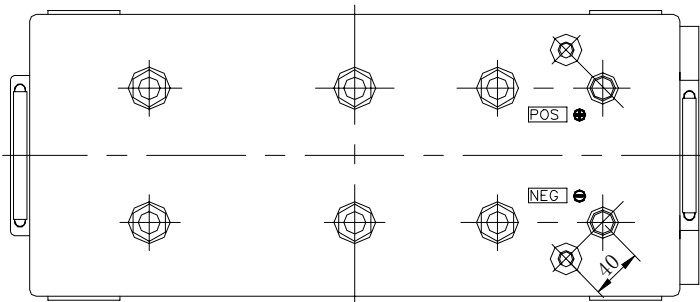
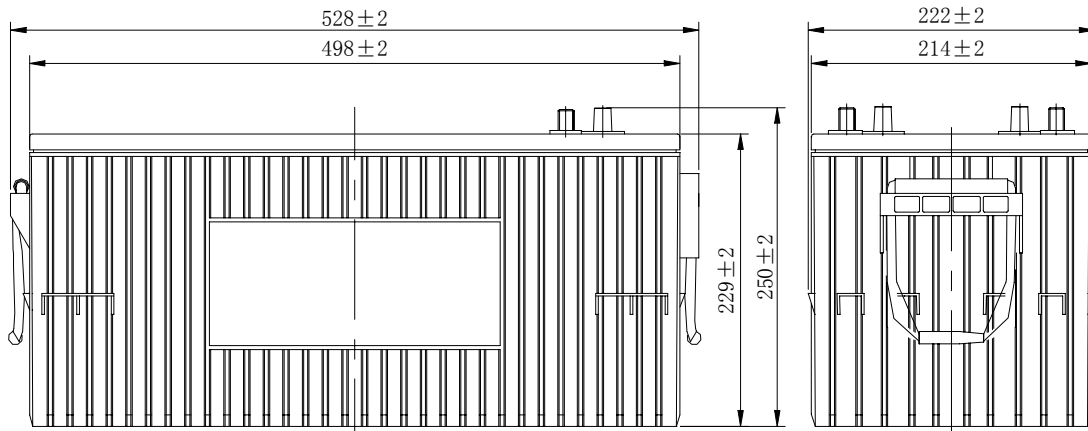
- Completely sealed valve regulated construction.
- Flame arresting pressure regulated safety sealing valves for safety, operating pressure management and protection against atmospheric contamination (excess oxygen being absorbed by negative plates).
- Computer-aided 99.994% pure heavy-duty lead calcium grid designs.
- Tank formed plates: guarantees evenly formed and capacity matched plates.
- Discover™ proprietary Vision Max® Paste Formula.
- Anchored plate groups to guard against vibration.
- Double insulating Micro porous glass fiber separators.
- Measured and Immobilized electrolyte.
- Vacuum filling and weighing processes.
- Advanced technology for efficient gas recombination of up to 99.9% and freedom from electrolyte maintenance.
- Wide range of operating temperatures (-40°F to 140°F) (-60°F to 160°F Gel).
- Low self discharge rates (Approx. 1%-3% monthly at 68.F – 77.F)
- High impact reinforced strength copolymer polypropylene cases and flat top designed covers that are rugged and vibration resistant.
- Thermally welded case to cover bonds that eliminate leakage.
- Copper and stainless steel alloy terminals and hardware.
- Multi-terminal options.
- Terminal protectors.
- Removable carry handles.
- Industry leading size and performance options.
- Classified as "NON-SPILLABLE BATTERY" Not restricted for Air (IATA/ICAO) Provision 67, Surface (DOT-CFR-HMR49) or Water (Classified as non-hazardous per IMDG amendment 27) transportation
- Can be used in any orientation – Upside down is not recommended – do not charged up side down!
- Compatible with sensitive electronic equipment.
- Quality Assurance processes with ISO (4400/992579), QS and TUV Certification EMC tested, CE, ETTS Germany (G4M19906-9202-E-16)
- Tellcordia and Bellcore compliant
- UL recognized and approved components (MH29050).



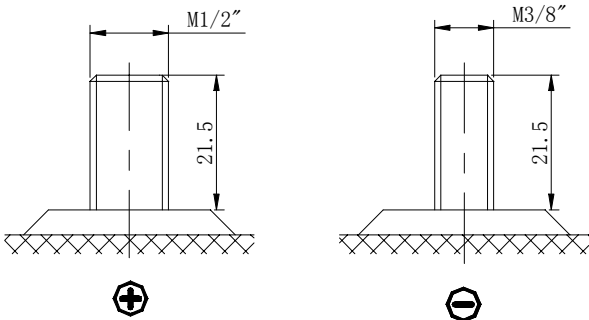
# EV4DA-A

## Mechanical Characteristics

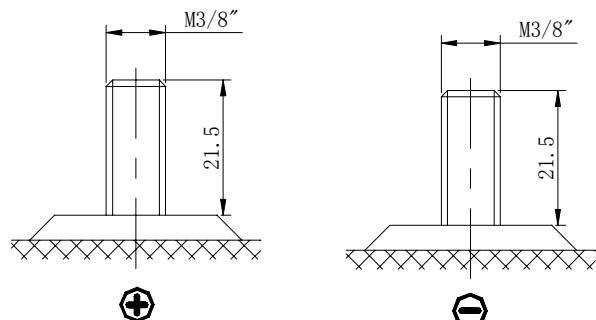
Industry Type No.	Volts	Standard (optional) Terminals	Dimensions in Inches (mm)				Approx. Weight in Lbs (Kgs)
			L in(mm)	W in(mm)	H in(mm)	TH in(mm)	
4D	12	AT(DT1,2)	20.8 (528)	8.7 (222)	9.0 (229)	9.9 (250)	141.1(64)



Optional Terminal Drop 1



Optional Terminal Drop 2





## Electrical Specifications

Ampere Hour Capacity			Minutes of Discharge					R/C	Cranking Amps	
20HR	10HR	5HR	@25A	@56A	@75A	@85A	@100A	@25A	32°F/ 0°C	0°F/ -18°C
* - Performance averages after 15 cycles										
245	230	205	579	208	137	117	91	497	1600	1275

### Constant current discharge ratings-amperes at 20°C (68°F)

End Point Volts/Cell	5min	10min	15min	30min	45min	1h	3h	5h	10h
1.60V	580	445	360	230	167	136	61.5	43.1	23.8
1.65V	537	418	341	219	161	132	60.5	42.4	23.5
1.70V	494	390	321	208	155	127	59.5	41.8	23.3
1.75V	450	362	300	196	149	122	58.3	41.0	23.0
1.80V	405	333	277	184	142	117	57.0	40.2	22.7

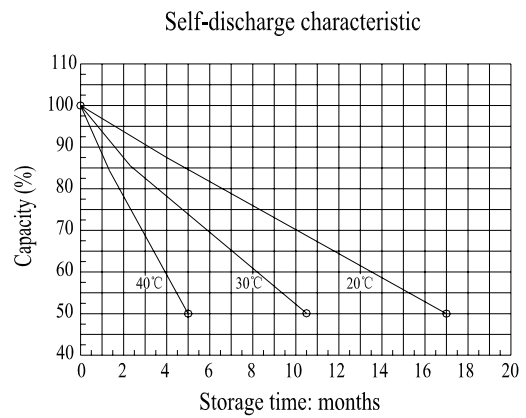
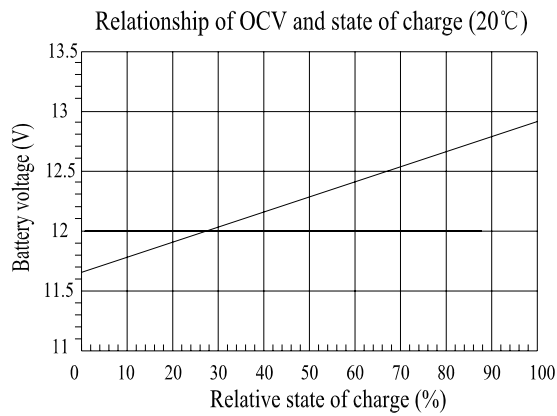
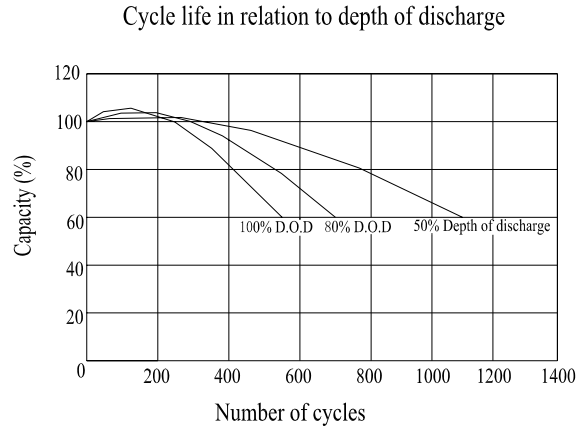
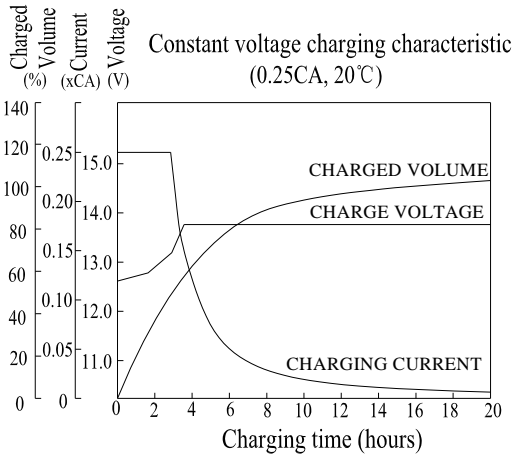
### Constant power discharge ratings-watts per cell at 20°C (68°F)

End Point Volts/Cell	5min	10min	15min	30min	45min	1h	2h	3h	5h
1.60V	1050	830	675	420	313	252	144	102	68.0
1.65V	984	785	642	407	305	246	142	101	67.5
1.70V	917	740	608	393	296	240	139	99.5	66.9
1.75V	850	694	574	378	287	234	136	98.0	66.2
1.80V	782	648	539	363	277	227	133	96.5	65.5

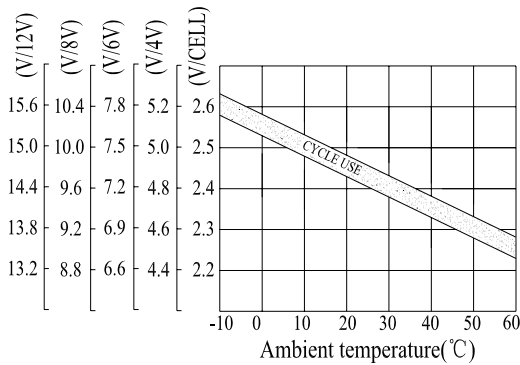
Internal resistance	Fully charged at 20°C: 2.7 mOhms		
Self discharge	<3% of capacity per month at 20°C		
Operating temperature range	Discharge	Charge	Storage
	-20~60°C	-10~60°C	-20~60°C
Max. discharge current (20°C)	1100A(5s)		

CHARGE METHODS: Constant voltage charging at 20°C (68°F)			
	Max. Charge current	Charge voltage	Temperature compensation
Standby use	0.3C <sub>10A</sub>	13.6—13.8V	-20mV/°C
Cyclic use	0.3C <sub>10A</sub>	14.4--14.7V	-30mV/°C

## Charge / Discharge Tables & Graphs



Relationship between charging voltage and temperature



Temperature effects on capacity

