

# AP12-9-GXD

## High Temperature Gel Battery

### Datasheet



The AP12-9-GXD is a reliable high temperature, maintenance-free gel electrolyte battery for outdoor use with 10-year design life at 25°C.

The AP12-9-GXD comes with 3 years warranty provided it is installed and have been having regular maintenance in accordance with manufacturer recommendations and specifications. It is designed to handle rugged outdoor conditions and can be utilised for several applications including:

- Alarm and security systems
- Telecommunication systems
- UPS
- Emergency lighting
- Fire alarm and security systems
- Control systems
- Back-up power during testing and maintenance

### Alpha Power Systems

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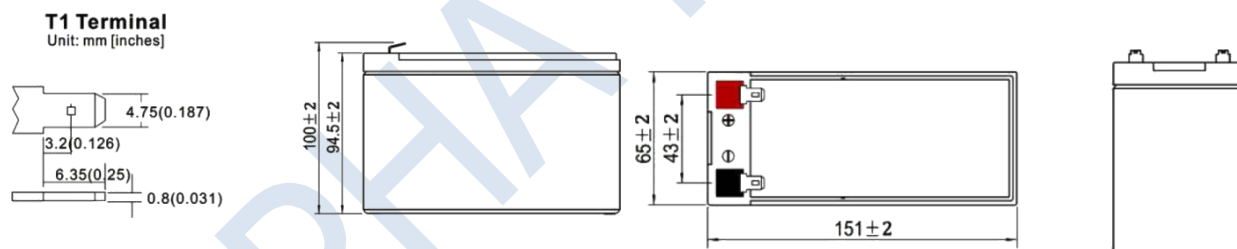
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## Product Specifications

Model / Part Number	AP12-9-GXD / GXD-009
Nominal Voltage	12V nominal (6 cells)
Nominal Capacity @ 25°C	9Ah @ 20hr, 1.80V/cell 8.4Ah @ 10hr, 1.80V/cell 7.7Ah @ 5hr, 1.75V/cell 5.4Ah @ 1.60V/cell
Design life	10 years
Terminal	F1 or F2
Container Material	ABS
Max. Discharge Current	135A (5S)
Internal Resistance	Approximately 20mΩ
Cycle Use	14.4 – 4.8V (25°C) temperature Coefficient -30mV/°C Initial charging current less than 2.7A
Standby Use	13.5 – 13.8V (25°C) temperature coefficient -20mV/°C No limit on initial charge current
Capacity Affected by Temp.	40°C - 103%, 25°C – 100%, 0°C – 86%
Self-discharge	Can be stored for up to 9 months at 25°C. Time will be reduced if stored at higher temperatures
Operating Temp.	Discharge: -15 – 50°C, Charge: 0 – 40°C, -15 – 40°C
Nominal Operating Temp.	25°C ± 3°C
Dimensions W x D x H	151 x 65 x 100 mm ± 2mm (includes terminal height)
Weight	2.43Kg



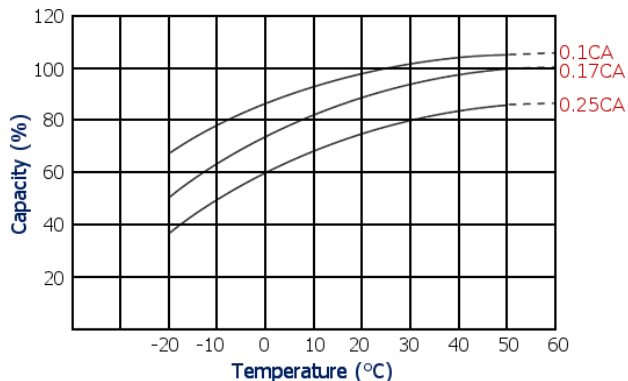
### Constant Current Discharge (Amperes at 25°C)

F.V/Time	5min	10min	15min	30min	45min	1h	2h	3h	5h	10h	20h
1.80V/cell	22.49	16.19	13.20	8.23	6.27	4.91	2.95	2.20	1.52	0.87	0.046
1.75V/cell	25.55	18.32	14.32	8.57	6.51	5.16	3.04	2.27	1.56	0.88	0.463
1.70V/cell	27.90	19.75	15.47	8.86	6.72	5.31	3.12	2.32	1.59	0.90	0.468
1.65V/cell	30.36	21.27	16.35	9.35	7.00	5.52	3.21	2.39	1.62	0.90	0.474
1.60V/cell	33.07	23.16	17.09	9.77	7.25	5.64	3.30	2.43	1.65	0.91	0.479

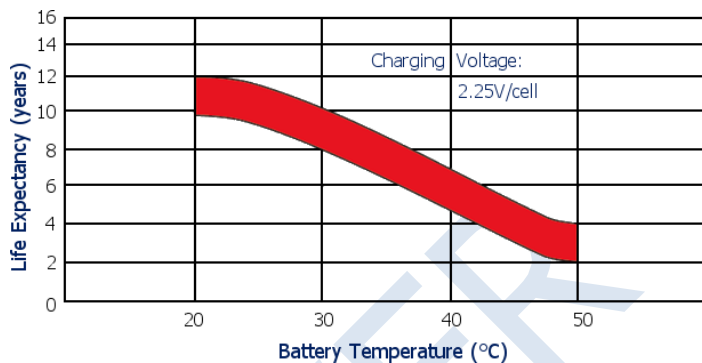
### Constant Power Discharge (Watts per cell at 25°C)

F.V/Time	5min	10min	15min	30min	45min	1h	2h	3h	5h	10h	20h
1.80V/cell	42.06	29.67	25.05	15.47	11.91	9.74	5.68	4.30	3.01	1.72	0.899
1.75V/cell	46.50	32.75	26.31	16.10	12.40	9.96	5.84	4.39	3.06	1.75	0.913
1.70V/cell	49.66	34.80	27.68	16.64	12.80	10.10	5.97	4.48	3.09	1.76	0.922
1.65V/cell	54.04	36.77	28.70	17.55	13.17	10.43	6.10	4.56	3.16	1.77	0.931
1.60V/cell	58.20	39.00	29.94	18.09	13.52	10.76	6.22	4.64	3.20	1.78	0.940

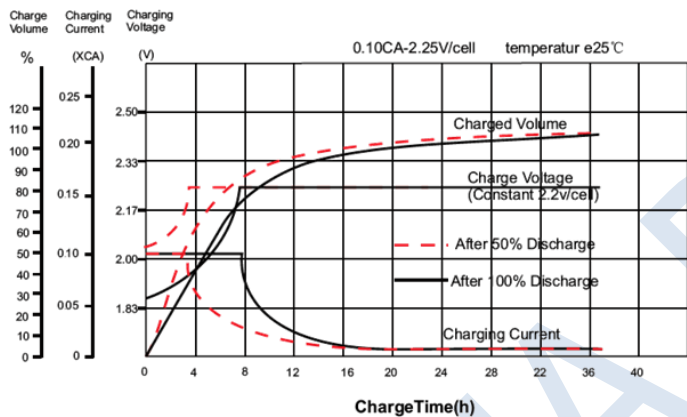
## Effects of Temperature on Capacity



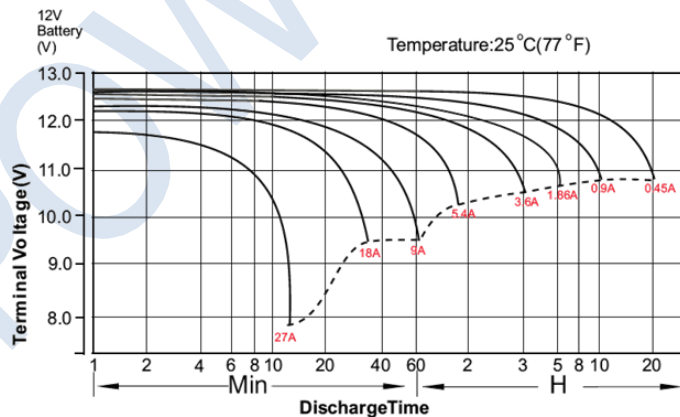
## Effects of Temperature on Long Term Float Life



## Float Charging Characteristics

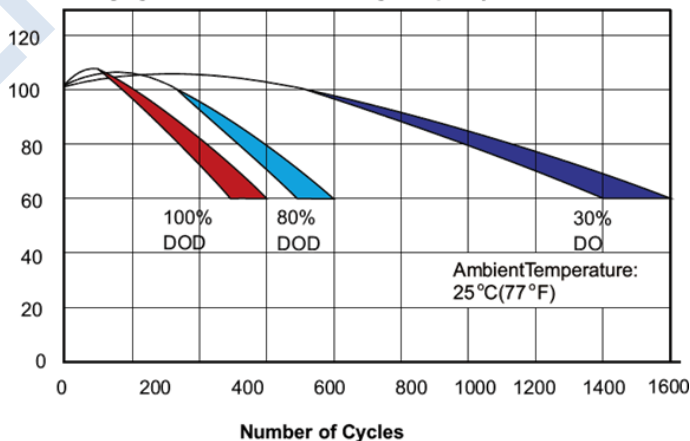


## Discharge Characteristic Curve

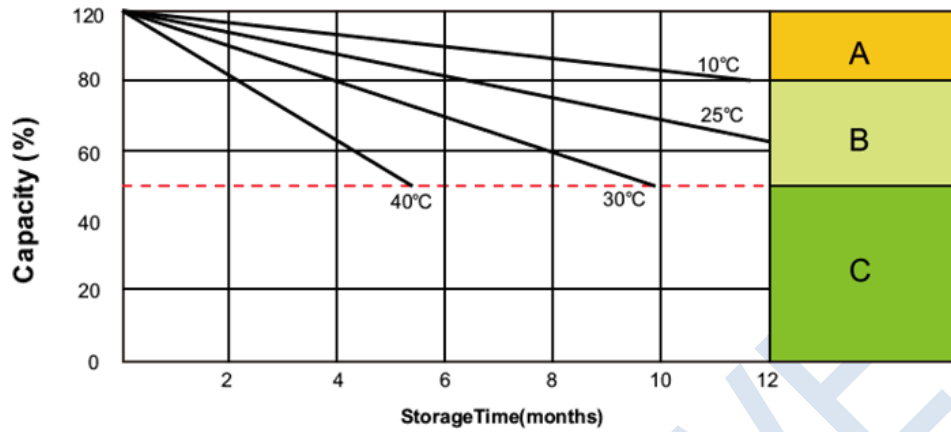


## Cycle Life Relating to Depth of Discharge

**Testing condition**  
 Discharging: current 0.17C(FV 1.7V/cell);  
 Charging: current 0.25C max, voltage 2.45V/cell;  
 Charging volume: 125% of discharged capacity.



Self-Discharge Characteristics



- A** No supplementary charge required  
(Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:  
 1.Charged for above 3 days at limited current 0.25CA and constant volatge 2.25V/cell.  
 2.Charged for above 20hours at limited current 0.25CA and constant volatge 2.45V/cell.  
 3.Charged for 8~10hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity.  
The battery should never be left standing till this is reached.

