

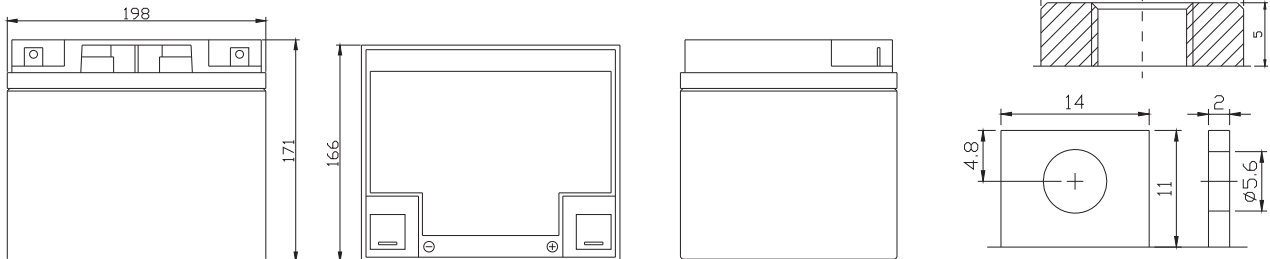
WA series is a general purpose battery with 10 years design life in float service . It meets with IEC and JIS standards .With up-dated AGM valve regulated technology and high purity raw materials, the WA series battery has reliable standby service life. It is suitable for UPS/EPS, medical equipment, emergency light and security systems applications.

## Specification

<b>Cells Per Unit</b>	6
<b>Voltage Per Unit</b>	12
<b>Capacity</b>	40Ah@10hr-rate to 1.80V per cell @25°C
<b>Weight</b>	Approx. 13.0 Kg(Tolerance ± 3%)
<b>Max. Discharge Current</b>	400A (5 sec)
<b>Internal Resistance</b>	Approx. 8 mΩ
<b>Operating Temperature Range</b>	Discharge: -20°C -60°C Charge: 0°C-50°C Storage: -20°C-60°C
<b>Normal Operating Temperature Range</b>	25°C ± 5°C
<b>Float charging Voltage</b>	13.6 to 13.8 VDC/unit Average at 25°C
<b>Recommended Maximum Charging Current</b>	12 A
<b>Equalization and Cycle Service</b>	14.6 to 14.8 VDC/unit Average at 25°C
<b>Self Discharge</b>	Westinghouse Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
<b>Terminal</b>	Terminal F4/F11
<b>Container Material</b>	A.B.S. UL94-HB, UL94-V0 Optional.

## Dimensions

**Unit: mm** Dimension: 198(L)×166(W)×171(H)



### Constant Current Discharge Characteristics: A (25°C)

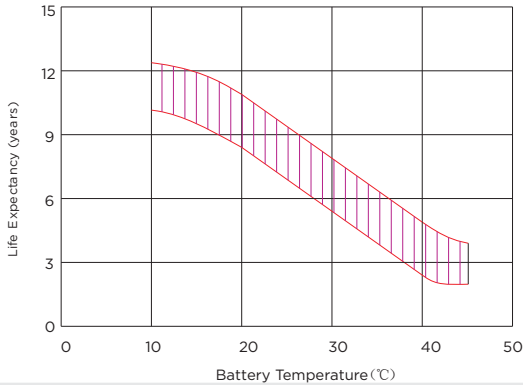
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	140.1	103.12	76.92	40.19	24.97	15.41	10.48	8.45	7.01	4.62	4.16	2.20
10.0V	136.0	98.12	75.35	39.67	24.64	15.10	10.28	8.33	6.95	4.60	4.12	2.16
10.2V	132.0	94.65	74.16	39.07	24.40	14.94	10.19	8.24	6.90	4.56	4.08	2.12
10.5V	118.5	87.34	70.61	37.99	24.10	14.75	10.10	8.12	6.85	4.52	4.04	2.08
10.8V	107.0	79.65	65.09	36.74	23.77	14.63	9.98	7.84	6.81	4.50	4.00	2.06
11.1V	91.33	71.18	58.38	35.34	23.20	14.04	9.79	7.73	6.76	4.46	3.96	1.98

### Constant Power Discharge Characteristics: W(25°C)

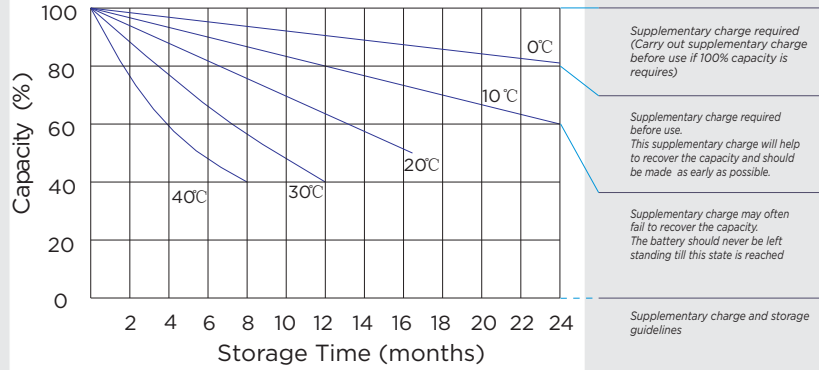
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	1478	1098	838.6	460.0	289.3	180.6	123.3	101.1	84.00	55.31	49.91	26.54
10.0V	1448	1065	825.1	455.3	286.7	178.4	121.5	99.68	83.25	55.09	49.52	26.08
10.2V	1432	1036	815.8	451.3	285.0	177.2	121.0	98.75	82.74	54.68	49.08	25.60
10.5V	1304	965.1	778.2	442.1	283.2	174.9	120.0	97.42	82.08	54.21	48.60	25.12
10.8V	1187	889.7	719.3	431.6	279.5	173.6	118.6	94.13	81.70	53.98	48.12	24.87
11.1V	1043	804.4	647.5	419.8	275.3	167.1	116.6	92.78	81.41	53.60	47.59	23.98

All mentioned values are average values (Tolerance ± 2%).

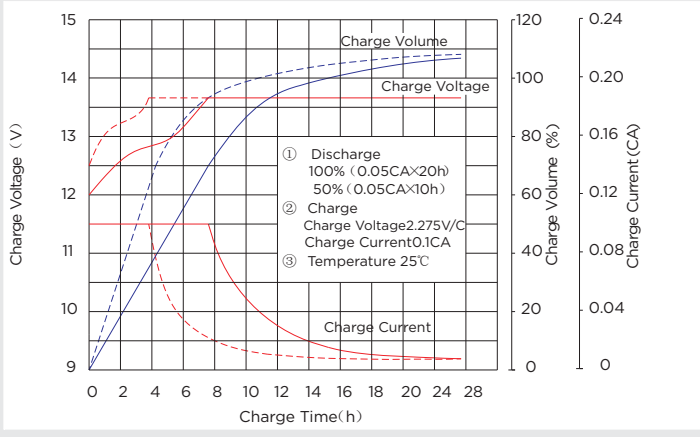
### Effect of temperature on long term float life



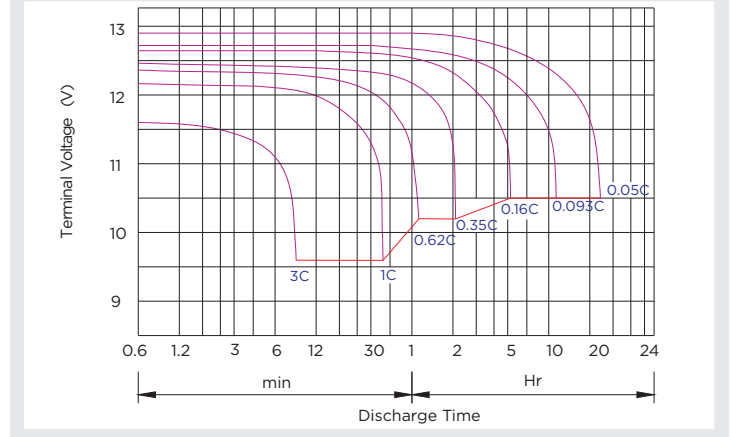
### Storage characteristic



### Charge characteristic Curve for standby use



### Discharge characteristic Curve



### Capacity Factors With Different Temperature

Battery Type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL Battery	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

### Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/cell	1.75V	1.70V	1.60V
Discharge Current (A)	(A) ≤ 0.2C	0.2C < (A) < 1.0C	(A) ≥ 1.0C

**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+14.4-14.7Vx24h, Max. Current 0.3C
Constant Current	-0.2Cx2h+0.1Cx12h
Fast	-0.2Cx2h+0.3Cx4h

Bolt	M5	M6	M8
Terminal	F3 F4 F13 F18 T25 T26	F8 F11 F12 -1 F15	F5 F9 F10 F12 F14 F16
Torque	6-7N·m	8-10N·m	10-12N·m

### Maintenance & Cautions

<b>Float Service:</b>
※ Every month, recommend inspection every battery voltage.
※ Every three months, recommend equalization charge for one time.
Equalization charge method:
Discharge: 100% rate capacity discharge.
Charge: Max. current 0.3CA, constant voltage 14.4-14.7V charge 24h.
※ Effect of temperature on float charge voltage: -3mV/°C/Cell.
※ Length of service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage.