



OPzV2-2000 (2V2000Ah)

Ritar OPzV series is a Valve Regulated Lead Acid battery that adopts immobilized GEL and Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to DIN standards and with die-casting positive grid and patent formula of active material. OPzV series exceeds DIN standard values with more than 20 years floating design life at 25°C and is even more suitable for cyclic use under extreme operating conditions.

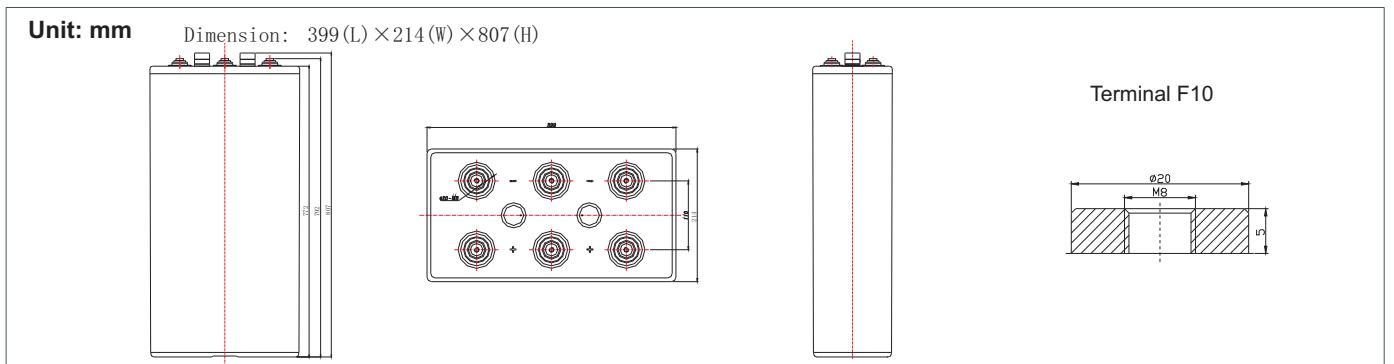


Specification

Voltage Per Unit	2V(single cell)
Capacity	2000Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 150.0 Kg
Max. Discharge Current	7000 A (5 sec)
Internal Resistance	Approx. 0.40 mΩ
Operating Temperature Range	Discharge: -40°C~70°C Charge: 0°C~50°C Storage: -20°C~60°C
Optimal Operating Temperature Range	25°C ± 5°C
Float charging Voltage	2.25 to 2.3 VDC/unit Average at 25°C
Maximum Charging Current	400 A
Cycle Service	2.37 to 2.40 VDC/unit Average at 25°C
Self Discharge	Self-discharge ratio less than 2% per month at 25°C. Please charge batteries before using.
Terminal	Thread insert & Bolt (F10-M8)
Container Material	A.B.S. (UL94-HB), and UL94-V0 is optional



Dimensions



Constant Current Discharge Characteristics : A(25°C)

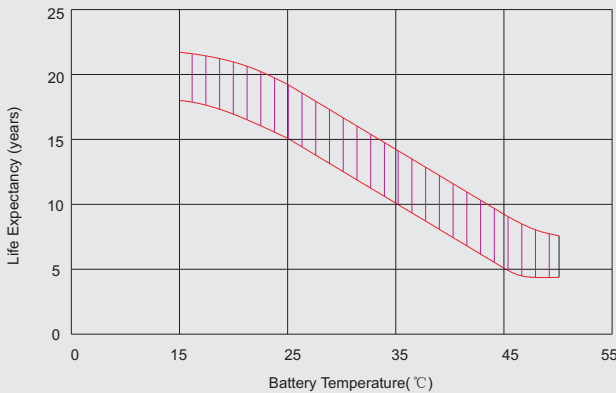
F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.90	984.0	780.0	550.0	417.1	342.0	295.5	266.0	207.6	178.0	93.45
1.87	1100	860.0	590.0	442.3	361.0	310.9	282.0	217.3	186.0	97.65
1.83	1260	960.0	640.0	471.4	380.0	324.3	292.0	227.0	194.0	101.9
1.80	1400	1040	664.0	485.0	387.6	332.0	300.0	232.8	200.0	105.0
1.75	1560	1114	694.0	504.4	394.0	340.0	306.0	236.7	204.0	107.1
1.70	1720	1150	714.0	514.1	400.9	344.0	310.0	238.6	206.0	108.2
1.65	1774	1222	738.0	528.0	406.6	348.0	314.0	240.6	208.0	109.2
1.60	1850	1264	766.0	550.0	418.0	354.0	318.0	242.5	210.0	110.3

Constant Power Discharge Characteristics : W(25°C)

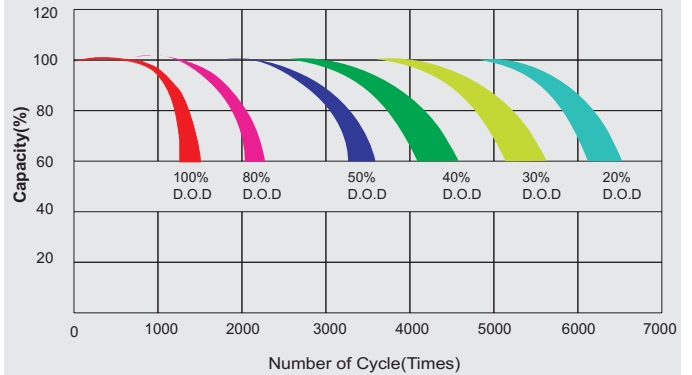
F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.90	1883	1497	1063	808.0	669.3	582.0	526.0	415.2	362.8	190.5
1.87	2072	1626	1128	846.2	705.5	610.0	556.0	432.6	378.3	198.6
1.83	2322	1773	1200	890.4	739.7	634.0	574.0	448.1	391.9	205.7
1.80	2537	1891	1240	910.5	753.8	648.0	588.0	457.8	401.6	210.8
1.75	2752	1976	1280	938.7	763.8	664.0	598.0	463.7	407.4	213.9
1.70	2951	1996	1313	954.8	775.9	670.0	604.0	467.5	411.3	215.9
1.65	3001	2084	1349	974.9	785.9	676.0	610.0	471.4	413.2	216.9
1.60	3037	2149	1381	1007	806.0	682.0	614.0	473.4	415.2	218.0

All mentioned values are average values.

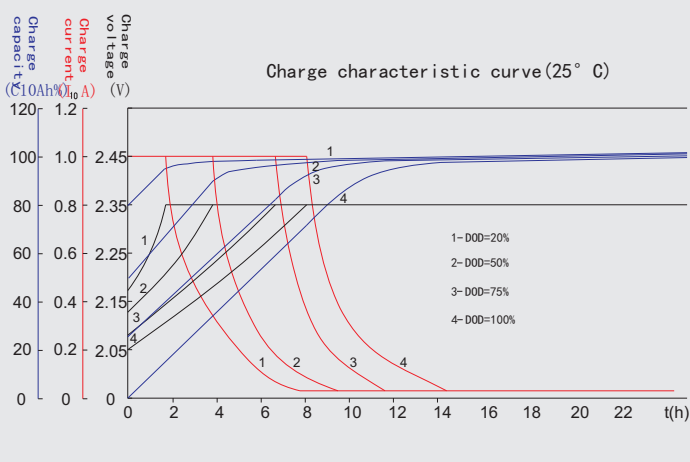
Effect of temperature on long term float life



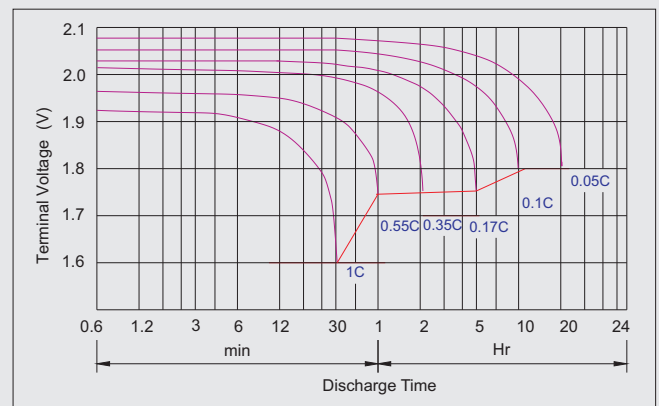
Life characteristics of cyclic use



Charge characteristic Curve for cyclic use



Discharge characteristic Curve



Long time discharge capacity for solar/wind application

Capacity	C24 (Ah)	C48 (Ah)	C72 (Ah)	C100 (Ah)	C120 (Ah)	C240 (Ah)
	F.V=1.85VPC					
OPzV2-2000	2185	2440	2460	2490	2545	2588

Capacity factors vs temperature (OPzV series)

Temperature	-30°C	-20°C	-10°C	0°C	10°C	20°C	25°C	30°C	40°C	45°C	50°C
Capacity	60%	75%	83%	89%	92%	99%	100%	103%	105%	107%	109%

Discharge Current VS. Final Voltage

Discharge current	Final voltage (V)
$I_{dis} \leq 0.1I_{10}$	1.90
$0.1I_{10} < I_{dis} \leq I_{10}$	1.85
$I_{10} < I_{dis} \leq 4I_{10}$	1.80
$4I_{10} < I_{dis} \leq 6I_{10}$	1.75
$6I_{10} < I_{dis} \leq 10I_{10}$	1.70
$I_{dis} > 15I_{10}$	1.60

Charge the batteries at least once every one year, if they are stored at 25°C.

Charging Method:

Constant Voltage	$-0.2C \times 2h + 2.35 \sim 2.40V, 24h, \text{Max. Current } 0.2CA$
Constant Current	$-0.2C \times 2h + 0.1CA \times 12h$

Maintenance & Cautions

Float Service:

※ Every month, recommend inspection every battery voltage.

※ Every three months, recommend equalization charge for one time.

Equalization charge method:

Discharge: 40~50% rate capacity discharge.

Charge: Max. current 0.2CA, constant voltage 2.35-2.40V/Cell charge 24h.

※ Effect of temperature on float charge voltage: $-3mV/^{\circ}C/\text{Cell}$.

※ Service life will be directly affected by the number of discharge

cycles, depth of discharge, ambient temperature and charging method.