



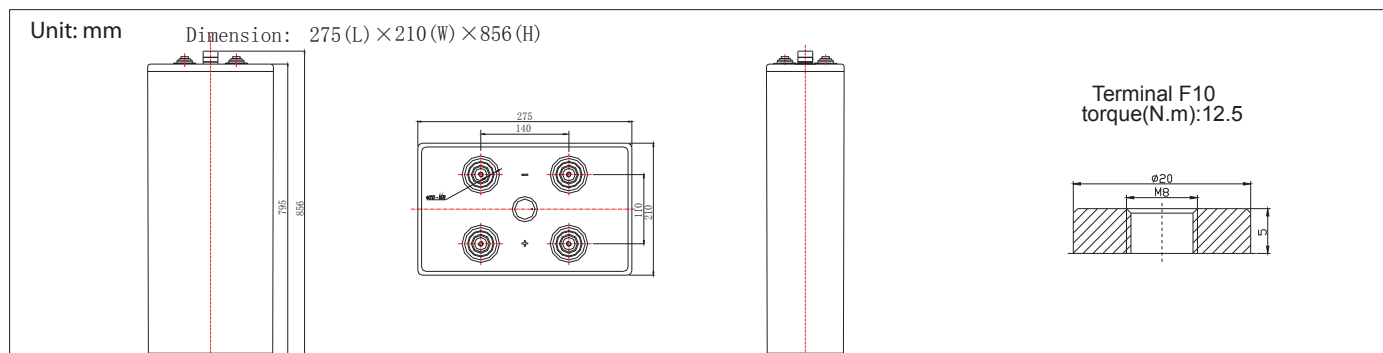
Ritar OPzS series is a flooded Lead Acid battery that adopts Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to DIN40736-2/IEC60896-11 standards and with die-casting positive spine and patent formula of active material. OPzS series exceeds DIN40736-2/IEC60896-11 standard values with more than 20 years floating design life at 25°C and is even more suitable for cyclic use(PV/solar,traction etc) under extreme operating conditions.

Specification

Voltage Per Unit	2V
Capacity	1500Ah@10hr-rate to 1.80V per cell @25°C
Approx Weight	Without Electrolyte 83.5 kg With Electrolyte 113.5kg
Max. Discharge Current	5000 A (5 sec)
Internal Resistance	Approx. 0.21 mΩ
Operating Temperature Range	Discharge: -15°C~50°C Charge: 0°C~40°C Storage: -15°C~50°C
Optimal Operating Temperature Range	25°C±5°C
Float charging Voltage	2.23 to 2.25 V(DC)/cell at 25°C
Maximum Charging Current	150A
Cycle Service	2.40 to 2.45 V(DC)/cell at 25°C
Self Discharge	Self-discharge rate less than 3.5% per month at 25°C. Please charge batteries before using.
Terminal	Thread insert & Bolt (F10-M8)
Container Material	A.S. (UL94-HB), and UL94-V0 is optional



Dimensions



Constant Current Discharge Characteristics : A(25 C)

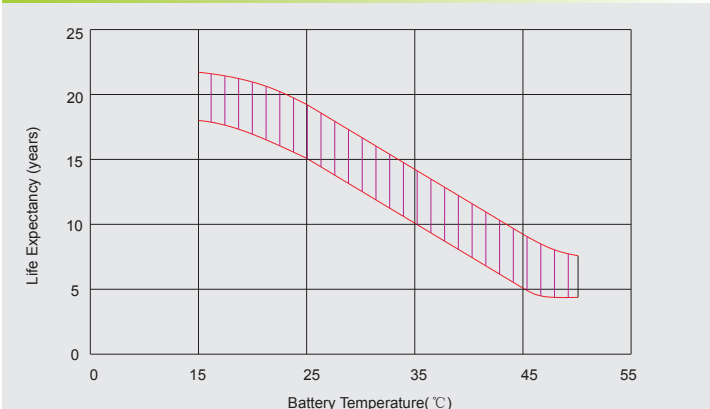
F.V/ Time	30min	1h	2h	4h	5h	8h	10h	20h	24h	48h
1.90	798.1	632.7	446.1	269.3	239.4	163.5	140.2	73.59	61.91	32.71
1.87	892.2	697.6	478.6	284.3	253.2	171.1	146.5	76.90	64.69	34.18
1.83	1022.0	778.7	519.1	299.3	264.6	178.7	152.8	80.21	67.48	35.65
1.80	1135.6	843.6	538.6	305.2	270.7	183.3	157.5	82.69	69.56	36.75
1.75	1265.4	903.6	562.9	310.3	275.6	186.4	160.7	84.34	70.95	37.49
1.70	1395.1	932.8	579.1	315.7	279.9	187.9	162.2	85.17	71.65	37.85
1.65	1438.9	991.2	598.6	320.2	283.7	189.4	163.8	86.00	72.35	38.22
1.60	1500.6	1025.3	621.3	329.2	289.8	191.0	165.4	86.82	73.04	38.59

Constant Power Discharge Characteristics : W(25 C)

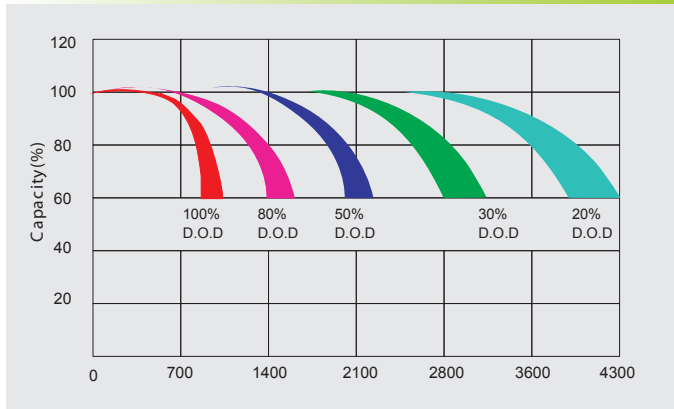
F.V/ Time	30min	1h	2h	4h	5h	8h	10h	20h	24h	48h
1.90	1528	1215	862	527.1	470.7	326.9	285.7	150.0	126.2	66.66
1.87	1681	1319	915	555.6	496.7	340.7	297.9	156.4	131.6	69.51
1.83	1883	1438	973	582.5	517.3	352.9	308.6	162.0	136.3	72.01
1.80	2058	1534	1006	593.6	528.3	360.5	316.2	166.0	139.7	73.79
1.75	2232	1603	1039	601.5	536.2	365.1	320.8	168.4	141.7	74.86
1.70	2393	1619	1065	611.0	543.3	368.2	323.9	170.0	143.0	75.57
1.65	2434	1691	1094	618.9	549.6	371.2	325.4	170.8	143.7	75.93
1.60	2463	1743	1120	634.7	559.1	372.8	326.9	171.6	144.4	76.29

All mentioned values are average values.

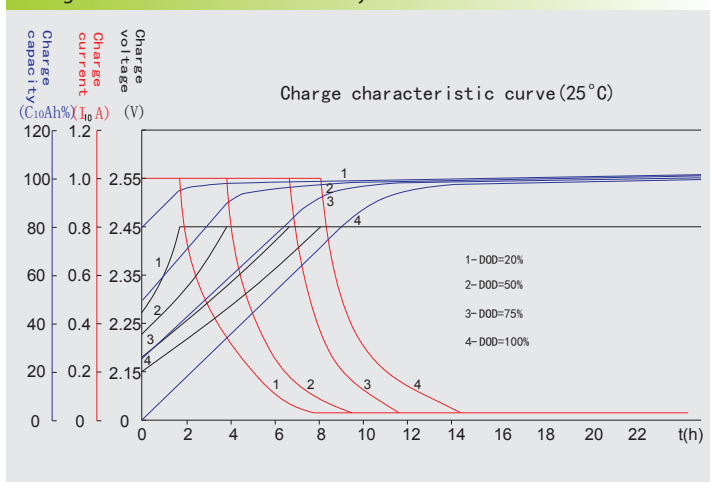
Effect of temperature on long term float life



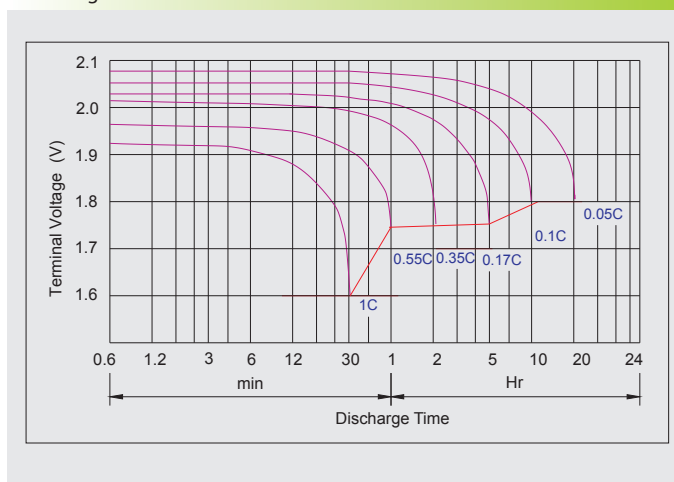
Life characteristics of cyclic use



Charge characteristic Curve for cyclic use



Discharge characteristic Curve



Long time discharge capacity for solar/wind application							
Model	Capacity	C24 (Ah)	C48 (Ah)	C72 (Ah)	C100 (Ah)	C120 (Ah)	C240 (Ah)
		F.V=1.85VPC					
OPzS2-1500		1586.0	1675.8	1759.6	1795.5	1831.4	1939.1

Capacity factors vs temperature (OPzS 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 (Amp)	Final voltage (V/cell)
$I_{dis} \leq 0.1 I_{10}$	1.90
$0.1 I_{10} < I_{dis} \leq I_{10}$	1.85
$I_{10} < I_{dis} \leq 4 I_{10}$	1.80
$4 I_{10} < I_{dis} \leq 6 I_{10}$	1.75
$6 I_{10} < I_{dis} \leq 10 I_{10}$	1.70
$I_{dis} > 15 I_{10}$	1.60

Maintenance & Cautions

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

Charging Method:

Constant Voltage	-0.1Cx2h+2.40~2.45V,24h,Max. Current 0.1CA
Constant Current	-0.1Cx2h+0.1Cx10h+0.05Cx6h

Float Service:

- ※ Every six months, recommend inspection every battery voltage.
- ※ Every six months, recommend equalization charge for one time.
- Equalization charge method:
- Discharge: 40~50% rate capacity discharge.
- Charge: Max. current 0.1CA, constant voltage 2.40-2.45V/cell charge 24h.
- ※ Effect of temperature on float charge voltage: -3mV/°C/cell.
- ※ Service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging method.