

General features for MPHR series battery

- ★ MPHR stands for "High Rate Discharge." The series is a modern hi-tech energy application product;
- ★ Lead-calcium alloy grids and the use of high purity lead account for superior shelf-life characteristics;
- ★ Precision plate pasting for higher consistency with 100% load testing to ensure uniform capacity;
- ★ When it is used in safe surroundings, the battery is maintenance free, and you never need to add electrolyte, It can be recycled repeatedly;
- ★ High energy, high intensity, high quality output electrical energy product series.



Maxton Power Tech Co., Ltd
www.maxtonpower.com
info@maxtonpower.com

MPHR12-250W (12V65Ah)

Specifications

Nominal Voltage		12V
Number of cell		6 cells
Rated capacity (25°C)	Rated capacity/cell (15 minutes rate to 1.67V/cell)	250W
	Rated capacity (10 hour rate)	65Ah
Dimensions (±2mm)	Total Height	T16 179mm (7.05 inches)
		T9 179mm (7.05 inches)
	Height	179mm (7.05 inches)
	Length	350mm (13.8 inches)
	Width	166mm (6.54 inches)
Weight Approx (±3%)		22.5Kg (49.65 lbs)

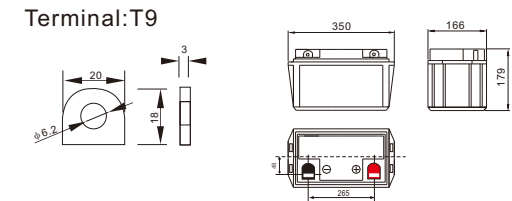
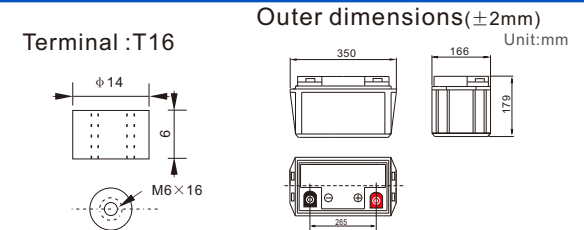
Battery picture and construction



Battery Construction

Component	Positive plate	Negative plate	Container	Cover
Raw material	Lead dioxide	Lead	ABS	ABS
Component	Electrolyte	Separator	Safety valve	Terminal
Raw material	Dilute sulfuric acid	Fiberglass	Rubber	Copper

Outer dimension and terminal



Characteristics

Capacity 25°C(77°F)	30 minutes rate(81.39A,1.70V/cell) 15 minutes rate(137.8A,1.67V/cell) 5 minutes rate(248.8A,1.60V/cell)	904W 1500W 2647W
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 5.0 mΩ
Capacity affected by Temperature (20hour rate)	40°C (104°F)	102%
	25°C (77°F)	100%
	0°C (32°F)	85%
	-15°C (5°F)	65%
Remaining capacity Self-Discharge At 25°C(77°F)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	82%
	Capacity after 12 month storage	64%
Terminal type	T16 (Option T9)	
Max. Discharge current 25°C/(77°F)	650A (5Seconds)	
Nominal operating temperature	25°C ±5°C(77°F ±9°F)	
Operating Temperature Range	Discharge	-15°C ~50°C (5°F ~122°F)
	Charge	-10°C ~50°C (14°F ~122°F)
	Storage	-20°C ~50°C (-4°F ~122°F)
Charge methods (constant Voltage) At 25°C(77°F)	Cycle use	Initial Charging Current less than 16.3 A Voltage 14.50-15.00V Temperature compensation:-30mV/°C
	Standby use	Voltage 13.50-13.80V Temperature compensation:-18mV/°C

Constant current discharge (25°C , 77 °F)

Unit:A

Time F.V/cell	5min	15min	30min	45min	60min	90min	5hours	10hours
1.60V	248.8	143.5	87.79	64.18	50.10	37.21	11.06	7.21
1.67V	235.6	137.8	84.23	60.91	47.88	35.29	10.96	7.07
1.70V	219.1	132.8	81.39	59.52	46.35	33.75	10.87	6.92
1.75V	202.6	124.2	75.67	54.66	42.26	31.68	10.72	6.73
1.80V	193.2	110.0	68.37	49.42	38.89	29.71	10.63	6.54
1.85V	169.6	100.7	63.80	46.35	36.49	28.22	10.38	6.35

Note:
the end voltage means Voltage per cell.
(Above characteristics data are average values obtained within three charge/discharge cycles,not the minimum values.)

Constant power discharge (25°C , 77 °F)

Unit:watts

Time F.V/cell	5min	10min	15min	20min	30min	45min	60min	90min
1.60V	2647	1980	1534	1264	943	694	544	405
1.67V	2534	1916	1500	1243	922	669	531	391
1.70V	2421	1843	1466	1213	904	660	519	377
1.75V	2310	1800	1427	1191	887	638	497	360
1.80V	2197	1612	1264	1106	788	570	450	345
1.85V	1956	1440	1149	1020	733	536	423	328

Note:
the end voltage means Voltage per cell.
(Above characteristics data are average values obtained within three charge/discharge cycles,not the minimum values.)

General features for MPHR12-270W (High rate discharge)

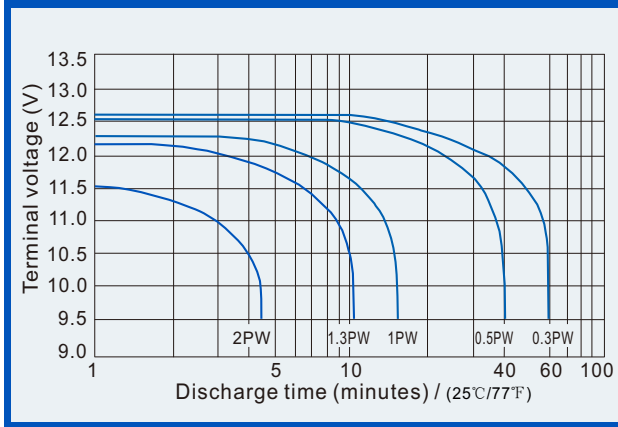
- * Positive and negative plates in lead-calcium tin alloy
- * Superior energy density
- * Operates at a low internal pressure.
- * Gas Recombination
- * Very high power output
- * Application specific designs
- * Six months self-life at 25°C (77°F), then a freshening charge is required.
- * Design life 10 years @ floating service at 25°C (77°F).



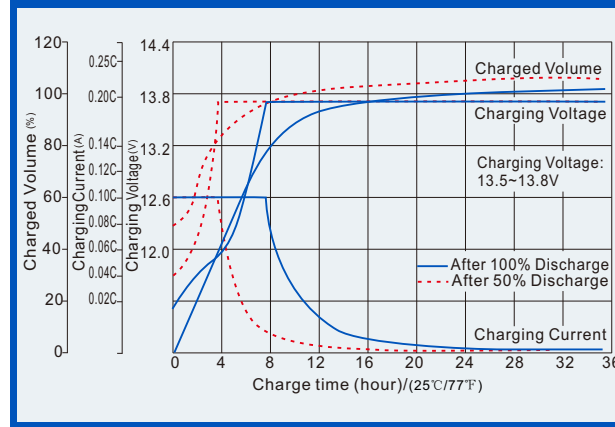
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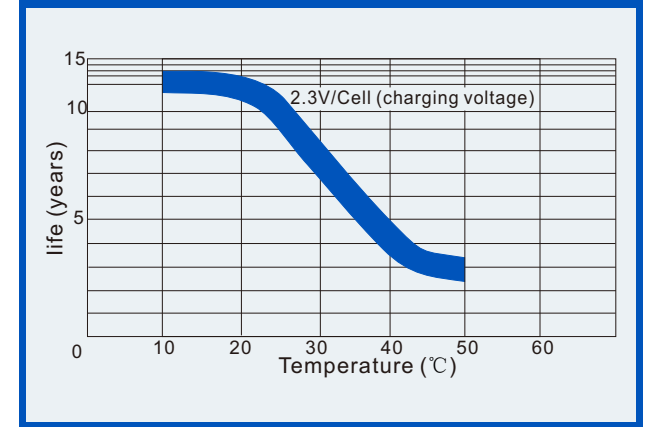
Terminal voltage(V) and discharge time



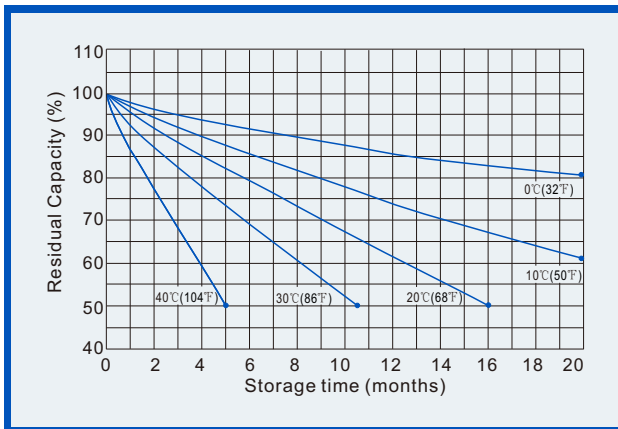
Battery voltage and charge time for standby use



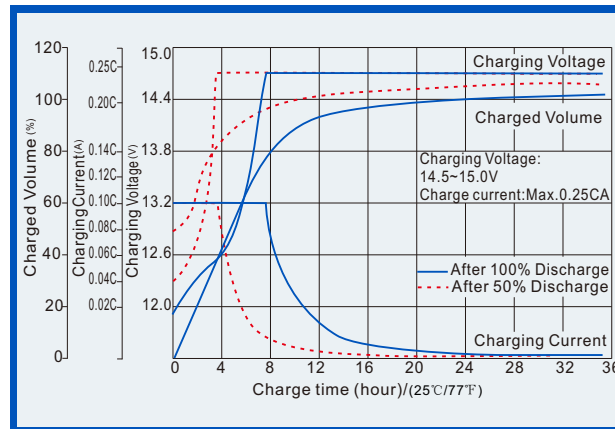
Life Characteristics of float service



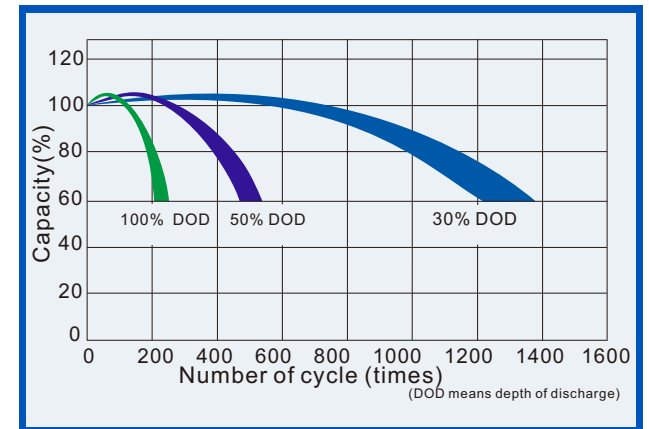
Self-discharge characteristics



Battery voltage and charge time for cycle use



Life characteristics of Cyclic Use



Charging procedures

Application	Charging voltage(V)			Max Charging current
	Temperature	Set Point	Allowable range	
Cycle Use	25°C(77°F)	14.70	14.50~15.00	16.3A
Standby Use		13.70	13.50~13.80	

Discharging current & discharging voltage

Final Discharging Voltage (V)	10.50	10.20	9.60	7.80
Discharging Power (W)	0.1P > (W)	0.1P ≥ (W) < 0.25P	0.25P ≤ (W) < 1.0P	W ≥ 1.0P