



12 VOLT RECHARGEABLE SERIES

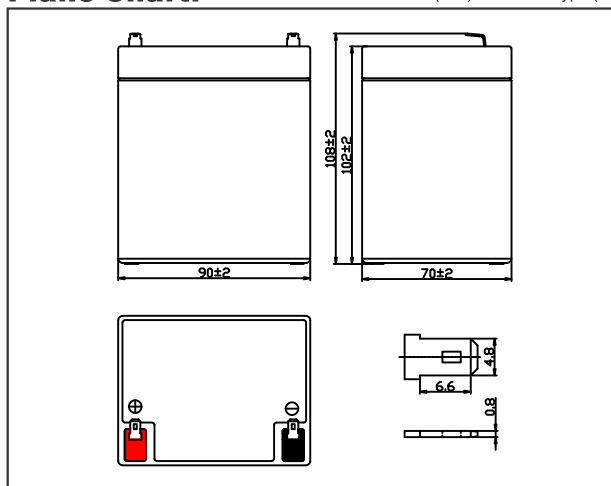
MODEL: TP4.5-12

NO.:302010005-00227



Plane Chart:

Unit:(mm) Terminal type:(F1)



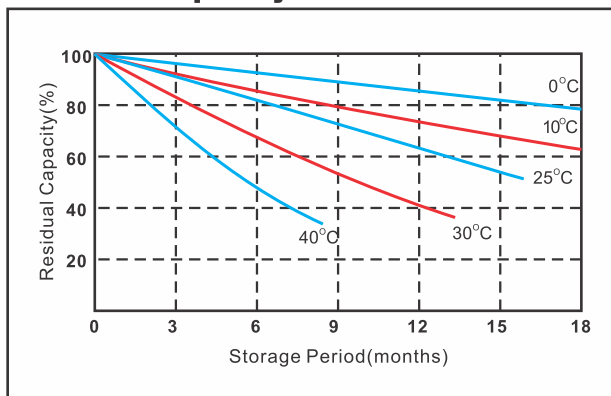
ISO 9001
ISO 14001
OHSAS18001



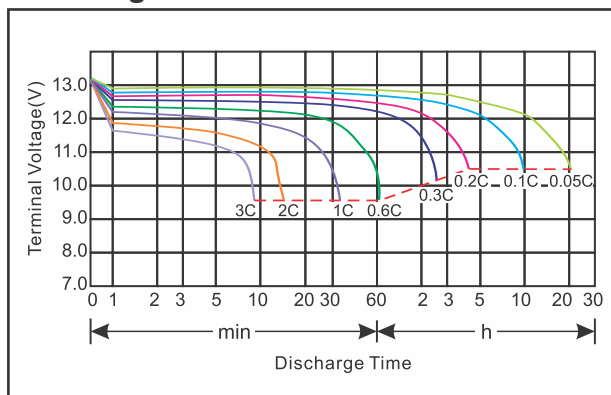
Parameter Chart:

Volts		12V	
Capacity(25°C)	20 hours rate (0.2A)	4Ah	
Discharge Current Testing (25°C)	20 I ₂₀ rate (4A,27min)	35min	
	60 I ₂₀ rate (12A,7min)	7min	
Internal Resistance	Full Charged Battery 25°C	42mΩ	
Capacity Affected By Temperature	40°C	104%	
	25°C	100%	
	0°C	83%	
	-15°C	65%	
Residual Capacity (25°C)	Capacity After 3 Months Storage	91%	
	Capacity After 6 Months Storage	82%	
	Capacity After 12 Months Storage	65%	
Charge (Constant Voltage)	Cycle (25°C)	Initial Charging Current Less Than 1.2A Voltage 14.5~14.9V	
	Float (25°C)	Charge Voltage 13.6~13.8V	
Weight (Approx)		1.43Kg	

Residual Capacity



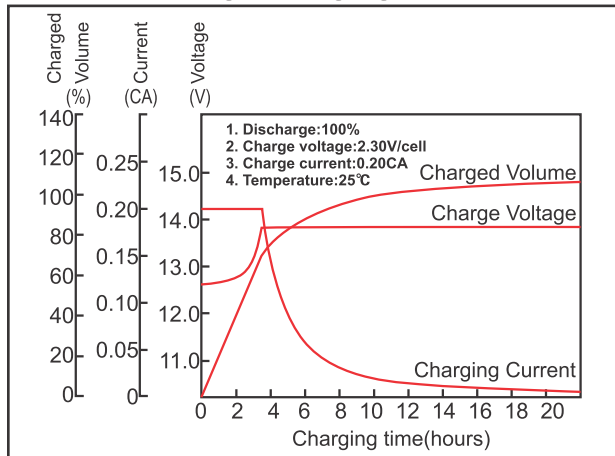
Discharge Current 25°C



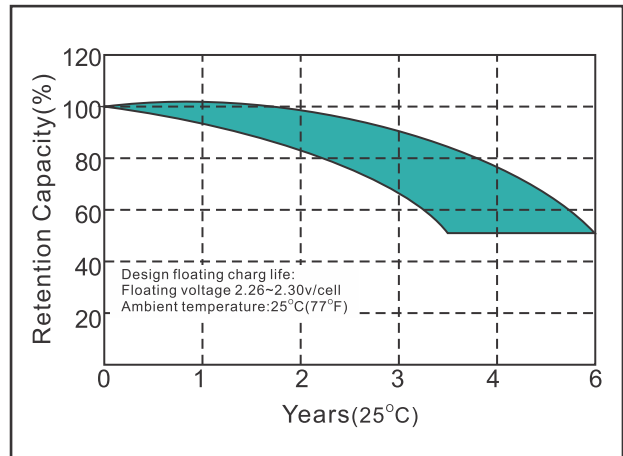
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Constant voltage charging characteristics



Float Life



Constant Current Discharge Characteristics (A, 25°C)

F.V/Time	5min	10min	15min	30min	60min	2h	3h	5h	8h	10h	20h
9.60V	13.96	8.90	7.17	4.34	2.41	1.34	0.96	0.66	0.47	0.39	0.21
10.2V	13.28	8.45	6.88	4.17	2.32	1.32	0.94	0.65	0.46	0.38	0.21
10.5V	12.87	8.19	6.71	4.06	2.26	1.31	0.93	0.64	0.46	0.37	0.20
10.8V	12.45	7.92	6.53	3.95	2.20	1.29	0.92	0.63	0.45	0.37	0.20

Constant Current Discharge Characteristics (Watt, 25°C)

F.V/Time	5min	10min	15min	30min	60min	2h	3h	5h	8h	10h	20h
9.60V	155.45	100.36	81.50	49.73	28.00	15.66	11.39	7.85	5.58	4.70	2.54
10.2V	147.90	95.08	78.48	47.77	26.86	15.45	11.24	7.77	5.53	4.60	2.50
10.5V	143.37	92.06	76.52	46.56	26.18	15.28	11.09	7.66	5.51	4.50	2.45
10.8V	138.85	89.04	74.55	45.35	25.51	15.11	10.94	7.55	5.48	4.40	2.40

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
Battery	12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%

★The above are average and data obtained from the first 3 charge/discharge cycles. These are not minimum values.