

NPS Series..... Solar / PV Batteries

Based on 18-year experience in research and development, we succeeded in developing NPS batteries mainly suitable for Solar / Wind power or Photovoltaic system and then we called it as PV batteries too. In fact, use of AGM batteries in deep cyclic applications is short sighted because the AGM batteries will fail prematurely indeed the AGM battery capacity will start to reduce from the day of installation. With the great help of Doctor Yoshida Masayoshi in Toyama University in Japan, we combine gel technologies with deep cycle technologies by putting some special elements in lead alloy and some additive in electrolyte to get much more longer cycle life for NPS batteries.

Main Features:

- Reduce cell failure due to premature dry out
- Extend cycle service life by reducing plate corrosion
- Gelled Thixotropic electrolyte
- Meet EUROBAT (draft IEC 896-2), IEEE, JIS and BS 6290 Part 4, using UL certified components
- 10-year service life for 6 / 12V NPS batteries and 15-year service life for 2V NPS batteries

■ Main Applications

- Solar Photovoltaic/ Solar / Wind power system
- Alternative Energy Storage
- Wheelchair / Electric vehicle
- Boats/Marine/Navigational Aids

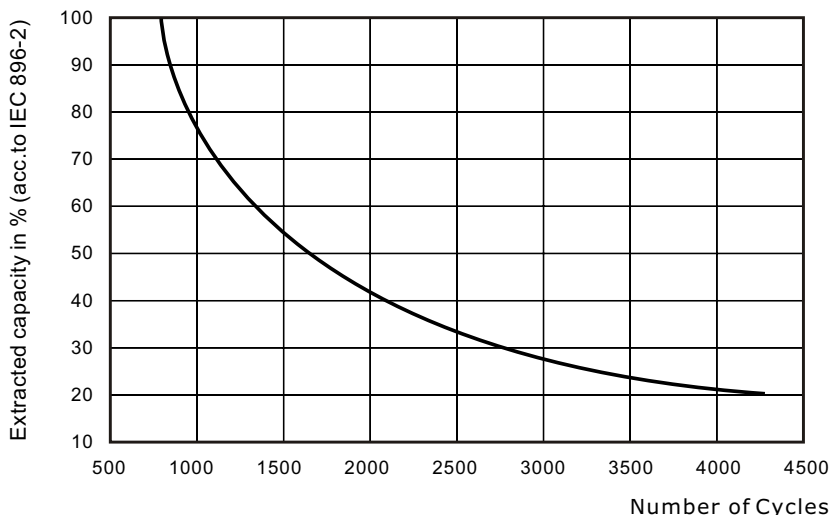
Charging method

It is recommended to use Constant Voltage method to charge NPS batteries. The charging voltage must be regularly checked. To optimize the battery performance, it is a must to ensure that the voltage is kept within the following limits.

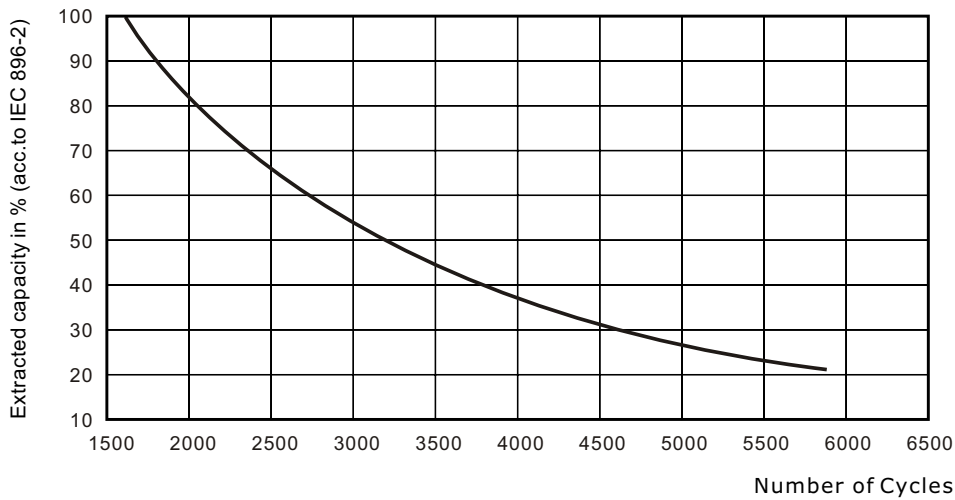
- Float Service: $2.25 \pm 1\%V$ Per Cell at 20/25°C
- Cycle Service: $2.35 \pm 1\%V$ Per Cell at 20/25°C

Endurance in cycles according to IEC 896-2

Cycle Life at Different DOD for 6V/12V NPS batteries



Cycle Life at Different DOD for **2V** Batteries



Temperature Effects

Temperature affects the battery in many different ways. The battery will operate in extreme temperature ranges from -15°C (5°F) to 50°C (122°F). However, the Gel battery nominal capacity, and optimum performance are based on operating temperature of 20 - 25 °C. Above the temperature the battery capacity will increase slightly but its life will decrease at higher temperature. When designing your battery system the different discharge and recharge performance at different temperature should be taken into account, details of both listed below.

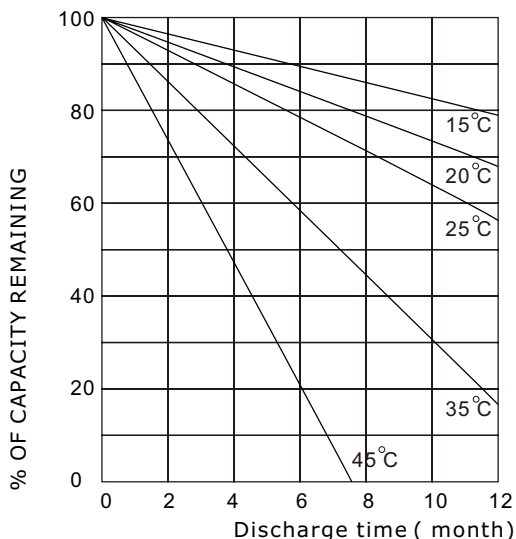
• Temperature Compensation

Temperature Compensation is the process whereby the charge voltage is changed as a function of the battery temperature. For higher or lower temperatures outside the table range use temperature correction factor of **0.003 per volt/per/cell/°C**

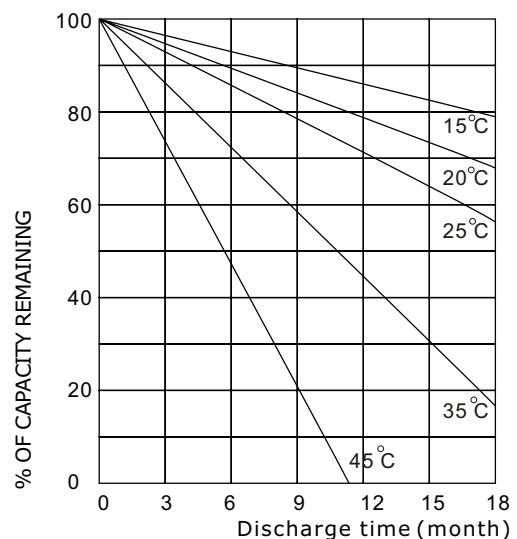
Battery Float Charging (Temperature compensation)	
Temperature Deg.°C	Float Charge Volts/Cell
5	2.31
10	2.29
15	2.27
20	2.25
25	2.25
30	2.23
35	2.21

• Self-discharge Characteristics

6V/12V batteries



2V batteries



General Specifications

Type	Nom	Rated Capacity	Length		Width		Height		Total height		Approx. Weight		Terminal Type
	Volt		(Ah)	mm	in	mm	in	mm	in	mm	in	Kg	
NPS100-6	6	100	194	7.64	170	6.69	204	8.03	210	8.27	18	39.5	T2
NPS120-6		120	195	7.67	170	6.69	207	8.14	210	8.26	19	42	T5
NPS150-6		150	260	10.24	180	7.09	247	9.65	251	9.88	21.9	47.9	T5
NPS160-6		160	298	11.73	172	6.77	227	8.94	231	9.09	29	63.8	T2
NPS180-6		180	306	12.05	169	6.65	220	8.66	226	8.9	30.4	66.9	T16
NPS225-6		225	260	10.24	180	7.09	247	9.65	251	9.88	30.9	68.1	T5
NPS24-12	12	24	166	6.54	175	6.89	125	4.92	125	4.92	8.9	19.4	L2 / T2
NPS38-12		38	197	7.76	165	6.5	170	6.69	170	6.69	13.8	30.3	L4/T2
NPS50-12		50	229	9.02	138	5.43	208	8.19	227	8.94	19.5	42.6	L4/T3
NPS65-12		65	350	13.8	167	6.57	179	7.05	183	7.2	22.5	49.5	L9/T4
NPS70-12		70	260	10.2	169	6.65	208	8.19	228	8.98	23.5	52	L15/T3
NPS90-12		90	306	12.1	169	6.65	208	8.19	231	9.09	28.2	61.8	T5
NPS100-12		100	407	16.1	174	6.93	210	8.94	233	9.17	31.5	34.6	L12/L16/T5
NPS120-12		120	407	16.1	174	6.93	210	8.94	233	9.17	33.3	72.8	L12/T5
NPS134-12		134	342	13.5	172	6.77	273	10.75	277	10.91	42	92.4	T16
NPS150-12		150	485	19.1	172	6.77	240	9.45	240	9.45	48.2	105	L13/T4
NPS160-12		160	532	20.9	206	8.23	216	8.43	221	9.21	53.4	117.5	L14/T5
NPS200-12		200	522	20.6	240	9.37	219	8.58	240	9.45	62.4	137.2	L14/T5
NPS250-12		250	520	20.5	268	10.5	220	8.66	241	9.49	71.6	157.5	L14/T5
NPS50-2		2	50	160	6.3	49	1.93	166	6.54	176	6.93	3.6	7.6
NPS100-2	100		171	6.73	72	2.8	205	8.15	230	9.05	6.8	19.8	L10/T5
NPS150-2	150		171	6.73	102	4.02	205	8.15	230	9.05	9.4	20.7	T5
NPS200-2	200		171	6.81	111	4.37	330	13	367	14.5	14.5	32	T5
NPS300-2	300		171	6.73	151	5.94	330	13	367	14.5	20.5	45.1	T5
NPS400-2	400		210	8.27	176	6.93	330	13	367	14.5	26.5	58.3	T5
NPS500-2	500		241	9.49	172	6.89	330	13	367	14.5	31.5	69.3	T5
NPS600-2	600		302	11.9	175	6.89	330	13	367	14.5	41.0	90.2	T5
NPS800-2	800		410	16.1	175	6.89	330	13	367	14.5	52.0	114.0	T5
NPS1000-2	1000		475	18.7	175	6.89	330	13	367	14.5	65.0	143.0	T5
NPS1500-2	1500		400	15.7	350	13.8	345	13.6	378	14.94	104.0	228.5	T5
NPS2000-2	2000		491	19.3	350	13.8	345	13.6	369	14.5	131.7	289.7	T5
NPS3000-2	3000		710	28	350	13.8	345	13.6	369	14.5	200.0	440.0	T5