Yuasa as leading manufacturer of maintenance-free, valve regulated stationary lead acid batteries has been improving all properties determining reliability and operational performance. The effect is, that the end-user acquires a fully mature and commercially accepted product which, typically has a service life of up to 5 years when operated und recommended conditions.

NP Series General Specifications

Battery Type	FR Option**	Nominal Voltage V	Capacity 20h, 1,75 V	Capacity 10 h, 1,75 V	Length mm	Width mm	Height mm	Weight kg	Layout	Terminal
NP 1-6	x	6	1	0,9	51	42,5	54,5	0,25	5	A
NP 1,2-6		6	1,2	1,1	97	25	54,5	0,31	1	A
NP 2,8-6		6	2,8	2,6	134	34	64	0,57	1	A
NP 3-6	x	6	3	2,8	134	34	64	0,70	1	A
NP 4-6		6	4	3,7	70	47	105,5	0,85	5	A
NP 7-6	x	6	7	6,5	151	34	97,5	1,35	1	A
NP 10-6*	x	6	10	9,3	151	50	97,5	1,93	1	A
NP 10-6L	x	6	10	9,3	151	50	97,5	1,93	1	D
NP 12-6*		6	12	11,2	151	50	97,5	2,05	1	D
NP 0.8-12	x	12	0,8	0,7	96	25	61,5	0,35	6	E
NP 1.2-12*	x	12	1,2	1,1	97	48	54,5	0,57	3	A
NP 1,9-12*	x	12	1,9	1,7	178	34	64	0,81	1	A
NP 2-12	x	12	2	1,8	150	20	89	0,70	7	B
NP 2.1-12*	x	12	2,1	1,9	178	34	64	0,83	1	A
NP 2.3-12		12	2,3	2,1	178	34	64	0,94	1	A
NP 2.8-12		12	2,8	2,6	134	67	64	1,10	3	A
NP 3.2-12***	x	12	3,2	3,0	134	67	64	1,17	4	A
NP 4-12	x	12	4	3,7	90	70	106	1,70	1	A
NP 7-12*	x	12	7	6,5	151	65	97,5	2,65	4	A
NP 7-12L	x	12	7	6,5	151	65	97,5	2,65	4	D
NP 12-12*	x	12	12	11,2	151	98	97,5	4,09	4	D
NP 17-12 I*	x	12	17	14,0	181	76	167	5,97	2	C
NP 24-12 I*		12	24	22,3	166	175	125	8,92	2	C
NP 38-12 I*		12	38	35,4	197	165	170	13,93	2	C
NP 65-12 I*		12	65	60,5	350	166	174	22,82	2	C

* VdS-certificates available on request
** FR = flame retardant container
*** Polarity will be reversed (180°) from 1.10.2001, new product designation NP 3.2-12, see layout no. 3.

- NP batteries can be permanently put into operation laying on the side; any operation upside down is solely permissible for one discharge operation
- The battery container is manufactured from ABS
- Container material for FR batteries is flame-retardant according to UL 94 VO, equivalent to EN 60707
- Manufacture of NP batteries according to ISO 9002 Quality Management Systems and ISO 14001 Environmentally Management Systems
- Extension of service life by reduced speed of corrosion by means of special alloy
- Certified by VDS
- Entered in the UL Directory of Recognized Components, File No. BAZR2.MH12970

- Valve-regulated design, greater than 99% gas recombination efficiency during charging
- AGM = absorbing glassmatt technology in which the electrolyte is fully absorbed-no free electrolyte
- Maintenance-free operation, no addition of water required
- Heavy duty grids giving high performance and long life
- Wide range of operating temperatures with temperature regulated voltage compensation
- Very good charging efficiency
- Classified as „non-spillable“ and therefore exempt from IATA Dangerous Goods Regulations
- Conforming to EN 61056-2
- Extendedshelf life at low self-discharge level, approxemately 3% per month at 20°C

Main Fields of Applications

- Uninterruptible Power Supply (UPS)
- Telecommunication
- Emergency Lighting
- Fire alarm and security Systems
- Medical appliance
- Solar applications
- Electronic test equipment
- Electronic measuring devices
- Geophysical devices
- Marine Equipment

YUASA NP Series Standardized Quality

ISO 9002 (EN 29002)	Batteries from our European factory are manufactured in accordance with ISO 9002
VDS Qualification	For the utilisation in alarm or security system, the NP batteries are tested and qualified by VdS
IEC 1056/ IEC 892 Part 2	In accordance with international Standard for maintenance free sealed stationary batteries
DIN	Like DIN-43534;

Standards	accumulators with plates and electrolyte absorbing glass-matt
VDE-Standards	VDE 107 Guideline (appliance in medical rooms); VDE 108 Guideline (Emergency Lighting);According to VDE 0510/part 2, the NP series recombines highly efficiently and evaporates to a negligible extent VDE 0833 Part 1 (Burglar Alarm Systems)
UL-Approval	The NP is registered under MH 12970 UL Safety Standard (emergency lighting, UPS)
IATA	The NP is, according to A 67. UN 2800 Special Provsions, free from leaking, no dangerous good for air transport, classified as non-spillable and therfore exempt from IATA Dangerous Goods Regulations use

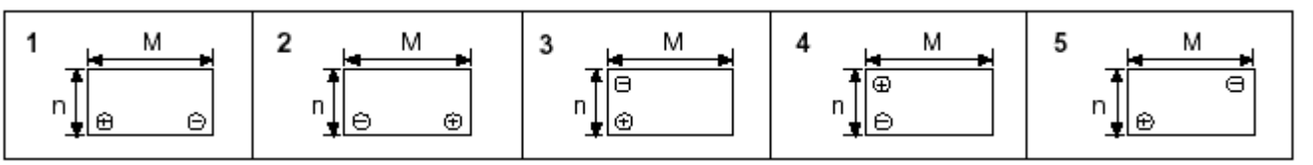
Recommended Cut-off Voltage

Discharge current	Cut-off Voltage/cell
> 0,10 CA	1,75 V / cell
0,17 CA	1,70 V / cell
0,26 CA	1,67 V / cell
0,60 CA	1,60 V / cell
3 CA	1,50 V / cell Depth of discharge detrimental to service life

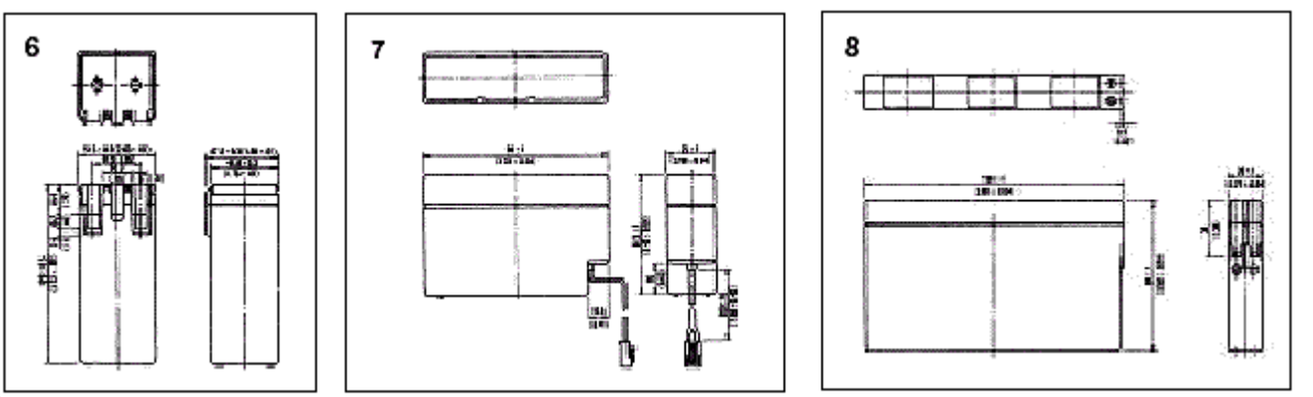
Top-Charging-Recommendation

Battery Age Storagetime	Top Charging Recommendition
up to 6 months after date of manufacture	4-6 hrs. at 0,1 C constant current or 15 - 20 hrs at constant voltage 2,4V/cell
	more than 72 hours at constant voltage 2,275 V/cell
up to 12 months after date of manufacture	8-10 hrs. at 0,1 C constant current or 20-24 hrs at constant voltage 2,4V/cell
	48-144 hrs. at constant voltage 2,35 V/cell

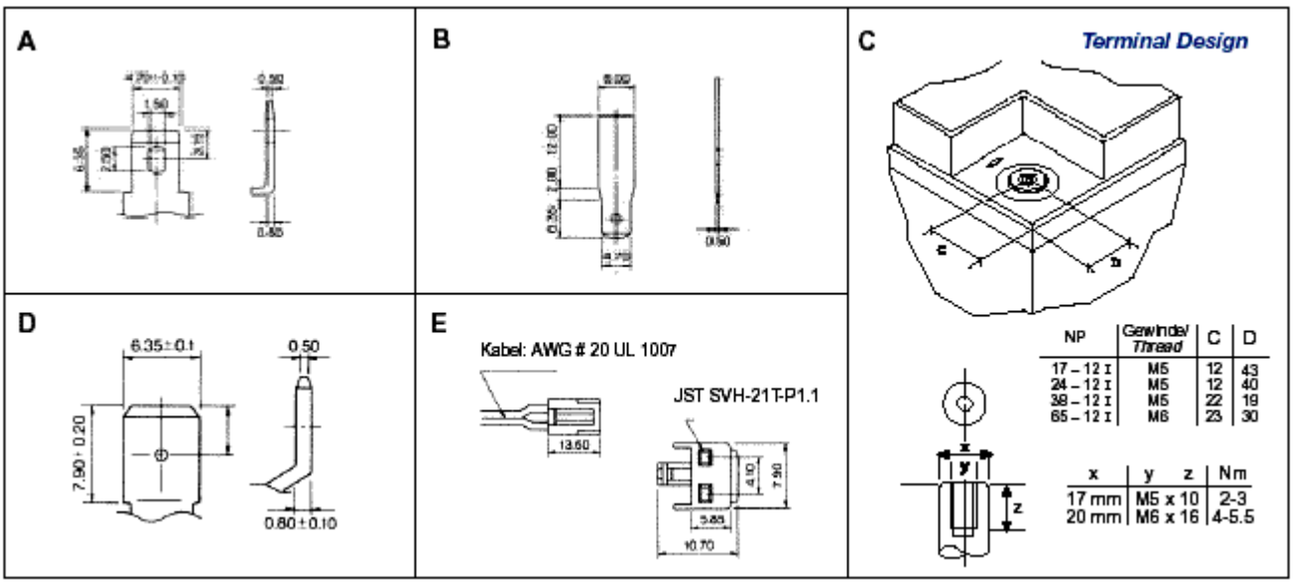
Terminal Location



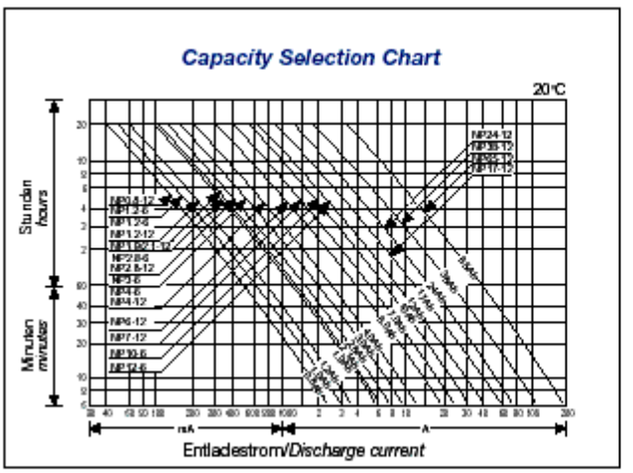
Dimensions

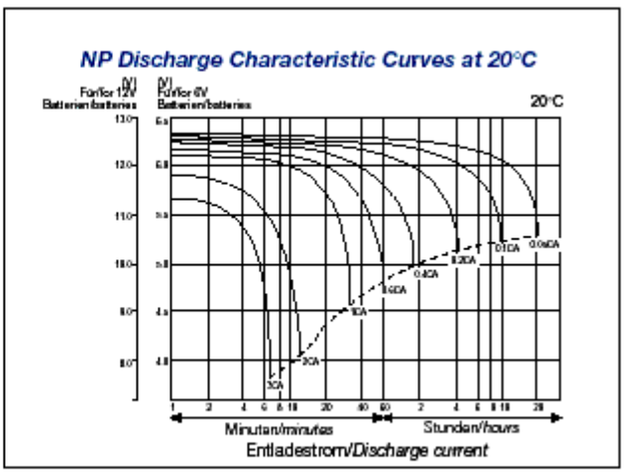


Terminals



Specifications





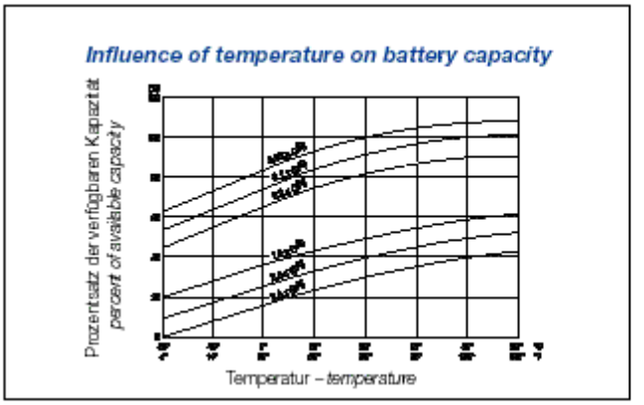
Specifications

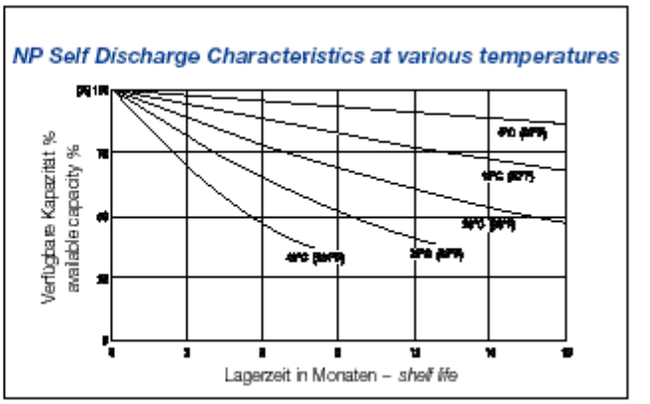
Discharge current (Ampères) at stipulated discharge rates

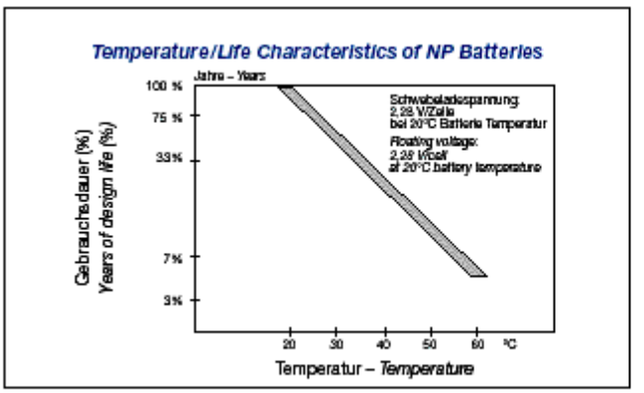
20 hrs. capacity	0,05 C	0,1 C	0,2 C	0,4 C	0,6 C	1 C	2 C	3 C
0,8 Ah	0,04 A	0,08A	0,16 A	0,32 A	0,48 A	0,8 A	1,6 A	2,4 A
1,0	0,05	0,10	0,20	0,40	0,60	1,0	2,0	3,0
1,2	0,06	0,12	0,24	0,48	0,72	1,2	2,4	3,6
2,0	0,10	0,20	0,40	0,80	1,20	2,0	4,0	6,0
2,1	0,105	0,21	0,42	0,84	1,26	2,1	4,2	6,3
2,3	0,115	0,23	0,46	0,92	1,38	2,3	4,6	6,9
2,8	0,14	0,28	0,56	1,12	1,68	2,8	5,6	8,4
3,0	0,15	0,30	0,60	1,20	1,80	3,0	6,0	9,0
4,0	0,20	0,040	0,80	1,60	2,40	4,0	8,0	12,0
6,0	0,30	0,60	1,20	2,40	3,60	6,0	12,0	18,0
7,0	0,35	0,70	1,40	2,80	4,20	7,0	14,0	21,0
8,0	0,40	0,80	1,60	3,20	4,80	8,0	16,0	24,0
10,0	0,50	1,00	2,00	4,00	6,00	10,0	20,0	30,0
12,0	0,60	1,20	2,40	4,80	7,20	12,0	24,0	36,0
17,0	0,85	1,70	3,40	6,80	10,20	17,0	34,0	51,0
24,0	1,20	2,40	4,80	9,60	14,40	24,0	48,0	72,0
38,0	1,90	3,80	7,60	15,20	22,80	38,0	76,0	114,0
65,0	3,25	6,50	13,00	26,00	39,00	65,0	130,0	195,0

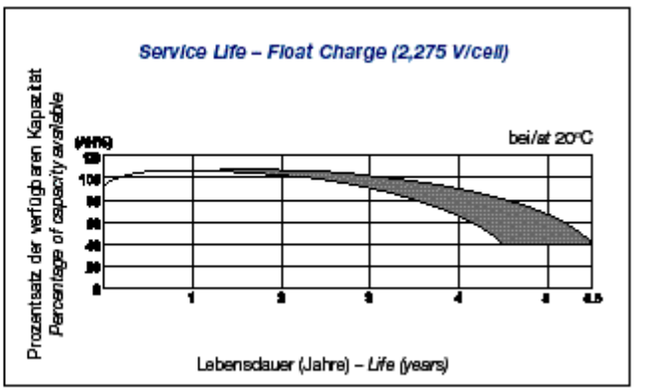
Power drain over time at stipulated cut-off voltages: Watt/AH/Cell at 20°C

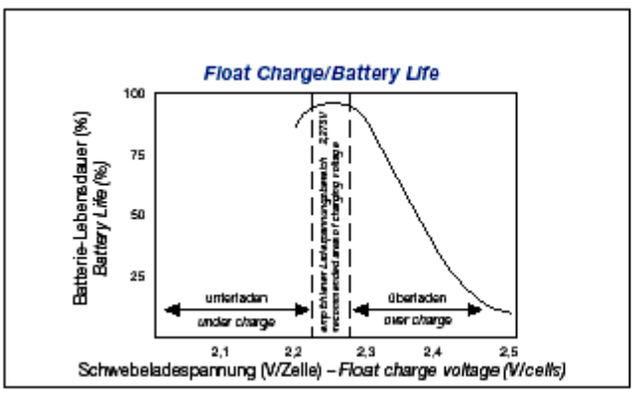
Entladezeit/ *Discharge time* V/Zelle V/cell	5 M	10 M	15 M	20 M	25 M	30 M	35 M	40 M	45 M	60 M	2 Std. *2 hrs.*	3 Std. *3 hrs.*	5 Std. *5 hrs.*
1,6	5,421	3,884	3,074	2,554	2,211	1,943	1,767	1,621	1,490	1,201	0,721	0,524	0,346
1,63	5,303	3,864	3,016	2,533	2,191	1,938	1,747	1,611	1,471	1,198	0,716	0,521	0,343
1,65	5,268	3,806	2,984	2,513	2,178	1,914	1,743	1,602	1,458	1,194	0,713	0,518	0,341
1,67	5,173	3,740	2,952	2,503	2,159	1,895	1,728	1,589	1,445	1,186	0,708	0,515	0,339
1,69	5,056	3,712	2,922	2,477	2,128	1,881	1,705	1,580	1,432	1,174	0,704	0,513	0,337
1,7	4,945	3,632	2,907	2,467	2,116	1,872	1,702	1,567	1,422	1,171	0,700	0,511	0,35
1,75	4,692	3,551	2,822	2,372	2,048	1,819	1,648	1,517	1,373	1,151	0,682	0,496	0,326
1,8	4,493	3,389	2,559	2,272	1,964	1,754	1,579	1,444	1,318	1,086	0,658	0,478	0,314
1,85	4,130	3,163	2,526	2,144	1,857	1,655	1,482	1,350	1,240	1,023	0,622	0,459	0,300

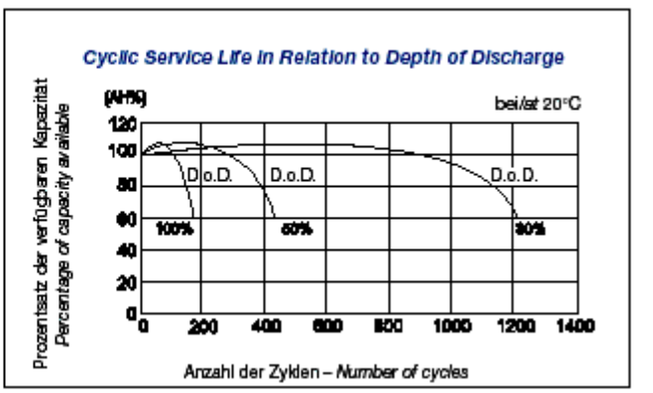












To be noted

- Constant current and constant power discharge data of the NP series are taken at 20°C battery temperature. Theese are nominal values and thereby guaranteed. Typical values, however, may exceed the nominal ones, guaranteed for, by up to 30% for individual battery types under the same test conditions and can be readily made available on special request.

- The estimated service life of the NP series is about 3-5 years and can be archieved under optimal service conditions provided that the battery is permanently kept on float-charge of 2,275 V/cell +-0,005 V/cell at 20°C and that the ripple current does not exceed 0,1 C(A)

- The maximum service life can only be optained by float-charging at the correct voltage, which is temperature dependent. Temperature compensation is required in order to avoid overcharge at high temperature and undercharge at low temperature. The recommended temperature compensation factor is -3mV/cell/°C with reference to a standard temperature of 20°C.

- Owing to a rising internal resistance of the batteries at temperature below 20°C, it is

recommended to increase the float-charge voltage by +3mV/cell/°C.

- At temperature above 20°C service life of the battery will be diminished even if temperature compensated float-charging is applied.

- In order to avoid thermal runaway, it is mandatory to temperature-compensate the float-charge voltage by -3mV/cell/°C for temperature above 40°C.

- In order to achieve the optimal service life of the NP series please respect the separately published installation, operation and maintenance instructions.