

NUCLEAR QUALIFIED

Designed and manufactured using a quality management system qualified to the requirements of 10CFR50 Appendix B, and ASME NQA-1 1994.

Built in accordance to a quality management system that encompasses 10CFR50 Appendix B and NQA-1 1994, the EnerSys® PowerSafe® GN battery is the battery of choice for the resurgent nuclear market. As a leader in the production of industrial batteries, EnerSys stands poised to deliver a quality Class IE battery for your safety related application.

BATTERY RANGE SUMMARY

Nominal Capacity 1140Ah - 3600Ah

- Highest 1 minute rates
- Lowest maintenance - lowest water loss, lowest maintenance costs
- Slide-Lock™ terminal post seal, virtually eliminates terminal post corrosion, while allowing plate growth
- 20 year life expectancy
- Flat plate construction - calcium alloy grids
- For float applications where high ambient temperatures are not probable
- Optimum ratio of plate surface area to electrolyte volume for maximized performance
- Specifically suited for demanding complex load profiles requiring high initial and end currents



EnerSys®

Power/Full Solutions

RESERVE
POWER



General Specifications

PowerSafe® GN Battery Type*	NOM Ah CAP ¹	Nominal Dimensions						Weight - Volumes							
		Length**		Width		Height		Unpacked		Domestic Packed		Electrolyte only/ 1.215 SG			
		in	mm	in	mm	in	mm	lbs	kg	lbs	kg	lbs	kg	gal	ltr
2GN-13	1140	12.4	315	15.1	384	27.2	691	445	202	465	211	119	54	11.9	45
2GN-15	1260	12.4	315	15.1	384	27.2	691	485	220	505	229	111	50	11.1	42
2GN-17	1500	16.6	422	15.1	384	27.2	691	585	265	607	275	163	74	16.3	62
2GN-19	1600	16.6	422	15.1	384	27.2	691	620	281	642	291	155	70	15.5	59
2GN-21	1700	16.6	422	15.1	384	27.2	691	655	297	677	307	147	67	14.7	56
2GN-23	1800	16.6	422	15.1	384	27.2	691	695	315	717	325	139	63	13.9	53
GN-25	2200	12.4	315	15.1	384	27.2	691	440	199	460	209	123	56	12.3	46
GN-27	2320	12.4	315	15.1	384	27.2	691	460	209	480	218	119	54	11.9	45
GN-29	2430	12.4	315	15.1	384	27.2	691	480	217	500	227	115	52	11.5	43
GN-31	2520	12.4	315	15.1	384	27.2	691	495	224	515	233	111	50	11.1	42
GN-33	2590	12.4	315	15.1	384	27.2	691	515	233	535	243	107	48	10.7	40
GN-35	3080	16.6	422	15.1	384	27.2	691	610	277	632	287	160	72	16.0	60
GN-37	3200	16.6	422	15.1	384	27.2	691	630	285	652	296	156	71	15.6	59
GN-39	3320	16.6	422	15.1	384	27.2	691	650	295	672	305	152	69	15.2	57
GN-41	3430	16.6	422	15.1	384	27.2	691	665	302	687	311	148	67	14.8	56
GN-43	3520	16.6	422	15.1	384	27.2	691	685	311	707	321	144	65	14.4	54
GN-45	3600	16.6	422	15.1	384	27.2	691	705	320	727	330	140	63	14.0	53

* Prefix number indicates cells per unit. Suffix number indicates total plates per cell.

** 0.25" must be added between units for spacing purposes when calculating total battery length.

¹ Nominal Amphour capacity at 8 hour rate to 1.75 volts per cell at 77° F

Specifications

Plate Dimensions	Height		Width		Thickness	
	in.	mm	in.	mm	in.	mm
Positive	17.3	439	12.7	323	0.31	7.9
Negative	17.3	439	12.7	323	0.21	5.3

- **Sediment Space:**
1.32 in./33.5 mm
- **Electrolyte over plates:**
3.4 in./86 mm
- **Container & cover:** Polycarbonate
- **Separators:**
Microporous rubber
- **Retainers:**
"Vitrex" - glass fiber
- **Post type:**
GN-13 and 15, single post, lead-plated copper (2 cell jar)
GN-17 through 23, double posts, lead-plate copper (2 cell jar)
GN-25 through 45, double posts, lead-plate copper (single cell jar)
- **Post seal type:**
Slide-Lock™
- **Plate suspension type:**
Positive - bridge hung
Negative - bottom supported
- **Electrolyte withdrawal tube:**
One per cell
- **Vent type:**
Flame arrestor, fused alumina
- **Float voltage:**
Acceptable range: 2.17-2.26 Vpc
- **Specific gravity:** 1.215
- **Bolt connectors:**
Stainless steel, standard English measure, hex head
- **Intercell connectors:**
Lead-plated copper
- **Nuclear qualifications:**
10CFR50 Appendix B, ANSI N45.2 and ASME NQA-1 1994 Compliant
GN-13 thru GN-23
IEEE-323-1974, IEEE-344-1987
IEEE-450-1995, IEEE-535-1979
GN-25 thru GN-45
IEEE-323-1974, IEEE-344-1987
IEEE-450-2002, IEEE-535-2006

Constant Current**

1.215 Specific Gravity electrolyte at 77°F (25°C), including cell connectors

Discharge rates in Amperes to 1.75 Vpc final

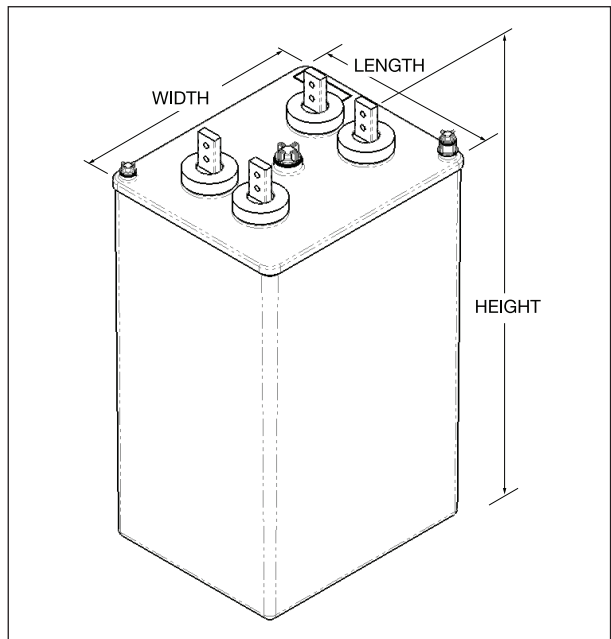
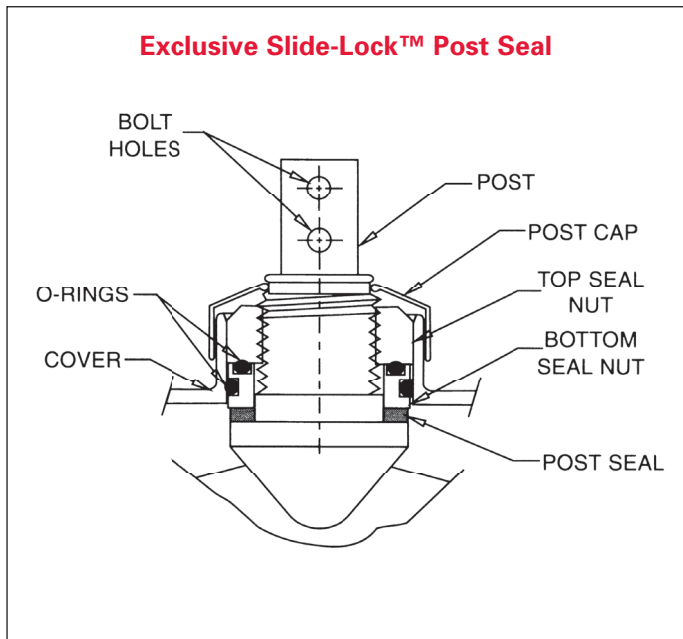
PowerSafe® GN Battery Type	Nominal Capacity (Ah)	Minutes			Hours									
		1	15	30	1	1.5	2	3	4	5	8	12	24	72
2GN-13	1140	1040	956	767	557	441	367	278	230	198	143	103	59.0	23.2
2GN-15	1260	1190	1075	869	625	491	406	307	252	215	157	113	62.8	23.6
2GN-17	1500	1522	1290	1039	747	590	492	374	305	264	187	134	77.8	31.6
2GN-19	1600	1683	1439	1150	818	641	532	404	333	284	199	142	80.8	31.6
2GN-21	1700	1841	1586	1261	889	693	572	433	360	305	213	151	83.6	31.5
2GN-23	1800	1993	1731	1370	958	743	611	461	385	325	225	159	85.8	31.0
GN-25	2200	2051	1835	1496	1104	882	737	563	459	391	275	197	116.3	48.1
GN-27	2320	2194	1973	1606	1181	940	784	596	487	414	290	206	119.5	48.2
GN-29	2430	2319	2108	1715	1256	996	829	628	513	437	304	213	121.1	47.4
GN-31	2520	2441	2242	1821	1329	1050	871	657	536	456	315	219	122.0	46.7
GN-33	2590	2553	2373	1926	1399	1101	911	684	557	471	324	223	122.0	45.5
GN-35	3080	2690	2524	2058	1529	1226	1028	789	644	548	385	275	161.4	66.1
GN-37	3200	2810	2636	2157	1604	1285	1076	823	673	573	400	285	164.0	65.0
GN-39	3320	2930	2752	2259	1681	1346	1126	859	702	598	415	293	166.2	64.7
GN-41	3430	3033	2851	2351	1749	1399	1168	888	727	619	429	300	168.2	64.5
GN-43	3520	3135	2954	2444	1820	1454	1212	918	751	638	440	306	169.1	63.9
GN-45	3600	3230	3056	2536	1889	1507	1254	948	774	656	450	311	168.9	62.5

Discharge rates in Amperes to 1.81 Vpc final

PowerSafe® GN Battery Type	Nominal Capacity (Ah)	Minutes			Hours									
		1	15	30	1	1.5	2	3	4	5	8	12	24	72
2GN-13	1140	768	767	645	492	400	338	263	220	191	139	101	58.6	23.2
2GN-15	1260	859	857	718	542	437	369	286	239	207	153	112	62.8	23.6
2GN-17	1500	1106	1041	863	651	529	449	347	289	252	181	131	77.2	31.6
2GN-19	1600	1216	1159	955	712	575	485	377	314	270	192	139	80.3	31.6
2GN-21	1700	1326	1277	1046	774	621	520	406	339	290	206	148	83.3	31.5
2GN-23	1800	1427	1394	1136	834	666	555	434	362	309	218	156	85.6	31.0
GN-25	2200	1493	1485	1250	961	787	671	522	432	371	264	192	114.8	48.0
GN-27	2320	1602	1593	1341	1027	838	711	552	456	391	277	200	117.5	47.9
GN-29	2430	1696	1693	1431	1092	886	749	580	480	411	289	206	118.4	46.8
GN-31	2520	1787	1785	1518	1154	932	784	606	500	427	298	211	118.8	45.9
GN-33	2590	1866	1864	1604	1215	976	818	628	517	440	304	213	118.1	44.5
GN-35	3080	1946	1944	1704	1320	1091	933	730	605	520	372	270	160.8	66.1
GN-37	3200	2042	2040	1784	1383	1140	974	761	631	542	385	279	162.8	65.0
GN-39	3320	2142	2140	1867	1447	1190	1016	793	657	564	398	286	164.5	64.7
GN-41	3430	2218	2215	1938	1504	1233	1050	819	679	582	409	292	165.9	64.3
GN-43	3520	2295	2293	2011	1562	1278	1086	845	700	599	418	296	166.3	63.5
GN-45	3600	2365	2362	2082	1618	1320	1120	869	719	614	425	299	165.4	61.9

** Ampere values listed represent 100% of the cells capacity. Initial capacity shall be a minimum of 90% of these values per IEEE450.

Note: All inter-cell, inter-tier, inter-step, end-to-end inter-rack, back-to-back inter-rack connectors, and terminal plates are included with every battery. Cross-aisle inter-rack connectors are not included.



Rint and Isc

PowerSafe® GN Battery Size	*Resistance	Isc
	Milliohms	Amps
2GN-13	0.213	9390
2GN-15	0.171	11700
2GN-17	0.155	12900
2GN-19	0.136	14710
2GN-21	0.120	16670
2GN-23	0.107	18690
GN-25	0.105	19050
GN-27	0.100	20000
GN-29	0.093	21510
GN-31	0.089	22470
GN-33	0.086	23260
GN-35	0.076	26320
GN-37	0.073	27400
GN-39	0.071	28170
GN-41	0.069	28990
GN-43	0.066	30300
GN-45	0.064	31250

* Resistance values are for reference only (not intended to represent an ohmic value or base line measurement)



www.enersys.com

EnerSys
2366 Bernville Road
Reading, PA 19605
USA
Tel: +1-610-208-1991
+1-800-538-3627
Fax: +1-610-372-8613

EnerSys Asia
152 Beach Road
Gateway East Building,
Level 11
189721 Singapore
Tel: +65 6508 1780

Distributed by:

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