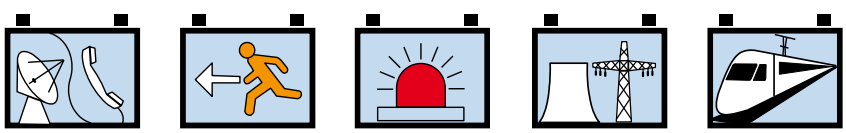
Guarantee

EverExceed®
power your applications

V4.0

NiCd Pocket Plate Range
EBH 10-500Ah

»Premium quality for uninterrupted communication«



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NiCd Pocket Plate Range

EverExceed®
power your applications

NiCd Pocket Plate Range
EBH 10-500Ah

The block battery - for dependability

The wide range of low, medium and high capacity types makes accurate selection easy, based on discharge time and end of discharge voltage. Robust construction and generous electrolyte reserve enable the battery to withstand wide temperature fluctuations in stationary cycling behaviour over its 20+ years' life.

Built with a future Nickel-cadmium plates are completely reliable, with no risk of thermal runaway or sudden death.

Generally operating between temperatures of - 40˚C to +60˚C(-4˚F to +140˚F), they can tolerate extremes of -50˚C to +70˚C (-58˚F to +158˚F) for short periods.

With only periodic checks, the block battery will provide up to 20+ years' completely faithful service.

Trouble-free long cycle life

The EverExceed nickel-cadmium block battery's unique electrochemistry enables it to regularly withstand any depth of discharge.

Following a deep discharge the block battery is designed to recharge very quickly and economically, using standard single or two-level charging equipment.

Be sure of a low overall cost

The Ni-Cd block battery is the most highly cost-efficient solution to stored power requirements.

- No downtime
- No replacement costs
- Minimal maintenance
- Ease of installation
- 20+ years' operating life

Easy storage and installation

Nickel-cadmium block batteries are quick and easy to install as original equipment and may be stored for many years in a discharged state under correct conditions.

On installation a simple bolted connector enables the battery to be rapidly commissioned.

Assured reliability

Ni-Cd is equally dependable in controlled city environments or harsh, unpredictable conditions in the world's most remote and unpopulated areas.

The Ni-Cd battery's block construction makes it highly resistant to electrical abuse and transport over rough terrain, precluding risk of subsequent failure.

Optimized for performance:

An electrolyte solution of potassium hydroxide and a small amount of lithium hydroxide acts only as an ion transfer medium, delivering optimum performance without causing base material degradation.

Good reserves and circulation of the electrolyte are achieved by a wide inter-plate space.

Injection moulded plastic grids both separate plate and insulate plate edges. For extremely low temperatures a special high density electrolyte is available.

The block battery is fitted with a specially designed flame arresting flip top vent and does not produce corrosive vapours. The tough polypropylene casing ensures the battery's structural integrity throughout its long life.

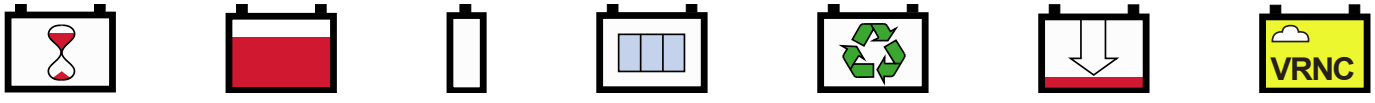
Supports these Single Cell ranges with:

Quality approved manufacture to ISO 9001 and the TUV certification.

Single Cell batteries have been developed in line with the safety requirements of EN-50272-2 and components used (such as insulated cable connectors and end lug covers) are defined to ensure high protection against electric shocks (Ip2 level).

Full recycling service to protect the environment.

ISO 9001 14001 CE TÜVRheinland® Cd



EverExceed®
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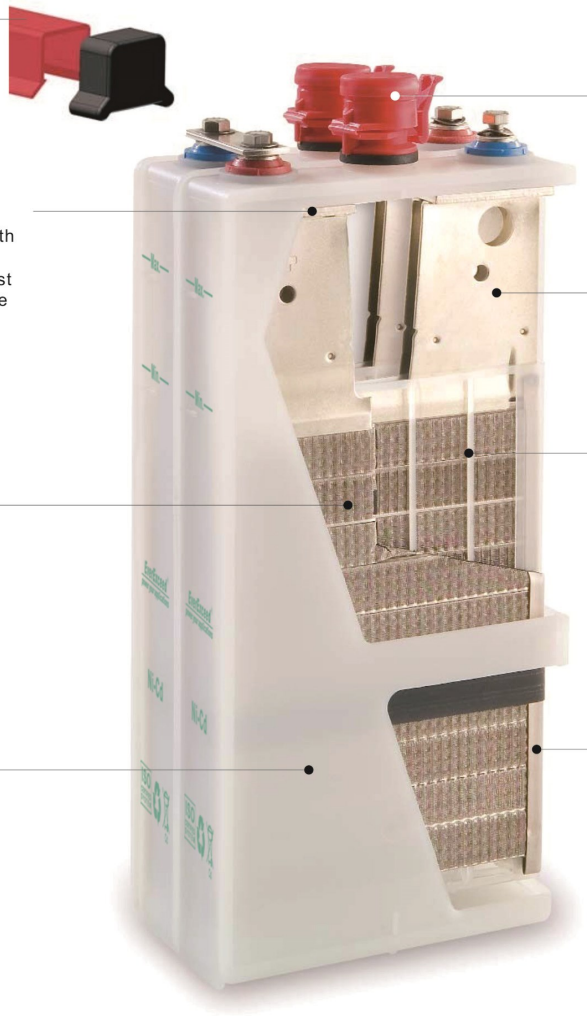
NiCd Pocket Plate Range



The EverExceed Single Cell ranges fully comply and exceed the IEC 60623 standard requirements.

Application

EBH Series nickel cadmium batteries are designed for general industrial applications where absolute reliability is a necessity. Service-proven pocket- plate technology ensures long uninterrupted battery life without the risk of sudden loss of power.

EBH Series batteries are suitable for high discharge rate applications (30 minutes and below) such as switchgear tripping, diesel engine starting, UPS, etc.

Performance Data

High tolerance to electrical abuses such as overcharge and over discharge.

High tolerance to rough handling and mechanical abuse due to strong components and robust construction.

Trouble-free long cycle life .

No risk of sudden death due to the chemistry and the cell structure.

Wide operating temperature: -40°C to 60°C.

Generous electrolyte reserve for long maintenance intervals.

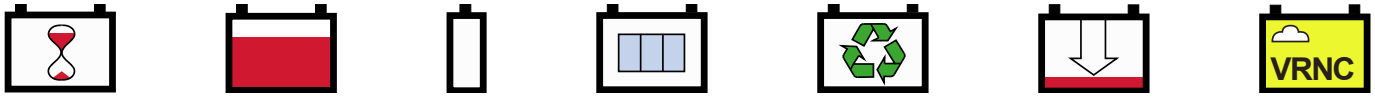
Clear (MBS) or translucent (PP) plastic cell case for easy electrolyte level inspection.

Plastic grid spacers eliminate separator deterioration problem.

Custom cell dimensions available.

20+ years service life in stationary applications.

Conforms to IEC60623.



Battery Charging

It is recommended to use Constant Voltage method of charging for Nickel Cadmium Batteries, usually with current limitation to C/5 or C/10. Charging voltages must be regularly checked. To optimize the battery performance, it is necessary to ensure that the voltage is kept within the following limits:

Batteries can be charged in:

- **constant voltage mode with load connected**

or

- **constant current or declining current mode when load is isolated.**

High rate or over charge will not damage the battery.

Minimum float charging current: 2 mA per Ah.

- **Constant voltage mode:**

For continuous parallel operation:

- Float voltage: 1.40 - 1.45 V/cell for EBL, EBM & EBH
- Boost Voltage:

EBL : 1.60 - 1.70 V/cell
EBM : 1.60 - 1.65 V/cell
EBH : 1.60 - 1.65 V/cell

A higher voltage will reduce the charge duration and increase the efficiency of recharging but may increase water consumption.

Single stage charging (without boost):

EBL: 1.47 - 1.50 V/cell
EBM: 1.46 - 1.49 V/cell
EBH: 1.45 - 1.48 V/cell

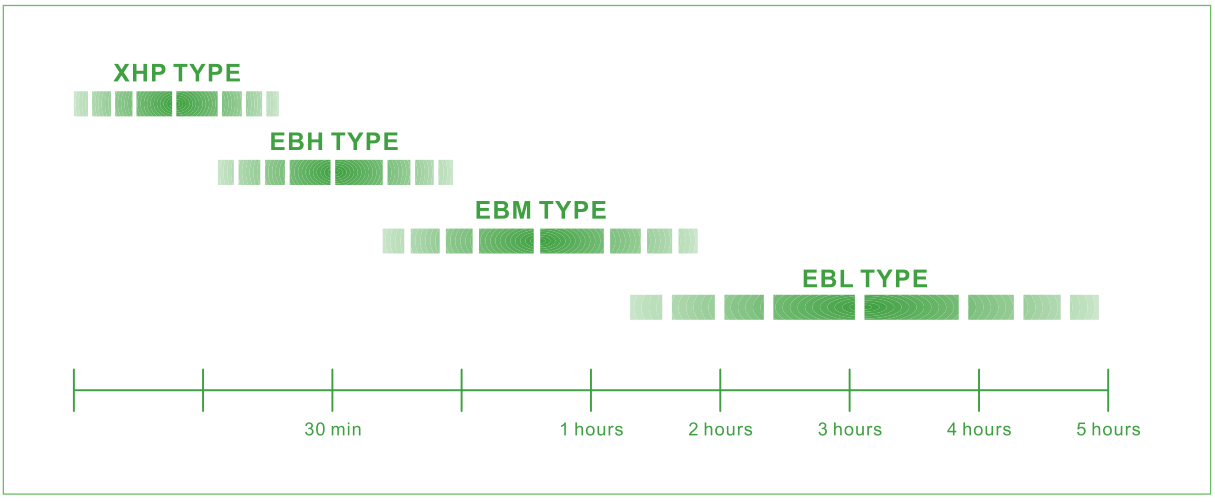
For starting application:

- Recommended charging voltage. 1.50 - 1.55 V/cell.

- **Constant current mode:**
  - Normal charging: 0.2 C5 A for 8 hours
  - Recommended for quick charging: 0.4 C5 A for 2.5 hours followed by 0.2 C5 A for 2.5 hours

Recommended Type Selection

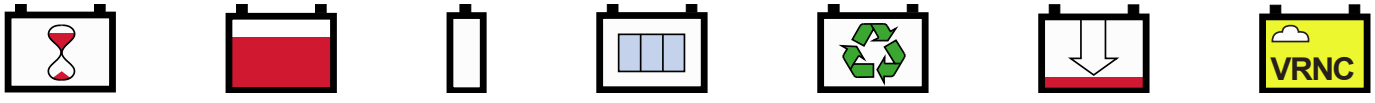
According to backup time required by application:



Initial Charging

The whole charge should preferably be carried out at constant current. The charging time is inversely proportional to the current which is set by the current limit of the charging equipment.

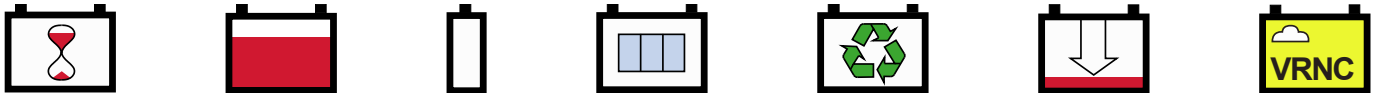
Recommended rates for the first charging: 0.2 C5A for 10 hours 0.1 C5A for 20 hours



NiCd Pocket Plate EBH Range Electrical Specifications & Dimensions

Cell Type	Nominal Voltage (V)	Capacity (C5 Ah)	Dimensions (mm/inch)						Weight (kg/lb.)				Terminal	Cell Case Material
			Length		Width		Height		Without Electrolyte		With Electrolyte			
EBH10	1.2	10	55	2.2	134	5.3	270	10.6	1.2	2.6	2.2	4.8	M10	PP
EBH20	1.2	20	55	2.2	134	5.3	270	10.6	1.7	3.7	2.6	5.7	M10	PP
EBH30	1.2	30	70	2.8	140	5.5	295	11.6	2.8	6.2	4.3	9.5	M16	PP
EBH40	1.2	40	80	3.1	140	5.5	365	14.4	4.2	9.3	6	13.2	M16	PP
EBH50	1.2	50	80	3.1	140	5.5	365	14.4	4.5	9.9	6.2	13.7	M16	PP
EBH60	1.2	60	80	3.1	140	5.5	365	14.4	4.8	10.6	6.5	14.3	M16	PP
EBH70	1.2	70	105	4.1	165	6.5	345	13.6	6.8	15.0	9.2	20.3	M20	PP
EBH80	1.2	80	105	4.1	165	6.5	345	13.6	7.2	15.9	9.6	21.2	M20	PP
EBH90	1.2	90	105	4.1	165	6.5	345	13.6	7.8	17.2	10	22.0	M20	PP
EBH100	1.2	100	165	6.5	167	6.6	345	13.6	9.2	20.3	13.5	29.8	M20	PP
EBH120	1.2	120	165	6.5	167	6.6	345	13.6	9.8	21.6	14	30.9	M20	PP
EBH150	1.2	150	165	6.5	167	6.6	345	13.6	11	24.2	16	35.3	M20	PP
EBH200	1.2	200	170	6.7	285	11.2	350	13.8	18.5	40.8	26	57.3	2 x M20	ABS
EBH250	1.2	250	170	6.7	285	11.2	350	13.8	20	44.1	27.5	60.6	2 x M20	ABS
EBH300	1.2	300	175	6.9	290	11.4	500	19.7	25	55.1	36	79.3	2 x M20	ABS
EBH350	1.2	350	175	6.9	290	11.4	500	19.7	26	57.3	37	81.5	2 x M20	ABS
EBH400	1.2	400	186	7.3	398	15.7	565	22.2	41	90.4	55	121	3 x M20	ABS
EBH500	1.2	500	187	7.4	399	15.7	566	22.3	43	94.8	57	126	3 x M20	ABS

EverExceed EBH batteries fulfil all requirements specified by IEC publication 60623.
Transparent case optional.



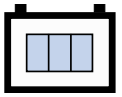
Discharge Data Table

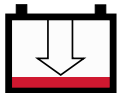
Discharge performance data after fully charged by constant current according to IEC60623

Available amperes at +20°C ±5°C(+68°F ±9°F) Final voltage: 1.14V/cell

Cell Type	Capacity (C5 Ah)	Discharge Time in Hours							Discharge Time in minutes							Time in Seconds		
		10	8	5	3	2	1.5	1	45	30	20	15	10	5	1	30	5	1
EBH10	10	1.00	1.18	1.87	3.05	4.45	5.83	8.16	9.14	12.0	14.7	16.8	19.7	25.2	39.6	46.2	57.3	68.8
EBH20	20	2.01	2.36	3.74	6.12	8.95	11.7	16.5	18.5	24.7	30.2	34.4	37.0	51.1	80.3	93.0	118	124
EBH30	30	3.01	3.54	5.61	9.18	13.4	17.5	24.8	27.8	37.0	45.3	51.6	56.5	76.6	120	140	177	187
EBH40	40	4.02	4.72	7.48	12.2	17.9	23.3	33.1	37.0	49.4	60.4	68.8	76.0	102	161	186	237	249
EBH50	50	5.02	5.91	9.35	15.3	22.4	29.2	41.3	46.3	61.7	75.5	86.0	95.5	128	201	232	296	311
EBH60	60	6.02	7.09	11.2	18.4	26.8	35.1	49.6	55.5	74.1	90.6	103	115	153	241	279	355	373
EBH70	70	7.03	8.27	13.1	21.4	31.4	40.9	57.8	64.8	86.4	106	120	135	179	281	325	414	435
EBH80	80	8.03	9.45	14.9	24.4	35.8	46.8	66.1	74.0	98.7	121	138	154	204	321	372	473	498
EBH90	90	9.04	10.6	16.8	27.6	40.3	52.6	74.4	83.3	112	136	155	172	230	361	418	533	559
EBH100	100	10.1	11.9	18.7	30.6	44.7	58.5	82.6	92.6	124	151	172	191	255	401	465	591	621
EBH120	120	12.0	14.2	22.4	36.8	53.7	70.1	99.2	111	148	182	206	230	307	482	558	710	745
EBH150	150	15.1	17.8	28.0	45.9	67.2	87.7	124	139	185	226	258	306	383	603	698	888	932
EBH200	200	20.1	23.6	37.4	61.2	89.5	117	165	185	247	302	344	382	511	804	930	1183	1243
EBH250	250	25.1	29.5	46.7	76.5	111	146	207	232	309	377	430	517	638	1005	1162	1479	1553
EBH300	300	30.1	35.5	56.1	91.8	134	175	248	277	371	453	516	573	766	1206	1395	1774	1864
EBH350	350	35.2	41.4	65.4	107	156	204	289	324	432	529	602	688	894	1406	1628	2071	2175
EBH400	400	40.2	47.3	74.7	122	179	234	330	370	494	604	688	766	1022	1607	1860	2366	2486
EBH500	500	50.2	59.0	93.4	153	224	292	413	463	617	755	860	957	1278	2010	2325	2958	3107



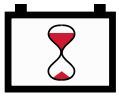


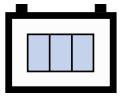

Discharge Data Table

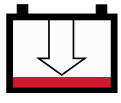
Discharge performance data after fully charged by constant current according to IEC60623

Available amperes at +20°C ±5°C(+68°F ±9°F) Final voltage: 1.10V/cell

Cell Type	Capacity (C5 Ah)	Discharge Time in Hours							Discharge Time in minutes							Time in Seconds		
		10	8	5	3	2	1.5	1	45	30	20	15	10	5	1	30	5	1
EBH10	10	1.01	1.22	1.93	3.18	4.67	6.11	8.69	10.4	14.2	17.4	19.8	23.5	29.7	46.0	53.6	69.1	72.7
EBH20	20	2.04	2.45	3.88	6.37	9.36	12.2	17.5	21.1	29.2	35.8	40.8	48.2	60.7	93.8	108	136	151
EBH30	30	3.06	3.67	5.82	9.55	14.0	18.4	26.3	31.6	43.9	53.7	61.2	72.3	91.0	141	163	203	228
EBH40	40	4.07	4.89	7.76	12.7	18.7	24.4	35.1	42.1	58.5	71.6	81.6	96.4	121	188	217	271	304
EBH50	50	5.09	6.11	9.70	15.9	23.4	30.6	43.9	52.7	73.2	89.5	102	121	152	234	271	339	379
EBH60	60	6.11	7.33	11.6	19.1	28.0	36.8	52.7	63.2	87.8	107	122	144	182	282	326	407	456
EBH70	70	7.13	8.56	13.5	22.2	32.7	42.8	61.5	73.8	102	125	142	169	212	328	379	474	532
EBH80	80	8.15	9.78	15.5	25.5	37.4	49.0	70.3	84.3	117	143	164	192	243	375	434	542	607
EBH90	90	9.12	10.9	17.5	28.6	42.0	55.1	79.1	94.9	132	161	184	217	273	422	488	610	683
EBH100	100	10.2	12.3	19.4	31.8	46.8	61.2	87.9	105	146	179	204	240	303	469	542	677	760
EBH120	120	12.2	14.7	23.3	38.2	56.1	73.4	106	127	176	215	245	289	364	562	650	813	911
EBH150	150	15.3	18.3	29.0	47.8	70.2	91.7	132	159	220	268	306	362	455	704	813	1016	1139
EBH200	200	20.4	24.4	38.8	63.6	93.5	123	176	211	293	358	408	482	606	938	1085	1354	1518
EBH250	250	25.5	30.6	48.5	79.6	117	153	220	264	366	447	511	602	758	1173	1356	1693	1898
EBH300	300	30.6	36.7	58.1	95.4	140	183	264	317	439	537	612	722	910	1407	1626	2031	2278
EBH350	350	35.6	42.8	67.9	111	163	214	307	369	513	626	715	842	1061	1641	1897	2371	2657
EBH400	400	40.8	48.9	77.6	127	187	245	352	422	586	715	816	963	1213	1875	2168	2709	3036
EBH500	500	50.9	61.1	97.0	159	233	306	439	527	732	895	1021	1204	1515	2344	2710	3386	3796





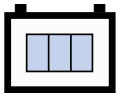

Discharge Data Table

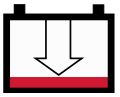
Discharge performance data after fully charged by constant current according to IEC60623

Available amperes at +20°C ±5°C(+68°F ±9°F) Final voltage: 1.05V/cell

Cell Type	Capacity (C5 Ah)	Discharge Time in Hours							Discharge Time in minutes							Time in Seconds		
		10	8	5	3	2	1.5	1	45	30	20	15	10	5	1	30	5	1
EBH10	10	1.03	1.25	2.00	3.27	4.83	6.4	9.3	11.0	16.5	20.8	23.6	27.9	35.3	54.4	63.9	78.8	85.9
EBH20	20	2.08	2.51	3.98	6.55	9.67	12.8	18.6	22.1	33.3	43.1	48.7	57.7	72.5	112	127	145	171
EBH30	30	3.12	3.76	5.97	9.82	14.5	19.2	27.9	33.2	49.9	64.6	73.1	86.5	109	167	191	221	257
EBH40	40	4.16	5.01	7.96	13.1	19.4	25.6	37.1	44.3	66.5	86.1	97.5	115	145	223	255	297	344
EBH50	50	5.19	6.27	9.95	16.4	24.2	32.1	46.4	55.3	83.2	107	122	145	181	279	317	373	430
EBH60	60	6.23	7.52	11.9	19.6	29.1	38.4	56.0	66.4	99.6	129	146	173	218	334	381	450	515
EBH70	70	7.27	8.77	13.9	23.0	33.9	44.5	65.2	77.5	117	151	171	202	254	391	445	526	601
EBH80	80	8.31	10.0	16.0	26.2	38.7	51.6	74.4	88.6	133	172	195	230	290	446	509	602	687
EBH90	90	9.31	11.3	17.9	29.4	43.6	57.4	83.5	100	150	194	219	260	327	501	572	671	772
EBH100	100	10.4	12.6	19.9	32.8	48.3	64.5	92.6	111	167	215	244	288	362	558	636	747	858
EBH120	120	12.5	15.0	23.8	39.2	58.0	76.8	111	133	199	258	293	346	435	669	763	899	1030
EBH150	150	15.6	18.8	29.8	49.1	72.6	96.5	139	167	249	323	365	433	544	836	954	1196	1288
EBH200	200	20.8	25.0	39.8	65.4	96.8	128	185	222	333	430	487	577	725	1115	1272	1494	1716
EBH250	250	26.0	31.3	49.7	81.8	121	161	232	277	416	538	609	721	906	1394	1590	2020	2147
EBH300	300	31.2	37.6	59.7	98.2	145	193	279	333	500	645	731	865	1088	1673	1908	2241	2576
EBH350	350	36.3	43.9	69.6	114.2	169	225	325	387	583	753	853	1009	1269	1952	2225	2690	3005
EBH400	400	41.6	50.1	79.6	130.6	193	256	372	443	665	861	975	1153	1450	2231	2543	2995	3434
EBH500	500	51.9	62.6	99.5	163.5	242	321	464	554	832	1076	1218	1442	1813	2789	3179	3742	4292



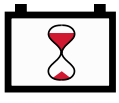


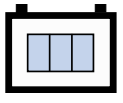

Discharge Data Table

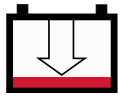
Discharge performance data after fully charged by constant current according to IEC60623

Available amperes at +20°C ±5°C(+68°F ±9°F) Final voltage: 1.00V/cell

Cell Type	Capacity (C5 Ah)	Discharge Time in Hours							Discharge Time in minutes							Time in Seconds		
		10	8	5	3	2	1.5	1	45	30	20	15	10	5	1	30	5	1
EBH10	10	1.05	1.27	2.02	3.32	5.0	6.55	9.59	11.2	17.3	23.3	27.2	32.1	41.1	64.2	72.4	91.7	98.4
EBH20	20	2.11	2.53	4.04	6.64	10.0	13.1	19.2	22.5	35.1	47.8	56.1	66.6	84.8	128	146	184	203
EBH30	30	3.17	3.79	6.06	10.0	15.0	19.6	28.8	33.8	52.7	71.7	84.1	99.7	127	192	218	275	305
EBH40	40	4.22	5.06	8.08	13.3	19.9	26.3	38.4	45.0	70.2	95.6	112	133	170	255	291	367	406
EBH50	50	5.27	6.32	10.1	16.6	24.9	32.8	48.0	56.3	87.7	120	140	166	212	319	364	458	508
EBH60	60	6.33	7.58	12.1	19.9	29.9	39.3	57.6	67.9	106	144	168	200	255	383	437	550	610
EBH70	70	7.38	8.84	14.1	23.3	34.9	45.9	67.1	79.0	123	167	196	233	297	446	510	641	712
EBH80	80	8.44	10.1	16.2	26.6	39.9	52.5	76.6	90.1	140	191	224	266	339	511	582	734	813
EBH90	90	9.48	11.4	18.2	30.0	44.8	59.0	86.3	101	158	215	252	299	381	574	655	825	915
EBH100	100	10.6	12.7	20.2	33.2	49.8	65.6	95.9	112	176	239	281	332	424	638	728	917	1017
EBH120	120	12.6	15.2	24.2	39.9	59.7	78.7	115	135	211	287	336	399	509	766	874	1101	1219
EBH150	150	15.8	18.9	30.3	49.9	74.6	98.4	144	169	263	358	420	499	636	957	1092	1375	1525
EBH200	200	21.1	25.3	40.4	66.5	99.5	131	192	225	351	478	560	665	848	1277	1457	1834	2033
EBH250	250	26.4	31.5	50.5	83.1	124	164	240	281	439	598	701	832	1060	1595	1821	2293	2541
EBH300	300	31.7	37.9	60.6	99.7	149	197	287	338	527	717	841	997	1272	1914	2185	2752	3049
EBH350	350	36.9	44.2	70.7	116	174	230	336	393	615	836	980	1164	1484	2233	2549	3210	3557
EBH400	400	42.1	50.5	80.8	133	199	263	383	450	702	956	1121	1330	1696	2553	2913	3669	4065
EBH500	500	52.7	63.2	101	167	249	328	479	563	878	1195	1401	1662	2121	3191	3641	4586	5081





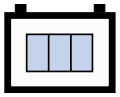

Discharge Data Table

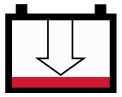
Discharge performance data after fully charged by constant current according to IEC60623

Available amperes at +20°C ±5°C(+68°F ±9°F) Final voltage: 0.85V/cell

Cell Type	Capacity (C5 Ah)	Discharge Time in Seconds					
		90	60	30	10	5	1
EBH10	10	94	102	116	131	141	153
EBH20	20	189	205	228	261	284	308
EBH30	30	284	308	343	393	425	461
EBH40	40	376	409	457	524	566	615
EBH50	50	471	512	572	655	708	768
EBH60	60	565	614	685	785	850	921
EBH70	70	660	715	800	916	991	1076
EBH80	80	754	817	913	1047	1133	1229
EBH90	90	847	920	1028	1178	1275	1383
EBH100	100	941	1022	1142	1309	1416	1536
EBH120	120	1130	1226	1362	1571	1699	1844
EBH150	150	1414	1534	1713	1964	2124	2305
EBH200	200	1897	2004	2285	2619	2831	3073
EBH250	250	2355	2556	2856	3272	3540	3841
EBH300	300	2825	3066	3427	3927	4248	4608
EBH350	350	3297	3577	3975	4582	4957	5376
EBH400	400	3794	4088	4569	5236	5664	6145
EBH500	500	4708	5110	5710	6546	7080	7681



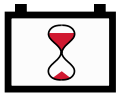



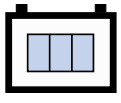


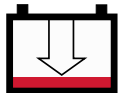

Discharge Data Table

Discharge performance data after fully charged by constant current according to IEC60623

Cell Type	Capacity (C5 Ah)	Discharge Time in Seconds					
		90	60	30	10	5	1
EBH10	10	94	103	110	133	146	158
EBH20	20	187	206	221	265	291	316
EBH30	30	281	310	331	398	437	474
EBH40	40	374	413	441	530	583	631
EBH50	50	469	516	552	663	729	789
EBH60	60	562	619	662	795	874	947
EBH70	70	656	723	772	928	1020	1105
EBH80	80	749	826	882	1061	1166	1263
EBH90	90	842	929	993	1193	1311	1421
EBH100	100	936	1032	1103	1326	1457	1579
EBH120	120	1123	1239	1324	1591	1749	1894
EBH150	150	1405	1548	1655	1989	2186	2368
EBH200	200	1872	2064	2206	2651	2915	3157
EBH250	250	2341	2581	2758	3314	3643	3947
EBH300	300	2808	3097	3309	3977	4372	4736
EBH350	350	3277	3613	3861	4640	5100	5526
EBH400	400	3744	4129	4412	5303	5829	6315
EBH500	500	4681	5161	5515	6629	7286	7894






Calculation Methods

Information required for battery capacity calculation

The following information needed for a precise battery capacity calculation:

Nominal voltage of the system	Load current required	Backup time required
Maximum voltage (for charging)	Minimum voltage	Temperature range
Battery layout and available space	Physical condition	

Float Voltage Operation

In these conditions the float voltage, being the voltage at which the general load circuit will operate, then a decision will have to be reached on the cell float voltage needed to maintain the battery in the required condition.

$$\text{Number of cells required} = \frac{\text{Circuit voltage}}{\text{Cell Float voltage}} \qquad \text{Minimum cell voltage} = \frac{\text{Minimum D.C. voltage}}{\text{Number of cells}}$$

The most commonly used float voltages are 1.40-1.48 voltage per cell, but the exact figure has to be related carefully to circumstances.

For Example

An EverExceed Nickel Cadmium battery is required to maintain an inverter load of 50KVA at 0.8 power factor for a backup time of 30 minutes, at 20~25°C temperature. The DC voltage to the inverter operates within the limit of 265 volts with the battery on float charge to a minimum of 202 volts at end of back up time. The inverter has an 85% efficiency rate.

-Number of Cells (at recommended float of 1.44VPC) = 265/1.44≈184cells

-Minimum Cell Voltage = 202/184≈1.10 volts per cell

-Maximum Battery Current

$$= \frac{\text{Inverter load in KVA x Power factor}}{\text{Min. cell voltage x Number of cells x Inverter efficiency}}$$

$$= \frac{50\text{KVA x } 0.80}{1.10 \text{ x } 184 \text{ x } 0.85} = 232.5 \text{ Amps}$$

We shall choose the battery with capacity equal or just above 232.5Amps.

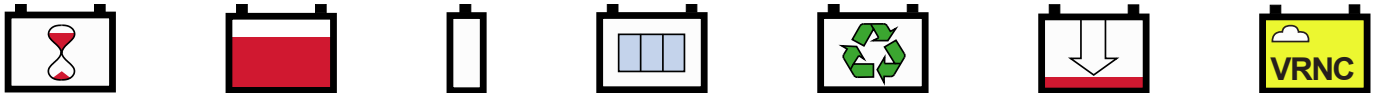
To meet the 30 minutes backup time requirement, we determine to choose the battery size from EBH Range.

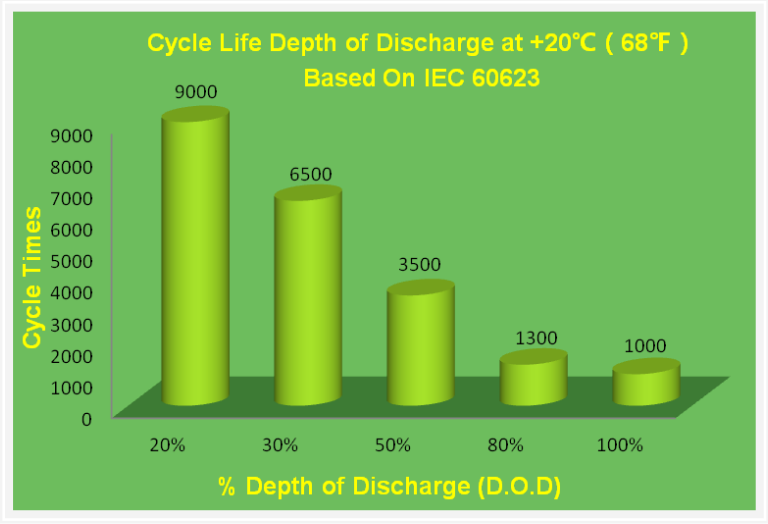
From our catalogue data, the cell type is EBH300.

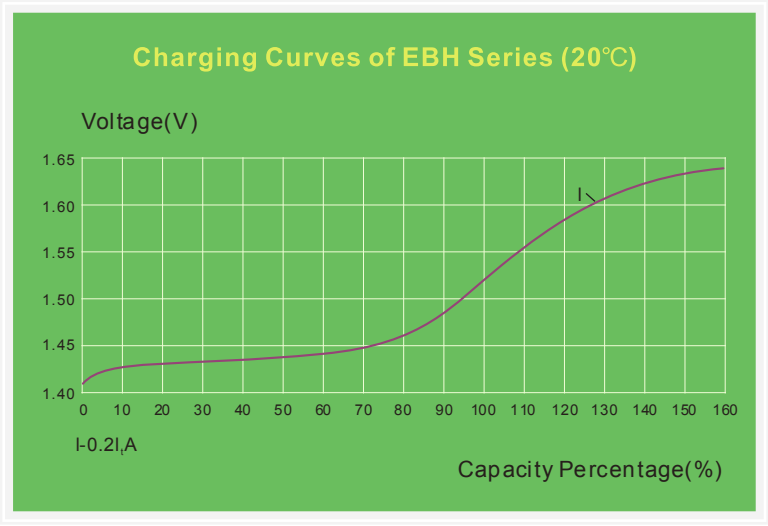
Battery shall comprise 184 cells of EverExceed Nickel Cadmium type EBH300.

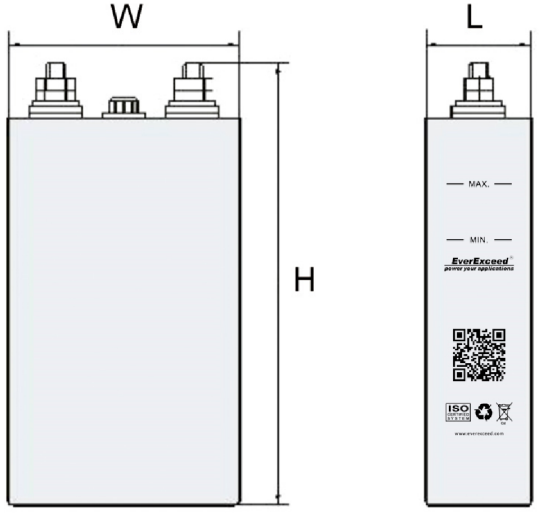
System Voltage	Number of Cells	Spread Range Number of Cells
24	20	18 ~ 21
36	30	27 ~ 31
48	40	36 ~ 41
110	92	88 ~ 93
220	184	180 ~ 186

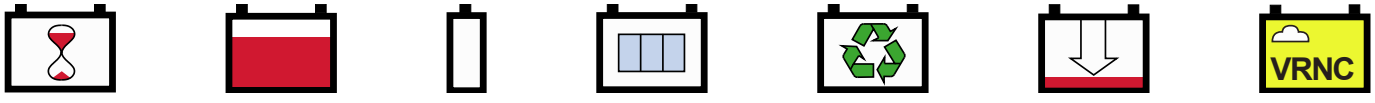
The number of cells in a battery may be determined by simply dividing the nominal voltage of the system by the nominal voltage of a cell (1.2 Volts).

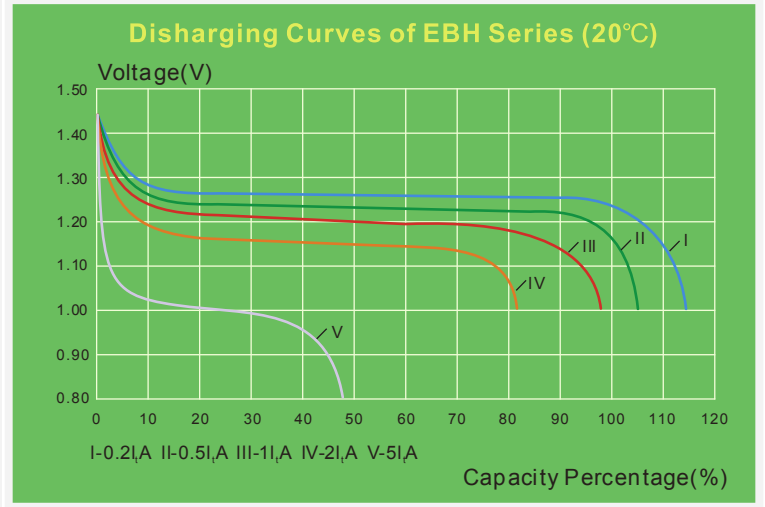


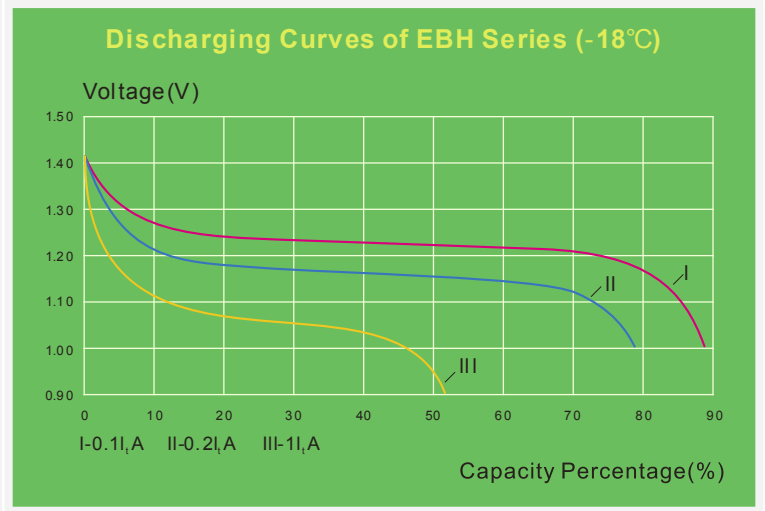


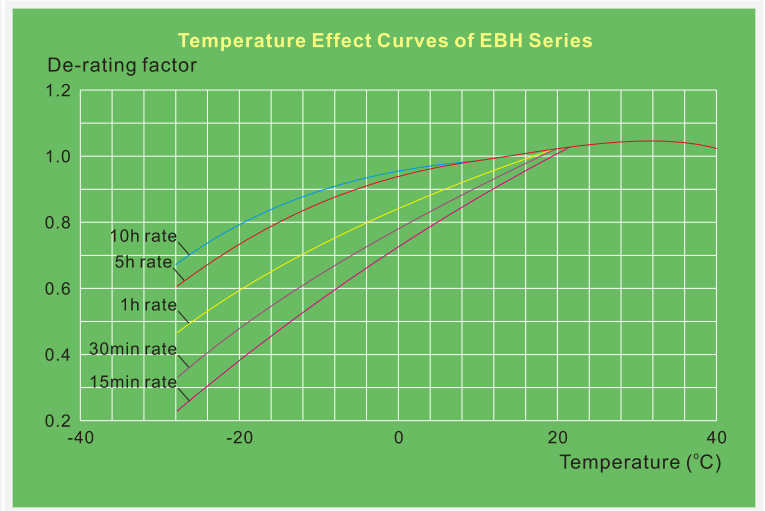












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