
*SINGLE CELL
RANGE SUMMARY*

VARTA Vb batteries are vented lead-acid batteries designed for industrial applications in power supply with high safety requirements. These single cells are qualified for both short duration discharges with high current and long duration discharges with low current. The main areas of application are DC power supply systems in power stations and substations, UPS systems, industrial systems and emergency power supply systems. They can also be used for engine starting and for energy storage in solar power systems.

The special rod plate design of **VARTA Vb** batteries offers a high energy density and a very long life time in one unique design. This gives better performance and can minimise the use of valuable floor space. A rigid earthquake-proof cell allied with the unique **VARTA Vb** safety pole terminals makes this a superior battery design. A very long topping up interval minimises service requirements to complete the package.

Features & Benefits

- Capacity range: 254Ah – 2100Ah
- Single cells, 2V nominal voltage
- Water topping up interval about 5 years in standby operation mode at 20°C
- Up to 20 year service life due to proven **VARTA** rod plate technology and **VARTA** safety pole
- High cycling capability in energy storage systems
- Rigid cell design, earthquake-proof



Construction

- Positive Electrode - rod plate with low antimony lead alloy. Special hanging plate design allows for growth giving superior aging behaviour
- Negative Electrode - grid plate with lead alloy
- Separation - micro-porous separator, combined with fleece pocket for the positive electrode
- Casing Material - styrene-acrylonitrile (SAN), impact resistant, transparent, with electrolyte level indication i.e. Max / Min
- Electrolyte - dilute sulphuric acid, density = 1.24 kg/l

- Terminal Design - leak-proof VARTA safety pole with solid brass insert and M10 stainless steel bolt
- Connectors - solid copper connector (20mm x 5-10mm) insulated, bolted type, voltage measurement possible
- Vent Plugs - flame arrestor VARTA safety vent plugs, optional: ceramic funnel plugs

- For use in earthquake zones special approved racks are available
- If accommodated in battery rooms or cabinets the safety provisions specified in EN 50272-2 must be applied
- Recommended Range of Operation 0°C to 55°C (preferred value 20°)

Installation & Operation

- Float charge voltage: 2.23 Vpc at 20°C
- Suitable for all types of installation
- Small floor area required for installation due to high energy density

Standards

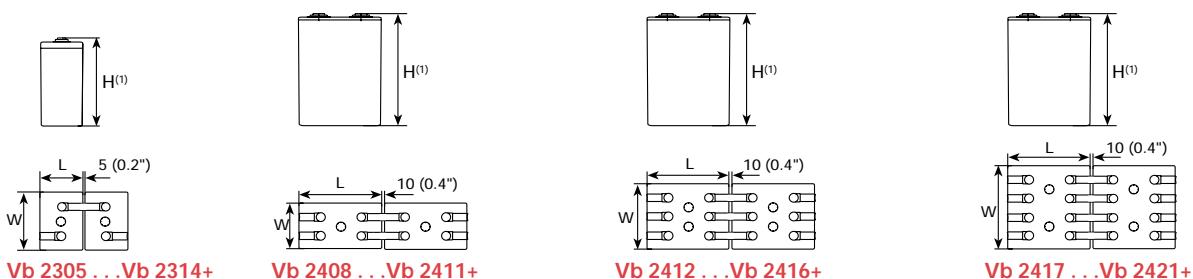
- Conforms to IEC 60896-1
- Manufactured in EnerSys production facilities that are certified to ISO 9001:2000 (Quality) and ISO 14001:1996 (Environment)

General Specifications

Type	Nominal Voltage (V)	Nominal Capacity (Ah)		Nominal Dimensions						Typical Weight		Electrolyte Volume		Short Circuit Current (A)	Internal Resistance (mΩ)
		10 hr rate to 1.80Vpc @ 20°C	8 hr rate to 1.75Vpc @ 77°F	Length mm	Length in	Width mm	Width in	Height (1) mm	Height (1) in	kg	lbs	S.G. = 1.240 litres	US gallon		
Vb 2305	2	254	254	122	4.80	266	10.5	440	17.3	30.1	66.4	7.0	1.8	4195	0.50
Vb 2306	2	305	305	122	4.80	266	10.5	440	17.3	32.2	71.0	6.7	1.8	5034	0.41
Vb 2307+	2	356	356	122	4.80	266	10.5	440	17.3	34.3	75.6	6.5	1.7	5873	0.35
Vb 2308	2	406	406	188	7.40	266	10.5	440	17.3	45.9	101	11.7	3.09	6712	0.31
Vb 2309	2	457	457	188	7.40	266	10.5	440	17.3	48.0	106	11.5	3.04	7551	0.28
Vb 2310+	2	508	508	188	7.40	266	10.5	440	17.3	50.4	111	11.2	2.96	8390	0.25
Vb 2311+	2	559	559	188	7.40	266	10.5	440	17.3	52.9	117	10.8	2.85	9229	0.23
Vb 2312	2	610	610	233	9.17	266	10.5	440	17.3	61.0	134	14.4	3.80	10068	0.21
Vb 2313+	2	660	660	233	9.17	266	10.5	440	17.3	63.3	140	14.1	3.72	10907	0.19
Vb 2314+	2	711	711	233	9.17	266	10.5	440	17.3	65.4	144	13.8	3.65	11746	0.18
Vb 2408	2	800	800	374	14.7	213	8.39	550	21.7	98.1	216	23.4	6.18	10085	0.21
Vb 2409	2	900	900	374	14.7	213	8.39	550	21.7	102	226	22.7	6.00	11346	0.18
Vb 2410	2	1000	1000	374	14.7	213	8.39	550	21.7	108	237	22.0	5.81	12606	0.16
Vb 2411+	2	1100	1100	374	14.7	213	8.39	550	21.7	112	247	21.4	5.65	13867	0.15
Vb 2412	2	1200	1200	374	14.7	298	11.7	550	21.7	141	310	33.1	8.74	15128	0.14
Vb 2413	2	1300	1300	374	14.7	298	11.7	550	21.7	146	321	32.4	8.56	16388	0.13
Vb 2414	2	1400	1400	374	14.7	298	11.7	550	21.7	150	331	31.7	8.37	17649	0.12
Vb 2415	2	1500	1500	374	14.7	298	11.7	550	21.7	155	342	31.0	8.19	18909	0.11
Vb 2416+	2	1600	1600	374	14.7	298	11.7	550	21.7	160	353	30.3	8.00	20170	0.10
Vb 2417	2	1700	1700	374	14.7	383	15.1	550	21.7	190	418	43.1	11.4	21431	0.10
Vb 2418	2	1800	1800	374	14.7	383	15.1	550	21.7	195	429	42.3	11.2	22691	0.09
Vb 2419	2	1900	1900	374	14.7	383	15.1	550	21.7	199	439	41.8	11.0	23952	0.09
Vb 2420	2	2000	2000	374	14.7	383	15.1	550	21.7	204	451	41.1	10.9	25213	0.08
Vb 2421+	2	2100	2100	374	14.7	383	15.1	550	21.7	209	461	40.4	10.7	26473	0.08

The electrical values shown in the table relate to loadings from a fully charged condition at ambient temperature of 20°C (unless otherwise specified).

(1) Height includes connector.



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