



Battery Range Summary

PowerSafe® 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 PowerSafe 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 PowerSafe Vb safety pole terminals makes this a superior battery design. A very long topping up interval minimises service requirements to complete the package.



Features and Benefits

- Capacity range: 275Ah – 2400Ah
- Single cells, 2V nominal voltage
- 25 year design life in standby applications (20°C) due to proven rod plate technology and safety pole
- Water topping up interval about 5 years in standby operation mode at 20°C
- 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 - microporous 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 safety pole with solid brass insert and M10 stainless steel bolt

- Connectors - solid copper connector (30mm x 5-10mm) insulated, bolted type, voltage measurement possible
- Vent Plugs - flame arrestor safety vent plugs as standard, ceramic funnel plugs available as option

Installation & Operation

- Float charge voltage: 2.23Vpc at 20°C
- Suitable for all types of installation
- Small floor area required for installation due to high energy density
- 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, IEC 62485-2 and national regulations must be applied
- Recommended range of operation: +10°C to +30°C (maximum operating range: -10°C to +45°C)

Standards

- Conforms to IEC 60896-11
- The management systems governing the manufacture of PowerSafe® Vb single cells are ISO 9001:2008 and ISO 14001:2004 certified

General Specifications

Cell Type	Nominal Voltage (V)	Nominal Capacity (Ah)		Nominal Dimensions (mm)			Typical Weight (kg)	Electrolyte Volume S.G. = 1.240 (Litres)	Short Circuit Current (A)	Internal Resistance (mΩ)
		10 hr rate to 1.80Vpc @ 20°C	8 hr rate to 1.75Vpc @ 77°F	Length	Width	Height*				
Vb 2305	2	275	275	122	266	440	30.1	7.0	4195	0.50
Vb 2306	2	330	330	122	266	440	32.2	6.7	5034	0.41
Vb 2307+	2	385	385	122	266	440	34.3	6.5	5873	0.35
Vb 2308	2	440	440	188	266	440	45.9	11.7	6712	0.31
Vb 2309	2	495	495	188	266	440	48.0	11.5	7551	0.28
Vb 2310+	2	550	550	188	266	440	50.4	11.2	8390	0.25
Vb 2311+	2	605	605	188	266	440	52.9	10.8	9229	0.23
Vb 2312	2	660	660	233	266	440	61.0	14.4	10068	0.21
Vb 2313+	2	715	715	233	266	440	63.3	14.1	10907	0.19
Vb 2314+	2	770	770	233	266	440	65.4	13.8	11746	0.18
Vb 2408	2	916	916	374	213	550	98.1	23.4	10085	0.21
Vb 2409	2	1030	1030	374	213	550	102	22.7	11346	0.18
Vb 2410	2	1140	1140	374	213	550	108	22.0	12606	0.16
Vb 2411+	2	1250	1250	374	213	550	112	21.4	13867	0.15
Vb 2412	2	1370	1370	374	298	550	141	33.1	15128	0.14
Vb 2413	2	1480	1480	374	298	550	146	32.4	16388	0.13
Vb 2414	2	1600	1600	374	298	550	150	31.7	17649	0.12
Vb 2415	2	1710	1710	374	298	550	155	31.0	18909	0.11
Vb 2416+	2	1830	1830	374	298	550	160	30.3	20170	0.10
Vb 2417	2	1940	1940	374	383	550	190	43.1	21431	0.10
Vb 2418	2	2060	2060	374	383	550	195	42.3	22691	0.09
Vb 2419	2	2170	2170	374	383	550	199	41.8	23952	0.09
Vb 2420	2	2290	2290	374	383	550	204	41.1	25213	0.08
Vb 2421+	2	2400	2400	374	383	550	209	40.4	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).
*Height includes connector.

