



## Battery Range Summary

The utilisation of Thin Plate Pure Lead (TPPL) technology and manufacturing processes makes the EnerSys® PowerSafe® V series of 2 volt DIN-size cells the ideal alternative to OPzV products for reliable grid, grid assist and selected unreliable grid applications. The specification of PowerSafe V300-2 to V850-2 cells makes them perfectly suited for use in the telecom, utility and UPS market sectors.

When compared to traditional OPzV technology batteries, the much greater energy density of these DIN-size PowerSafe V cells affords users the opportunity to either readily upgrade their battery capacity within the same footprint or to maintain the same capacity within a significantly reduced footprint. Furthermore, the outstanding charge acceptance of EnerSys' TPPL technology results in much shorter recharge times for PowerSafe V300-2 to V850-2 relative to conventional OPzV batteries.

Additional benefits of the 2 volt DIN-size PowerSafe V series include long design life, extended storage intervals and a lower energy consumption than typical VRLA AGM batteries. A UL94 V-0 rated flame retardant polymer is used as standard for cell containers and lids.

The benefits of EnerSys' TPPL technology together with the use of classic cell sizes now give the globally acclaimed, highly successful PowerSafe V range a brand new dimension.



### Features & Benefits

- Extensive capacity range: 300 - 850Ah ( $C_{10}/1.80Vpc/20^{\circ}C$ )
- 2 volt cells in classic DIN size containers
- Outstanding energy density
- Long design life: 15 years at 20°C (float mode)
- Flame retardant containers and lids
- Fast charge acceptance capability
- Low energy consumption compared to traditional VRLA AGM batteries
- Long storage life for maximum flexibility in project deployment: 24 months (20°C)
- Installation in horizontal and vertical orientations

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## Construction

- Pure lead grid design to prolong service life and enhance corrosion resistance
- Separators in low resistance microporous glass fibre. The electrolyte is absorbed within this material, preventing acid spills in case of accidental damage
- Containers and lids in UL94 V-0 rated flame retardant ABS material, highly resistant to shocks and vibrations
- High grade dilute sulphuric acid electrolyte absorbed into separator material
- Proven high integrity leak resistant terminal seal design
- Self-regulating pressure relief valve prevents ingress of atmospheric oxygen
- Flame arrestor built into each cell for increased operational safety

## Installation & Operation

- Designed for operation in reliable grid, grid assist and unreliable grid (with low risk of partial state of charge) applications
- Cells are designed for installation in cabinets or on stands, close to the point of use. A separate battery room is not necessary
- PowerSafe® V300-2 to V850-2 cells can be installed in horizontal or vertical orientation
- Recommended float charge voltage: 2.29Vpc at 20°C – 2.27Vpc at 25°C
- Low maintenance: no water addition required
- Wide operating temperature range: -30°C to +45°C
- Connection torque: 24 ± 1 Nm - 212 ± 9 lbf in
- Up to 24 month shelf life (at 20°C)

## Standards

- Designed to be compliant with the requirements of international standard IEC 60896-21/22
- Classified as "Very Long Life" (> 12 years) according to the 2015 Eurobat guide
- UL recognised component
- Classified as non-spillable and approved as non-hazardous cargo for ground, sea and air transportation in accordance with the requirements of IMDG (International Maritime code for Dangerous Goods) and ICAO (International Civil Aviation Organisation)
- The management systems governing the manufacture of PowerSafe V300-2 to V850-2 products are ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 certified

## General Specifications

Battery Type	Nominal Voltage (V)	Nominal Capacity (Ah)		Nominal Dimensions (mm) <sup>(1)</sup>				Typical Weight (Kg) <sup>(2)</sup>	Short Circuit Current (A) <sup>(3)</sup>	Internal Resistance (mΩ) <sup>(3)</sup>	Terminals
		C <sub>10</sub> /1.80Vpc /20°C	C <sub>8</sub> /1.75Vpc /25°C	Length	Width	Height	Height Over Insulation				
V300-2	2	300	300	103	206	382	403	19.0	5369	0.38	2 x M10 F
V370-2	2	370	370	124	206	382	403	23.0	6219	0.33	2 x M10 F
V450-2	2	450	450	145	206	382	403	27.0	6839	0.29	2 x M10 F
V550-2	2	550	550	124	206	498	520	31.0	6346	0.33	2 x M10 F
V650-2	2	650	650	145	206	498	520	37.0	6864	0.28	2 x M10 F
V750-2	2	750	750	166	206	498	520	42.0	7646	0.27	2 x M10 F
V850-2	2	850	850	145	206	673	695	48.0	6890	0.30	2 x M10 F

Notes:

<sup>(1)</sup> In horizontal orientation, the above indicated heights become the lengths, lengths become widths and widths become heights.

<sup>(2)</sup> Values include a +/- 2% tolerance.

<sup>(3)</sup> Figures obtained via IEC method.

## Outline Drawings

