

## RANGE SUMMARY

The PowerSafe® OP and OPC ranges of flooded cells have been designed for use in standby power applications where high performance and long life are requirements of paramount importance. The special flat plate design offers various key benefits such as high energy density and low maintenance to provide cost effective and reliable battery solutions. In addition, the PowerSafe OP/OPC cells offer excellent performance at high rate discharges.

This comprehensive range of cells, designed for operation in parallel or in series, ensures that your system requirements are perfectly matched. The choice of alloys (low antimony lead for OP types, lead-calcium for OPC types) provides further options.

The specification of the PowerSafe OP and OPC cells make it ideal for a broad spectrum of applications including telecommunications, Uninterruptible Power Supply, power generation, transmission and distribution, emergency lighting and security systems.

### Features & Benefits

- Capacity range: 146Ah – 536Ah
- Choice of alloys: low antimony lead or lead-calcium
- High energy density
- Excellent high rate discharge performance
- Long design life
- Low maintenance
- Compliant with IEC 60896-11
- Manufactured to ISO 9001:2008 & ISO 14001:2004



## Construction

- Positive electrodes – pasted flat plates for long life and enhanced performance
- Negative electrodes – pasted flat plates provide perfect balance with the positive plates to give maximum performance
- Separators – made from modified phenolic resin with integrated polyester fleece for minimum resistance
- Containers – injection-moulded from durable, transparent styrene acrylonitrile (SAN) to allow the electrolyte level and cell condition to be monitored visually
- Cell lids – moulded from durable, opaque SAN, sealed to the container by chemical bonding to ensure no electrolyte leakage
- Electrolyte – diluted sulphuric acid with a specific gravity of 1.250 to ensure optimum performance and longevity

- Vent plugs – designed to allow free exit of gasses, yet eliminate acid spray. Equipped with flame arrestors
- Terminals – lead alloy leak-proof safety pole with brass insert for OP & OPC 6/7/9 types and with copper insert for OP & OPC 10 to 22
- Connectors – specifically designed, insulated, lead-tin plated, inter-cell connectors protect against corrosion

- Large selection of stands, including seismic stands, available upon request

## Standards

- Compliant with international standard IEC 60896-11 (2002)
- Batteries must be installed in accordance with safety standards IEC 62485-2, EN 50272-2 and national regulations
- Manufactured in EnerSys® ISO 9001:2008 and ISO 14001:2004 certified production facilities

## Installation & Operation

- Recommended float charge voltage: 2.23Vpc (20°C/68°F – 25°C/77°F)
- Operating temperature range: -10°C to +45°C
- Topping-up intervals between 1 and 3 years (depending upon cell types and alloy) in standby operation mode thanks to large electrolyte reserve

## General Specifications

Cell Type <sup>(1)</sup>		Nominal Capacity (Ah)			Nominal Dimensions						Typical Weight		Electrolyte Volume		Short Circuit Current (A) <sup>(4)</sup>	Internal Resistance (mΩ) <sup>(4)</sup>		
OP	OPC	Nominal Voltage (V)	10 hr rate to 1.80Vpc @ 20°C	8 hr rate to 1.75Vpc @ 77°F	Length <sup>(2)</sup>		Width <sup>(3)</sup>		Overall Height		Dry		Acid Filled					
					mm	in	mm	in	mm	in	kg	lbs	kg	lb	Litres	US gal		
OP 6	OPC 6	2	146	147	122	4.8	189	7.5	380	15.0	9.2	20.3	13.4	29.6	3.4	0.90	2846	0.74
OP 7	OPC 7	2	170	172	122	4.8	189	7.5	380	15.0	10.1	22.7	14.2	31.3	3.3	0.88	3150	0.67
OP 9	OPC 9	2	219	221	122	4.8	189	7.5	380	15.0	11.9	26.3	15.8	34.9	3.1	0.82	3800	0.55
OP 10	OPC 10	2	244	246	160	6.3	189	7.5	380	15.0	13.1	28.9	18.8	41.5	4.6	1.21	4000	0.52
OP 11	OPC 11	2	268	271	160	6.3	189	7.5	380	15.0	14.0	30.1	19.5	43.0	4.5	1.19	4355	0.48
OP 12	OPC 12	2	292	295	160	6.3	189	7.5	380	15.0	15.0	33.1	20.2	44.6	4.4	1.17	4625	0.45
OP 13	OPC 13	2	317	320	198	7.8	189	7.5	380	15.0	16.1	35.5	23.3	51.4	5.9	1.56	4935	0.43
OP 14	OPC 14	2	341	345	198	7.8	189	7.5	380	15.0	17.0	37.5	24.1	53.2	5.8	1.53	5285	0.40
OP 15	OPC 15	2	366	369	198	7.8	189	7.5	380	15.0	17.9	39.5	24.3	53.6	5.7	1.51	5585	0.38
OP 16	OPC 16	2	390	393	198	7.8	189	7.5	380	15.0	18.9	41.7	25.7	56.7	5.6	1.48	5920	0.36
OP 17	OPC 17	2	414	418	236	9.3	189	7.5	380	15.0	20.6	45.5	29.4	64.9	7.1	1.88	6300	0.33
OP 18	OPC 18	2	439	443	236	9.3	189	7.5	380	15.0	21.5	47.4	30.2	66.6	7.0	1.85	6730	0.31
OP 19	OPC 19	2	463	468	236	9.3	189	7.5	380	15.0	22.4	49.4	31.0	68.4	6.9	1.83	7050	0.30
OP 20	OPC 20	2	488	492	236	9.3	189	7.5	380	15.0	23.3	51.4	31.8	70.1	6.8	1.80	7400	0.28
OP 21	OPC 21	2	512	517	274	10.8	189	7.5	380	15.0	24.7	54.5	34.7	76.5	8.2	2.17	7790	0.27
OP 22	OPC 22	2	536	542	274	10.8	189	7.5	380	15.0	25.6	56.5	35.4	78.0	8.0	2.12	8220	0.25

### Notes:

- (1) OP types with low antimony lead alloy, OPC types with lead-calcium alloy
- (2) The length of a cell is measured at tight angles to the plates
- (3) The width of a cell is measured parallel to the plates
- (4) Figures obtained via IEC 60896-11 method (±10%)



www.enersys-emea.com

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

**EnerSys Europe**  
EH Europe GmbH  
Löwenstrasse 32  
8001 Zurich, Switzerland

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

**EnerSys Ltd.**  
Oak Court  
Clifton Business Park  
Wynne Avenue, Swinton  
Manchester M27 8FF  
UK  
Tel: +44 (0)161 794 4611  
Fax: +44 (0)161 727 3809

Contact:

© 2012 EnerSys. All rights reserved.  
Trademarks and logos are the property of EnerSys and its affiliates unless otherwise noted.