



**PowerSafe®**  
OPzS

## Battery Range Summary

The EnerSys® range of PowerSafe® OPzS batteries has been designed for use in all standby power applications that demand the highest levels of reliability and security.

PowerSafe OPzS cells benefit from an optimised plate design that results in increased capacity compared to the requirements of the internationally recognised DIN standard. In addition, the flooded tubular plate technology offers excellent cycling performance together with a proven long life under float voltage conditions, for a truly flexible solution.

The specification of the PowerSafe OPzS cells make it ideal for a wide range of applications such as telecommunications, power generation and distribution, railway, airport and seaport signalling, computing, emergency lighting, automation and measuring systems.



### Features and Benefits

- Capacity range: 216Ah – 3360Ah ( $C_{10}/1.80Vpc/20^{\circ}C$ )
- $C_{10}$  capacities exceed the DIN standard values
- Excellent cyclability
- 20 year design life ( $20^{\circ}C$ )
- High operational reliability
- Low maintenance
- 3 year water topping-up interval
- DIN 40736-1 compliant

## Construction

- Positive electrodes – die-cast tubular plates with low antimony lead alloy for longer life
- Negative electrodes – pasted flat plates provide perfect balance with the positive plates to give maximum performance
- Separators – special microporous material
- Containers – moulded from durable, transparent styrene acrylonitrile (SAN) to allow electrolyte level and cell condition to be monitored visually
- Cell lids – made of opaque ABS sealed to container to ensure no electrolyte leakage
- Electrolyte – diluted sulphuric acid with a specific gravity of 1.240  $\pm$  0.010 (maximum level) at 20°C for a fully charged cell

- Terminals – lead alloy leakproof pole with brass insert designed to give minimum resistance and maximum current flow
- Vent plugs – safety plugs equipped with flame arrestors. Special vent plugs allowing topping-up and S.G. reading without the need to remove them, are available on request
- Connectors – fully insulated, solid copper inter-cell connectors allow voltage measurements

## Installation & Operation

- Float charge voltage: 2.23Vpc at 20°C
- Permissible operating temperature range: -10°C to +45°C

- Topping-up intervals of about 3 years in standby operation mode thanks to large electrolyte reserve
- Large selection of stands, including seismic stands, available upon request

## Standards

- Compliant with both the international standard IEC 60896-11 and the DIN standard 40736-1
- Batteries must be installed in accordance with safety standards EN 50272-2, IEC 62485-2 and national regulations
- The management systems governing the manufacture of PowerSafe® OPzS products are ISO 9001:2008 and ISO 14001:2004 certified

## General Specifications

| Cell Type    | Nominal Voltage (V) | Number of Terminals | Nominal Capacity (Ah)        |                             | Nominal Dimensions (mm) |       |                       | Moist Charged Cells |                                            | Filled & Charged Cells |                             | 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 <sup>(1)</sup> | Typical Weight (kg) | Electrolyte Volume <sup>(2)</sup> (Litres) | Typical Weight (kg)    | Electrolyte Volume (Litres) |                           |                          |
| 4 OPzS 200   | 2                   | 2                   | 216                          | 217                         | 103                     | 206   | 403                   | 13.9                | 2.6                                        | 17.2                   | 3.9                         | 2400                      | 0.85                     |
| 5 OPzS 250   | 2                   | 2                   | 270                          | 266                         | 124                     | 206   | 403                   | 16.6                | 3.4                                        | 20.8                   | 4.9                         | 3000                      | 0.68                     |
| 6 OPzS 300   | 2                   | 2                   | 324                          | 319                         | 145                     | 206   | 403                   | 19.2                | 4.0                                        | 24.3                   | 5.8                         | 3600                      | 0.57                     |
| 5 OPzS 350   | 2                   | 2                   | 390                          | 388                         | 124                     | 206   | 520                   | 21.3                | 4.7                                        | 26.9                   | 6.7                         | 3400                      | 0.60                     |
| 6 OPzS 420   | 2                   | 2                   | 468                          | 466                         | 145                     | 206   | 520                   | 24.8                | 5.7                                        | 31.5                   | 8.0                         | 4075                      | 0.50                     |
| 7 OPzS 490   | 2                   | 2                   | 546                          | 543                         | 166                     | 206   | 520                   | 30.8                | 4.4                                        | 36.1                   | 9.3                         | 4750                      | 0.43                     |
| 6 OPzS 600   | 2                   | 2                   | 660                          | 648                         | 145                     | 206   | 695                   | 35.7                | 7.8                                        | 44.8                   | 11.1                        | 5000                      | 0.40                     |
| 7 OPzS 700   | 2                   | 4                   | 817                          | 798                         | 210                     | 191   | 695                   | 46.4                | 9.6                                        | 57.6                   | 14.8                        | 5800                      | 0.34                     |
| 8 OPzS 800   | 2                   | 4                   | 880                          | 856                         | 210                     | 191   | 695                   | 50.7                | 9.0                                        | 61.3                   | 14.5                        | 6650                      | 0.30                     |
| 9 OPzS 900   | 2                   | 4                   | 1040                         | 1013                        | 210                     | 233   | 695                   | 55.6                | 13.2                                       | 70.9                   | 18.4                        | 7475                      | 0.27                     |
| 10 OPzS 1000 | 2                   | 4                   | 1100                         | 1071                        | 210                     | 233   | 695                   | 59.9                | 12.5                                       | 74.6                   | 18.1                        | 8300                      | 0.24                     |
| 11 OPzS 1100 | 2                   | 4                   | 1260                         | 1227                        | 210                     | 275   | 695                   | 67.7                | 13.2                                       | 84.4                   | 20.8                        | 9150                      | 0.22                     |
| 12 OPzS 1200 | 2                   | 4                   | 1320                         | 1293                        | 210                     | 275   | 695                   | 72.3                | 12.3                                       | 88.0                   | 20.6                        | 9950                      | 0.20                     |
| 11 OPzS 1375 | 2                   | 4                   | 1590                         | 1631                        | 210                     | 275   | 845                   | 83.4                | 19.8                                       | 109.0                  | 27.6                        | 8800                      | 0.22                     |
| 12 OPzS 1500 | 2                   | 4                   | 1680                         | 1730                        | 210                     | 275   | 845                   | 89.8                | 18.9                                       | 114.3                  | 27.3                        | 9600                      | 0.21                     |
| 13 OPzS 1625 | 2                   | 6                   | 1910                         | 1969                        | 214                     | 399   | 820                   | 102.1               | 30.1                                       | 140.0                  | 39.6                        | 10400                     | 0.19                     |
| 14 OPzS 1750 | 2                   | 6                   | 2040                         | 2092                        | 214                     | 399   | 820                   | 107.3               | 29.6                                       | 144.0                  | 39.6                        | 11200                     | 0.18                     |
| 15 OPzS 1875 | 2                   | 6                   | 2150                         | 2208                        | 214                     | 399   | 820                   | 113.1               | 28.4                                       | 149.0                  | 38.9                        | 12000                     | 0.16                     |
| 16 OPzS 2000 | 2                   | 6                   | 2240                         | 2307                        | 214                     | 399   | 820                   | 117.6               | 28.0                                       | 151.5                  | 39.0                        | 12800                     | 0.15                     |
| 17 OPzS 2125 | 2                   | 8                   | 2470                         | 2546                        | 212                     | 487   | 820                   | 133.3               | 36.1                                       | 180.0                  | 48.5                        | 13600                     | 0.14                     |
| 18 OPzS 2250 | 2                   | 8                   | 2600                         | 2669                        | 212                     | 487   | 820                   | 140.0               | 34.8                                       | 184.0                  | 47.8                        | 14400                     | 0.14                     |
| 19 OPzS 2375 | 2                   | 8                   | 2710                         | 2785                        | 212                     | 487   | 820                   | 145.6               | 33.9                                       | 189.0                  | 47.5                        | 15200                     | 0.13                     |
| 20 OPzS 2500 | 2                   | 8                   | 2800                         | 2884                        | 212                     | 487   | 820                   | 150.1               | 33.6                                       | 193.0                  | 47.6                        | 16000                     | 0.12                     |
| 22 OPzS 2750 | 2                   | 8                   | 3150                         | 3238                        | 212                     | 576   | 820                   | 171.4               | 41.8                                       | 225.0                  | 57.8                        | 17600                     | 0.11                     |
| 24 OPzS 3000 | 2                   | 8                   | 3360                         | 3543                        | 212                     | 576   | 820                   | 181.8               | 40.1                                       | 234.5                  | 56.4                        | 19200                     | 0.10                     |

Notes

<sup>(1)</sup> Height shown is overall height, including connectors and shrouds

<sup>(2)</sup> Typical electrolyte volume for filling cells (1.280 SG electrolyte at 20°C)

## Outline Drawings

