



The CELLYTE UPS Series

6-12V High rate VRLA battery

**Insure against
interruption in
critical standby
applications**

(OPTIONAL)
FITTED
WITH



CELLYTE UPS



Specification

| | |
|-----------------------------|---|
| Positive electrode: | Deep cycle Lead Calcium high Tin Aluminium grid |
| Negative electrode: | Standard Lead Calcium Tin Aluminium Alloy grid |
| Float voltage: | 2.25 - 2.30 vpc \pm 1% at 25°C |
| Max. charge voltage: | 2.50 vpc \pm 1% at 25°C |
| Electrolyte: | Sulphuric acid absorbed into AGM separator |
| Safety valve: | 1-3 PSI self-resealing |
| Separators: | High compression AGM separator |
| Terminals: | Integral Brass insert for M-bolt |
| Catalyst: | Optionally fitted with performance enhancing catalyst |
| Electrical: | 6V 192Ah - 12V 22.3 - 152Ah at C/10 to 1.80vpc @ 25°C |

Product information

The world's first high power UPS catalyst battery

The low corrosion, low resistance Alloy and negative Carbon additive work together to give you a battery that provides long service life and performs well in critical conditions. With a large plate surface area and efficient active material processing, it delivers high currents with minimal voltage drop. While the low corrosion, low resistance Alloy and the negative carbon additive work together to give you a battery that will give long service life, and perform well in critical conditions.

SEC's CELLYTE UPS batteries are the first to use a CatVent™ catalyst in the cell headspace. This recombines the Hydrogen and Oxygen gases produced during the charging cycle. Batteries without this feature are subject to depolarization, which reduces the state of charge, increases the float current, and reduces the lifespan.

Product benefits

High power rating

The latest plate design means you get more power out of the UPS; so the battery performs for a longer time at a higher rate.

High power efficiency

The UPS has extremely low internal resistance, allowing quick recharge and operation at cooler temperatures. This makes it more efficient when your application demands a quick charge/recharge turnaround.

Reliable under temperature fluctuations

Inclusion of a catalyst means less current and therefore less corrosion at high temperatures. While the recommended operating range is 0°C – 30°C, it will withstand temperatures between -40°C and +70°C.

Design life

Life: 10 Years design life in float service @ 30°C with an approved catalyst / 10 Years design life in float service @ 25°C without catalyst

Cycles: 340 cycles @ 80% DOD at 25°C with catalyst / 320 cycles @ 80% DOD at 25°C without catalyst

Product Compliance

IEC 60896-21/22-2004
BS 6290 part 4
UL Component Approval
Eurobat

Company Accreditation

ISO 9001:2015
ISO 14001:2004

High power for critical applications

Adding a CatVent™ catalyst to the cell absorbs free oxygen in the headspace and recombines it with the Hydrogen produced during charging. This reduces Oxygen to the negative plate and lessens depolarisation. In turn, you'll see a reduction in corrosion and gas evolution at the plates.

The CatVent™ catalyst provides longer battery life and lower operating costs. Plus, the addition of the catalyst delays cell dry out and reduces cell heating, which will significantly lessen the risk of thermal runaway or accidental fire.

Further to this, the CELLYTE UPS has an extremely well-balanced internal design. The amount of positive and negative active materials have been precisely calculated to provide the highest available capacity.

If you're looking for UPS solutions, you produce or manufacture UPS equipment, or you need to replace an existing UPS installation, then SEC's CELLYTE UPS is the right battery for you.

Miminal maintenance requirements

The UPS doesn't need added water. Regular simple maintenance checks will ensure that the batteries' characteristics remain consistent.

Product consistency

The UPS has a minimum variation of performance battery after battery; this means there's a low risk of going out of phase, which makes it great in multiple series or parallel string applications.







Abuse resistant

The SEC UPS battery has a high Tin Alloy composition. This makes it resistant against accidental deep discharge. It can also handle unexpected temperature fluctuations without failing.

“With increased life and reliability, greatly reduced operating costs, and enhanced safety, the addition of SEC’s innovative CatVent™ is not merely an improvement it is transformational technology.”

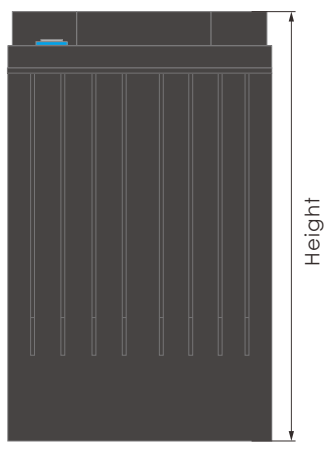
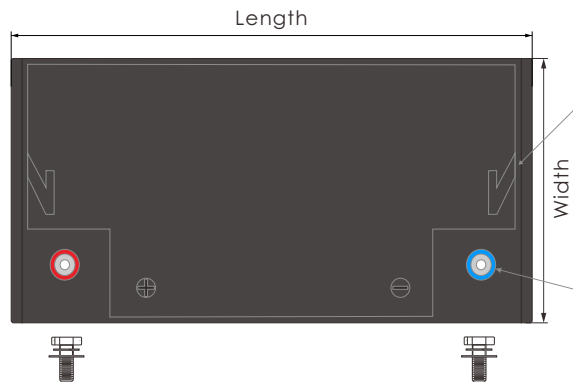
Dr Mike McDonagh
SEC Group

Applications

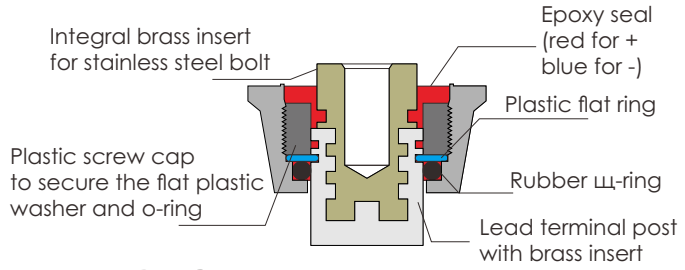
-  **Float service**
-  **UPS**
-  **Reserve power**
-  **Engine starting**
-  **Genset**
-  **Generator start**

Engineering

Cell outline



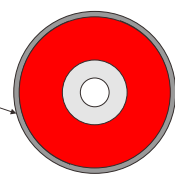
Triple post seal detail



SEC TRIPLE-SEAL DESIGN

Material:
ABS Case & Cover
Colour:
Case : Pantone 424U
Cover : Pantone 424U

Female terminal insert for stainless steel bolt



Cell dimensions

Dimensions/ Weights/ Data

| SEC model type | Nominal capacity C/10 1.80 vpc | Battery weight | | Overall battery dimension | | | | | | | | Internal resistance (mΩ) | Maximum charge current (A) | Maximum discharge current (A) | Short Circuit Current (A) | Terminal post type |
|-------------------|-----------------------------------|----------------|------|---------------------------|------|-------|------|--------|------|--------------|------|--------------------------|----------------------------|-------------------------------|---------------------------|--------------------|
| | | | | Length | | Width | | Height | | Total height | | | | | | |
| | | | | kg | lbs | mm | Inch | mm | Inch | mm | Inch | | | | | |
| 6-UPS-645 | 192 | 31.0 | 68.3 | 321 | 12.6 | 176 | 6.93 | 226 | 8.90 | 229 | 9.02 | 1.80 | 67.5 | 1600 | 5000 | FT5 |
| 12-UPS-100 | 22.3 | 8.20 | 18.1 | 166 | 6.54 | 175 | 6.89 | 125 | 4.92 | 125 | 4.92 | 10.0 | 7.20 | 360 | 940 | FT2 |
| 12-UPS-110 | 26.1 | 9.30 | 20.5 | 165 | 6.50 | 125 | 4.92 | 175 | 6.89 | 175 | 6.89 | 9.00 | 8.40 | 420 | 1220 | FT2 |
| 12-UPS-150 | 44.4 | 11.0 | 24.3 | 195 | 7.68 | 130 | 5.12 | 155 | 6.10 | 166 | 6.54 | 9.00 | 9.90 | 385 | 1600 | FT3 |
| 12-UPS-160 | 45.5 | 14.2 | 31.3 | 197 | 7.76 | 165 | 6.50 | 165 | 6.50 | 170 | 6.69 | 7.50 | 13.5 | 450 | 1700 | FT3 |
| 12-UPS-200 | 60.6 | 18.0 | 39.7 | 229 | 9.02 | 138 | 5.43 | 208 | 8.19 | 211 | 8.31 | 6.00 | 16.5 | 550 | 1950 | FT3 |
| 12-UPS-250 | 74.9 | 22.0 | 48.5 | 260 | 10.2 | 168 | 6.61 | 211 | 8.31 | 214 | 8.43 | 6.00 | 21.0 | 700 | 2250 | FT3 |
| 12-UPS-300 | 90.5 | 24.5 | 54.0 | 260 | 10.2 | 168 | 6.61 | 211 | 8.31 | 214 | 8.43 | 5.00 | 25.5 | 800 | 2650 | FT3 |
| 12-UPS-370 | 111 | 29.5 | 65.0 | 306 | 12.0 | 169 | 6.65 | 211 | 8.31 | 214 | 8.43 | 4.50 | 27.0 | 800 | 3000 | FT3 |
| 12-UPS-400 | 123 | 32.5 | 71.7 | 330 | 13.0 | 171 | 6.73 | 225 | 8.86 | 225 | 8.86 | 3.50 | 30.0 | 800 | 3300 | FT3 |
| 12-UPS-480 | 135 | 43.0 | 94.8 | 342 | 13.5 | 172 | 6.77 | 280 | 11.0 | 285 | 11.2 | 3.50 | 40.2 | 1050 | 4200 | FT5 |
| 12-UPS-500 | 141 | 46.0 | 101 | 342 | 13.5 | 172 | 6.77 | 280 | 11.0 | 285 | 11.2 | 3.20 | 42.0 | 1100 | 4350 | FT5 |
| 12-UPS-540 | 152 | 46.5 | 103 | 342 | 13.5 | 172 | 6.77 | 280 | 11.0 | 285 | 11.2 | 3.20 | 45.0 | 1100 | 4500 | FT5 |

* CatVent™ catalyst can be added as an option, indicated by suffix -C in the model code.

* 6-UPS-645, 12-UPS-100, 12-UPS-110, 12-UPS-150 and 12-UPS-160 can not fitted with catalyst.

Operating temperature

| | |
|-------------------------------------|---|
| Design operating temperature | 30°C with an approved catalyst 25°C without catalyst |
| Limit for charging | -10 to +50°C |
| Limit for discharging | -15 to +50°C |
| Limit for storage | -20 to +50°C |

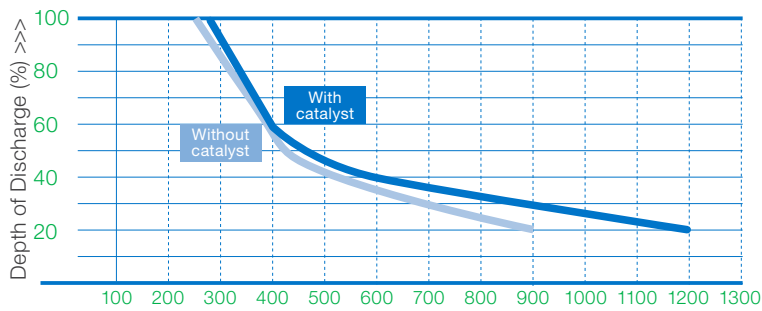
Charging method

| | |
|--|--|
| Float charging voltage at 25°C | 2.25 - 2.30vpc with temperature compensation |
| Maximum charging voltage at 25°C | 2.50vpc with temperature compensation |
| Float charge temperature compensation factor | -3 mV/cell/°C above 25°C +3 mV/cell/°C below 25°C |
| Cyclic charge temperature compensation factor | -5 mV/cell/°C above 25°C +5 mV/cell/°C below 25°C |

Cycle life

Relationship between depth of discharge and life

Ambient temperature 25°C



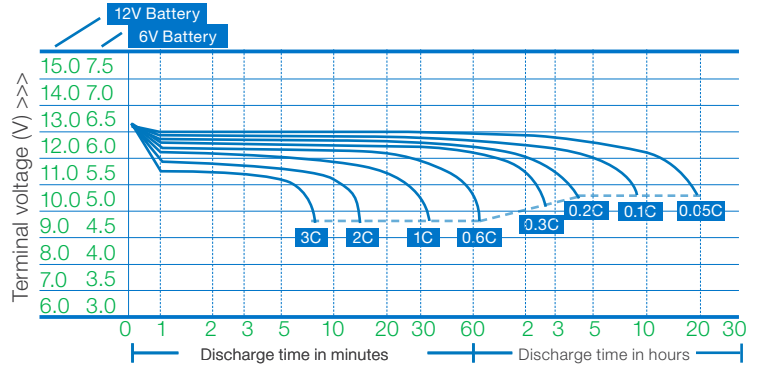
Cycle life >>>

The depth of discharge critically affects the number of cycles which a battery will complete during its life time.

Discharge characteristics

Discharge current VS discharge time curve

Ambient temperature 25°C

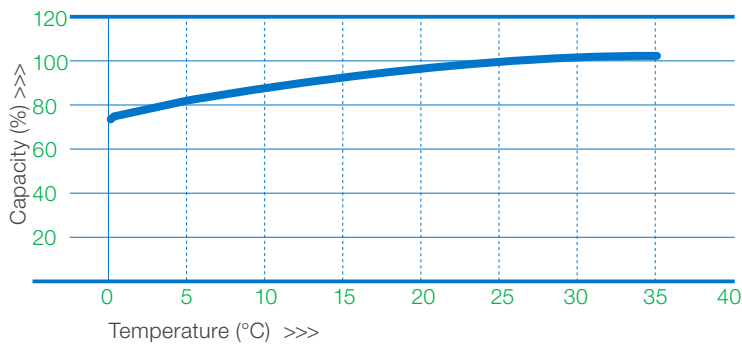


Discharge duration (h) >>>

Effect of discharge rate on battery capacity.

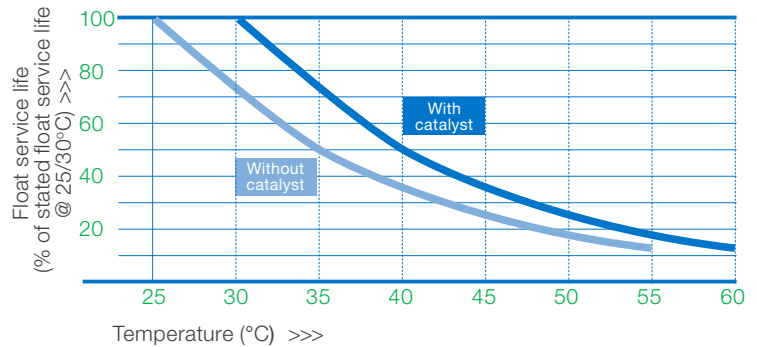
Effect of inclined temperature

Effect of temperature on capacity at C/10 discharge rate



A high ambient temperature will increase the cell capacity but will significantly shorten its calendar and cycle life.

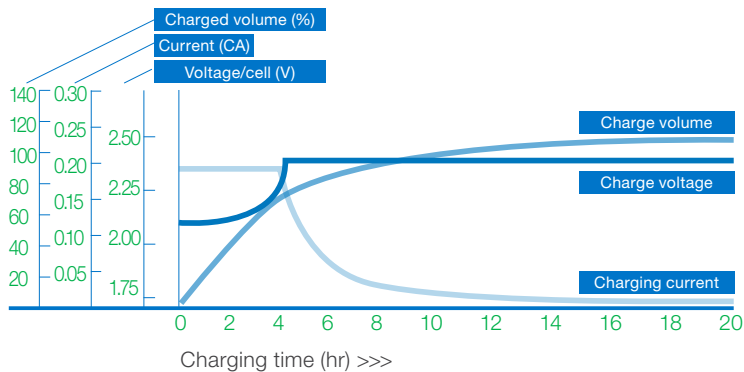
Float service life VS temperature



Effect of temperature on float service life.

Charge method

Constant current/voltage charge characteristics



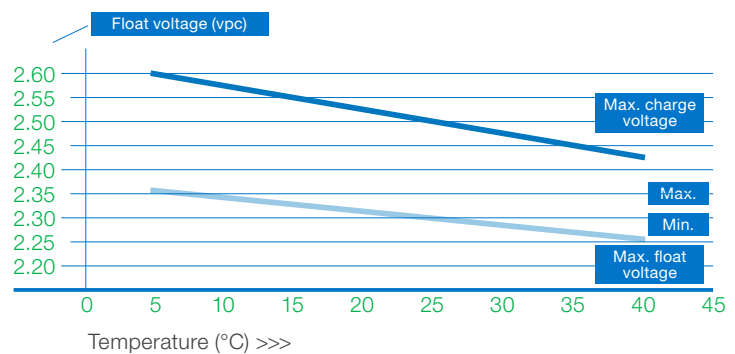
The preferred charging procedure should be in accordance with DIN 41773, constant current/constant voltage (IU characteristics). Constant float charging utilising a constant voltage charger is also acceptable.

Charging voltage measured at the battery terminals: 2.40+/-1% x number of cells.

Equalising or fast charging can occasionally be permitted in which the charging voltage is 2.50V x number of cells for a maximum fixed period of 8 hours (depends on state of charge). This will apply in deep discharge and limited recharge operations such as stand-by with parallel connections. Automatic changeover to the charging voltage of 2.30V ±1% x number of cells should follow after this period.

Charge compensation

Temperature compensation for float voltage



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The energy storage market is booming. From 2012 to 2016, the market has tripled from 6 billion to 18 billion US dollars, driven in large part by renewable energy needs. With more than half of the world's energy supply destined to come from renewable energy sources in the near future, continued rapid growth is a certainty. The opportunities are immense.

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Technical training

Product discounts

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Sales and marketing training

Partner performance awards

Customer recruitment rewards

On demand technical and sales support

Online tools for easy direct access to SEC



Contact us today to learn more about how you can grow your profits in the booming market for energy storage with the SEC Partner Grid Programme.



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