

# LSP 33600-20F

## Hybrid Primary Li-SOCl<sub>2</sub> battery

3.6 V D-size bobbin cell fitted with a 20F LIC

Saft's LSP 33600-20F battery is ideally suited for long life applications (typically from 5 to 10 years), featuring low base currents and periodic high current pulses up to 1.5 A.

### Benefits

- High pulse current capability
- High voltage response, stable even after long dormant periods
- Low self-discharge compatible with long operating life (less than 1.5% capacity loss per year after 1 year of stabilization at +20 °C)
- Wide operating temperature range (-20°C to +70°C)

### Key features

- Battery made of Saft's LS 33600 D-size bobbin Li-SOCl<sub>2</sub> cell fitted with a 20 F LIC (Lithium Ion Capacitor) in parallel connection for pulse support
- Restricted for transport (class 9)
- Made in EU

### Designed to meet all major quality, safety and environment standards

- Safety: UL 1642 (File MH12609) and IEC 60086-4 for the LS 33600 cell
- Transport: UN 3090, 3091 & 3499 for components (*assembly under testing*)
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH

### Typical applications

- Smart Metering
- Internet of Things
- Tracking systems
- Environment monitoring



### Electrical characteristics

(Typical values related to batteries stored up to one year at +30 °C max)

|                                                                  |                         |
|------------------------------------------------------------------|-------------------------|
| Typical capacity (at 5 mA, +20 °C, 2.0 V cut-off) <sup>(1)</sup> | 17 Ah                   |
| Open circuit voltage                                             | 3.67 V                  |
| Nominal voltage (at 0.7 mA, +20 °C)                              | 3.6 V                   |
| Nominal energy                                                   | 61.2 Wh                 |
| Typical pulse capability <sup>(2)</sup>                          | At 20°C pulse 1 A / 3 s |

### Operating conditions

|                                            |                                        |
|--------------------------------------------|----------------------------------------|
| Operating temperature range <sup>(3)</sup> | -20 °C / +70 °C                        |
| Storage temperatures                       | Recommended <sup>(4)</sup> +30 °C max. |

### Physical characteristics

|                        |                                       |               |
|------------------------|---------------------------------------|---------------|
| Length (max)           | Design example. For other             | 44.0 mm       |
| Width (max)            | configurations, please consult Saft   | 33.5 mm       |
| Height (max)           |                                       | 62.5 mm       |
| Terminals              | Flying leads with optional connectors |               |
| Typical battery weight |                                       | 92 g          |
| Li metal content       |                                       | approx. 4.5 g |

### References

|               |        |
|---------------|--------|
| Saft part No. | 60090U |
|---------------|--------|

<sup>(1)</sup> Dependent upon current drain, temperature, cut-off and battery orientation.

<sup>(2)</sup> Typical pulse capability to 2.8V at +20 °C from fresh battery. The voltage readings may vary according to:

- the pulse characteristics such as intensity, duration and frequency
- the environment's temperature
- the battery's previous history.

Consult Saft for any other pulse conditions.

<sup>(3)</sup> Operation above or under ambient temperature may lead to reduced capacity and lower voltage readings. Consult Saft.

<sup>(4)</sup> For more severe conditions, consult Saft.

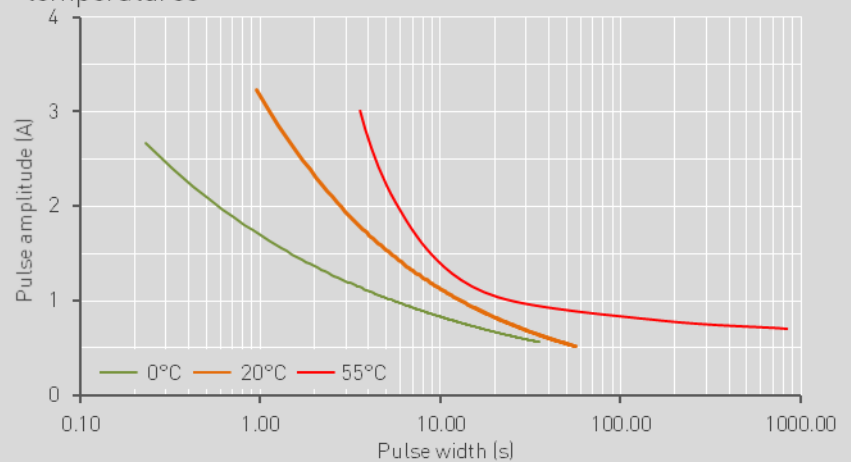
## Storage

- The storage area should be clean, cool (preferably not exceeding +30 °C), dry and ventilated

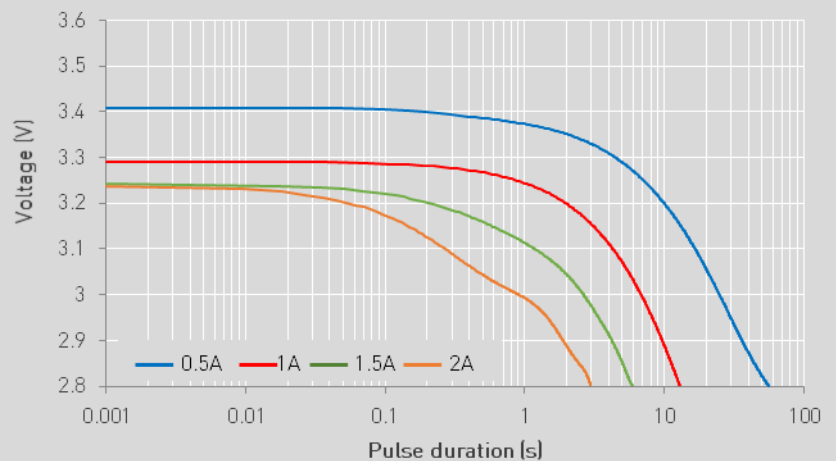
## Warning

- Fire, explosion and burn hazard
- Do not recharge, short circuit, crush, disassemble, heat above 100 °C (212 °F), incinerate, or expose contents to water
- Do not solder directly to the cell (use tabbed cell versions instead)

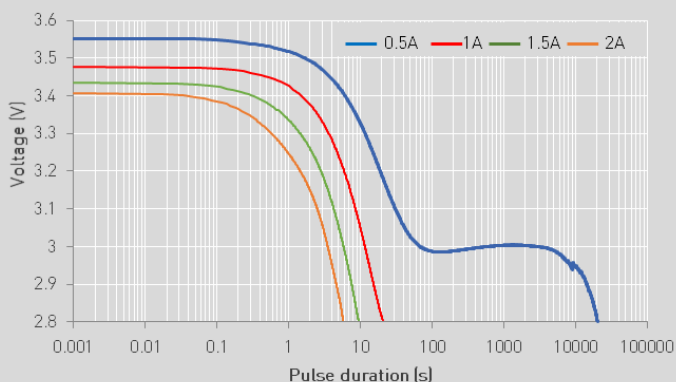
Maximum pulse width from 3,6 V to 2,8 V at various temperatures



Voltage during a pulse at 20°C



Voltage during a pulse at 55°C



Voltage during a pulse at low temperatures

