2. M20 CV
Primary Li-MnO₂ battery

6 V lithium manganese dioxide battery

Saft's 2.M20 CV battery is based on D size Li-MnO₂ cells with spiral electrode design. It is ideally suited for applications requiring high energy with stable voltage under high discharge rate in -40 °C / +72 °C environment.

Benefits
- High drain and pulse capability
- High voltage response, stable even after long dormant periods
- High capacity even at high current and low temperature
- High energy density
- No voltage delay
- Low self-discharge compatible with long shelf-life of 10+ years (less than 1% after 1 year of storage at +20 °C)

Key features
- Two M20 CV cells in 2S1P configuration and side-to-side orientation
- Safe, hermetic and non-pressurized cell construction with glass-to-metal seal, safety vent and nickel-plated steel container
- Alternative versions with M20 SV cells featuring stainless-steel container, superior resistance to corrosion and low magnetic signature available on request
- Short-circuit proof due to integrated polyswitch (8)
- Restricted for transport (class 9)
- Manufactured in Germany

Designed to meet all major quality, safety and environment standards
- Safety: IEC 60086-4
- Transport: UN 3090 and UN 3091
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications
- Tank level monitoring
- Metering

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Electrical characteristics

<table>
<thead>
<tr>
<th>[Typical values related to batteries stored up to one year at +30 °C max]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical capacity [at 150 mA, +20 °C, 4.0 V cut-off] (1)</td>
</tr>
<tr>
<td>Open circuit voltage</td>
</tr>
<tr>
<td>Nominal voltage [under 1 mA, at +20 °C]</td>
</tr>
<tr>
<td>Nominal energy [at 150 mA, +20 °C, 4.0 V cut-off voltage]</td>
</tr>
<tr>
<td>Maximum continuous discharge current (2)</td>
</tr>
</tbody>
</table>

Operating conditions

<table>
<thead>
<tr>
<th>Operating temperature range(3) &amp; Storage temperatures</th>
<th>Recommended</th>
<th>Allowable</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40 °C / +72 °C (-40 °F / +161 °F)</td>
<td>+30 °C (+86 °F) max</td>
<td>-55 °C / +90 °C (-67 °F / +194 °F)</td>
</tr>
</tbody>
</table>

Physical characteristics

- Length (max) 68 mm / 2.68 in
- Width (max) 34.5 mm / 1.36 in
- Height (max) 64.5 mm / 2.54 in
- Battery case Shrink sleeve
- Terminals Cables with optional connectors
- Battery weight 255 g
- Li metal content 7.0 g

References

| Saft part numbers (4) with JST XHP-2 connector | 4422080137 |
| with JST 03 connector                           | 4422080145 |

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(1) Can vary depending on current drain, temperature and cut-off voltage.
(2) Hold current of the polyswitch at +72 °C. Higher currents are possible for pulses, at lower temperatures or with different polyswitch types. Consult Saft.
(3) Operating temperatures up to +85 °C can be achieved. Consult Saft.
(4) Long-time storage at high temperature may affect performance. Consult Saft.
(5) Other versions with different part numbers are available on request. Consult Saft.
(6) Other protection elements can be integrated on request. Consult Saft.