2. M20 CV stick pack
Primary Li-MnO₂ battery

6 V lithium manganese dioxide battery

Saft’s M20 CV stick pack 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 longitudinal 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 *(4)*
- 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**
- Tracking systems
- Data loggers

**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] <em>(1)</em></td>
</tr>
<tr>
<td>Open circuit voltage</td>
</tr>
<tr>
<td>Nominal voltage [under 1 mA, at +20 °C]</td>
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<tr>
<td>Nominal energy [at 150 mA, +20 °C, 4.0 V cut-off voltage]</td>
</tr>
<tr>
<td>Maximum continuous discharge current <em>(2)</em></td>
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</tbody>
</table>

**Operating conditions**

- Operating temperature range *(3)*
  - -40 °C / +72 °C (-40 °F / +161 °F)
- Storage temperatures
  - Recommended: +30 °C (86 °F) max.
  - Allowable: -55 °C / +90 °C (-67 °F / +194 °F)

**Physical characteristics**

- Length [max] 128.5 mm / 5.06 in
- Diameter [max] 36 mm / 1.42 in
- Battery case Shrink sleeve
- Terminals Cables with optional connectors
- Batteryweight 260 g
- Li metal content 7.0 g

**References**

- Saft part numbers *(5)* with JST PHR-2 connector 4422080148
- Stainless steel version / 3-pol connector 4423080154

*(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.

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