2. M20 EX SV
Primary Li-MnO₂ battery

6 V lithium primary battery with ATEX/IECEx certified cells

Saft’s 2. M20 EX SV battery is based on ATEX/IECEx certified D size Li-MnO₂ cells with spiral electrode design. It is designed for integration into equipment used in Ex atmosphere at temperatures up to +72 °C.

**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)
- Superior resistance to corrosion

**Key features**
- Two ATEX/IECEx certified Saft M20 EX SV cells™ in ZS1P configuration and side-to-side orientation
- Safe, hermetic and non-pressurized cell construction with glass-to-metal seal, safety vent and stainless steel container
- Two charge protection diodes for use in type of protection “d” (flameproof enclosures) [1]
- Restricted for transport (class 9)
- Manufactured in Germany

Designed to meet all major quality, safety and environment standards
- Safety: UL 1642 [File MH 61234], IEC 60086-4
- Transport: UN 3090 and 3091
- ATEX/IECEx: IEC 60079-0 and -11 II
- Quality: IEC 80079-34, ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

**Typical applications**
- Tracking of dangerous goods
- Data loggers in Ex atmosphere
- Gas and oil tank level monitoring

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**Electrical characteristics**

| [Typical values related to batteries stored up to one year at +30 °C max] |
|---------------------------------|------------------|
| Typical capacity [at 150 mA, +20 °C, 4.0 V cut-off] [1] | 12.4 Ah |
| Open circuit voltage [2] | 6.4 V |
| Nominal voltage [under 1 mA, at +20 °C] | 6.0 V |
| Nominal energy [at 150 mA, +20 °C, 4.0 V cut-off voltage] | 70 Wh |
| Pulse capacity [2][3] | Up to 8 A |
| Maximum continuous discharge current [2][3] | 3.5 A |

**Operating conditions**

<table>
<thead>
<tr>
<th>Operating temperature range</th>
<th>-40 °C / +72 °C [-40 °F / +161 °F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage temperatures</td>
<td>Recommended +30 °C (+86 °F) max</td>
</tr>
</tbody>
</table>

**Physical characteristics**

<table>
<thead>
<tr>
<th>Length [max]</th>
<th>70.5 mm / 2.78 in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width [max]</td>
<td>34.5 mm / 1.36 in</td>
</tr>
<tr>
<td>Height [max]</td>
<td>66.5 mm / 2.64 in</td>
</tr>
<tr>
<td>Battery case</td>
<td>Shrink sleeve</td>
</tr>
<tr>
<td>Terminals</td>
<td>Cables with optional connectors</td>
</tr>
<tr>
<td>Battery weight</td>
<td>252 g</td>
</tr>
<tr>
<td>Li metal content</td>
<td>7.0 g</td>
</tr>
</tbody>
</table>

**References**

Saf part No. [5] with 2-pol MOLEX 502380-0200 connector 44231R0150

[2] Limitation of the max. current to a lower level, e.g. by a series resistor, may be necessary depending on the electrical properties of the device, type of protection, desired level of protection and explosion group.
[5] Other versions with different part numbers are available on request. Consult Saft.
[6] More information about the ATEX/IECEx certificates of the cells can be found in the data sheet of the Saft M20 EX SV cell.

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