M 20 HR
Primary Li-MnO₂ cell

Saft’s M 20 HR cell is ideally suited for applications requiring high discharge, continuous or pulse power with stable voltage under high discharge in - 40°C / + 72°C environment.

Benefits
- High drain / high pulse capability
- High voltage response, stable during most of the lifetime of the application even after long dormant periods
- High capacity at high current and low temperature
- Low self-discharge compatible with long operating life (less than 1% after 1 year of storage at + 20°C)
- Superior resistance to corrosion
- Low magnetic signature

Key features
- Spiral construction
- Hermetic construction with glass-to-metal seal
- Stainless steel container
- Integrated safety vent
- Non-corrosive electrolyte
- Non-pressurized at room temperature
- Restricted for transport (Class 9)
- Made in Germany

Designed to meet all major quality, safety and environmental standards
- Safety: UL 1642 (File MH 61234), IEC 60086-4
- Transport: UN 3090 and UN 3091
- Military: VG96915 part 2 and part 154
- Quality: ISO 9001, Saft World Class Continuous program
- Environment: ISO 14001

Typical applications
- Radio communications
- Alarms and security systems
- ELTs, EPIRBs
- Tracking systems
- M2M communication
- Medical devices
- Oil & gas applications

Electrical characteristics

<table>
<thead>
<tr>
<th>[Typical values relative to cells stored up to one year at + 30°C max]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal capacity (at 0.5 A, + 20°C, 2.0 V cut-off) (1)</td>
</tr>
<tr>
<td>Open circuit voltage (at + 20°C)</td>
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<tr>
<td>Nominal voltage (under 1 mA at + 20°C)</td>
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<tr>
<td>Nominal energy (at 0.5 A, + 20°C, 2.0 V cut-off)</td>
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<tr>
<td>Pulse capacity (2)</td>
</tr>
<tr>
<td>Recommended maximum continuous discharge current (3)</td>
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</tbody>
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Operating conditions

| Operating temperature range (4)                        | - 40°C / + 72°C [-40°F / +161°F] |
| Storage temperatures Recommended                      | + 30°C [+ 86°F] max |
| Allowable (5)                                          | - 55°C to + 85°C [- 67°F / + 185°F] |

Physical characteristics

| Diameter (max)                                         | 34.2 mm (1.35 in) |
| Height for the tabbed version (max)                    | 61.5 mm (2.42 in) |
| Height for the version with +/- end caps (max)        | 62.5 mm (2.46 in) |
| Typical weight                                         | 117 g |
| Li metal content                                       | approx. 3.6 g |

(1) Dependent upon current drain, temperature and cut-off.
(2) Dependent upon pulse characteristics, temperature, cell history and application. Higher rates are available under certain circumstances.
(3) To maintain cell heating within safe limits. Battery packs may imply lower level of maximum current and may request specific thermal protection. Consult Saft.
(4) Operating temperatures up to + 85°C can be achieved. Consult Saft.
(5) Long time storage at high temperature may affect performances. Consult Saft.
Termination & part numbers

1. + tab (radial tab on positive terminal): 4142280403
2. C tab (radial tabs on positive & negative terminals): 4142280203
3. Z tab (radial tabs on positive & negative terminals): 4142280703
4. +/- end caps (incl. PTC): 4142287103
5. Other configuration available on request

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).
- Do not obstruct venting mechanism.