

Saft M 52 EX SV

Primary Li-MnO₂ cell

3 V lithium manganese dioxide C-size spiral cell certified for ATEX applications

Saft's M 52 EX SV cell is ideally suited for applications requiring high energy and long operating life, with stable voltage under high discharge in - 40°C / + 72°C environment. The cell is certified according to ATEX and IECEx for use in potentially explosive atmospheres.

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 and very high pulse capability
- Low self-discharge compatible with long operating life (less than 1% after 1 year of storage at + 20°C)
- ATEX and IECEx certified
- 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
- ATEX/IECEx: IEC 60079-0, IEC 60079-11
- Transport: UN 3090 and UN 3091
- Military: VG96915 part 2 and part 170
- Quality: ISO 9001, Saft World Class Continuous program
- Environment: ISO 14001

Typical applications

- Smart gas meters
- Gas and oil tank level monitoring
- Leak detectors
- Portable gas detectors
- Petrochemical facilities
- Mining applications



Electrical characteristics

(Typical values relative to cells stored up to one year at + 30°C max)

| | |
|---|-------------|
| Nominal capacity (at 60 mA, + 20°C, 2.0 V cut-off) ⁽¹⁾ | 5.6 Ah |
| Open circuit voltage (at + 20°C) | 3.2 V |
| Nominal voltage (under 1 mA at + 20°C) | 3.0 V |
| Nominal energy (at 60 mA, + 20°C, 2.0 V cut-off) | 16 Wh |
| Pulse capacity ⁽²⁾ | up to 4.0 A |
| Recommended maximum continuous discharge current ^{(2) (3)} | 2.0 A |

Operating conditions

| | | |
|-----------------------------|------------------------------------|-------------------------------------|
| Operating temperature range | - 40°C / + 72°C (- 40°F / + 161°F) | |
| Storage temperatures | Recommended | + 30°C (+ 86°F) max |
| | Allowable ⁽⁴⁾ | - 55°C to + 90°C (- 67°F / + 194°F) |

ATEX properties

| | | | |
|--|------------------------------------|------------------|------------------|
| Cell marking | II 2G | | |
| EC-type examination certificate nb | BVS 13 ATEX E 035 U ⁽⁵⁾ | | |
| IECEx certificate of conformity nb | IECEx BVS 13.0053 U ⁽⁵⁾ | | |
| | + 23°C (+ 73°F) | + 40°C (+ 104°F) | + 72°C (+ 161°F) |
| Short circuit current (max) | 70 A | 72 A | 82 A |
| Ri (min) | 48 m Ω | 41 m Ω | 39 m Ω |
| Max surface temperature ⁽⁶⁾ | + 100 °C | + 101°C | + 108°C |
| Temperature class | T4 | T4 | T4 |

Physical characteristics

| | |
|-------------------------------------|-------------------|
| Diameter (max) | 26.2 mm [1.03 in] |
| Height for the tabbed version (max) | 51.5 mm [2.03 in] |
| Typical weight | 58 g |
| Li metal content | approx. 1.6 g |

⁽¹⁾ Dependent upon current drain, temperature and cut-off.

⁽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 and the desired level of protection (Ia, Ib, Ic) and the explosion group (IIA, IIB, IIC).

⁽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⁾ Long time storage at high temperature may affect performances. Consult Saft.

⁽⁵⁾ Owner of the certificate: Friemann & Wolf Batterietechnik GmbH.

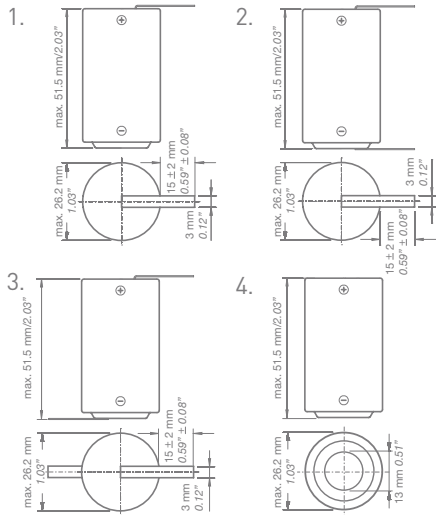
⁽⁶⁾ During the 3 mΩ short-circuit test according to IEC 60079-11.



SAFT

Termination & part numbers

- 1. + tab (radial tab on the positive terminal): 4142170403
- 2. C tab (radial tabs on the positive & negative terminals): 4142170203
- 3. Z tab (radial tabs on the positive and negative terminals): 4142170703
- 4. End caps: 4142177103



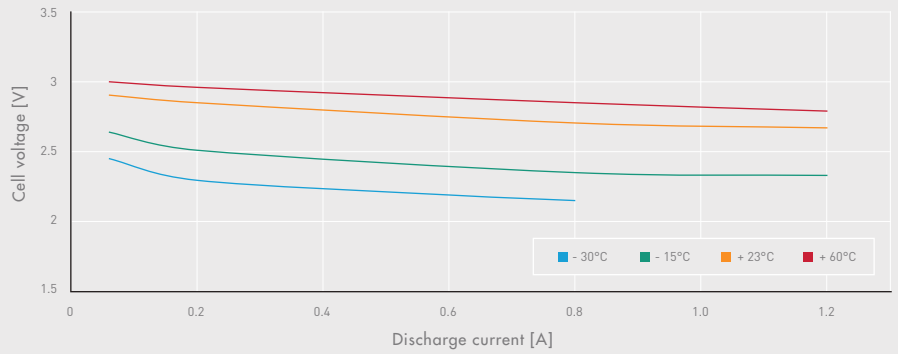
Storage

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

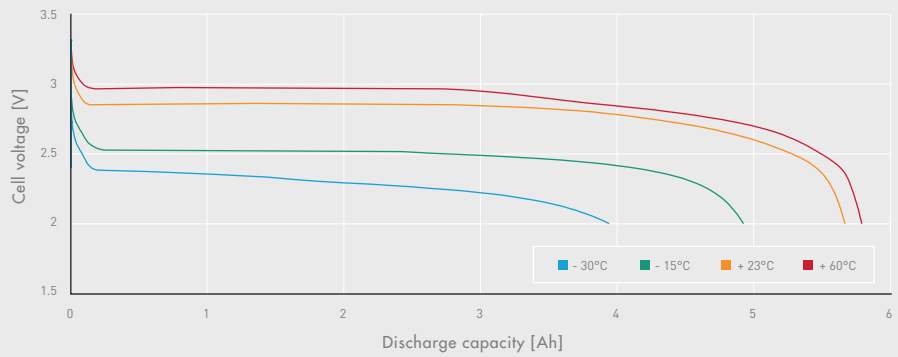
Warning

- 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.

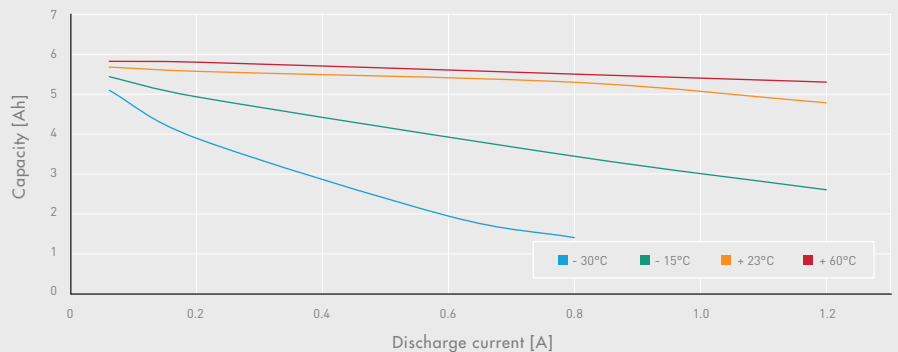
Mid-discharge voltage vs. current at various temperatures



Discharge curves at 200 mA at various temperatures



Capacity vs. current at various temperatures



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