

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 12609)
- IEC 60079-0, IEC 60079-11
- Transport: UN 3090 and UN 3091
- Military: VG96915 part 2 and part 154
- Quality: IEC 60086-4, 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 150 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 150 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		
IECEx certificate of conformity nb	IECEx BVS 13.0053 U		
	+ 20°C (+ 68°F)	+ 40°C (+ 104°F)	+ 70°C (+ 158°F)
Short circuit current (max)	54 A	57 A	70 A
Ri (min)	54 m Ω	49 m Ω	42 m Ω
Temperature rise (max)	+ 104 °C	+ 109°C	+ 113°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.

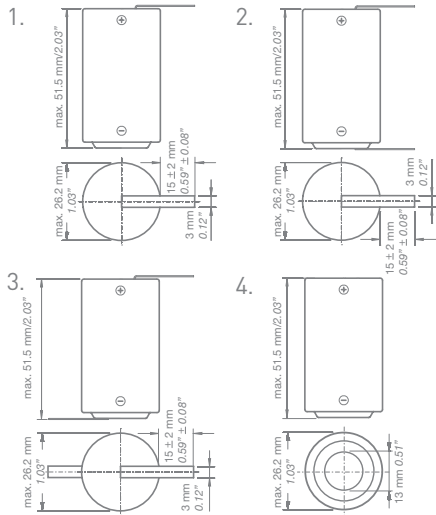
⁽⁴⁾ Long time storage at high temperature may affect performances. Consult Saft.



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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



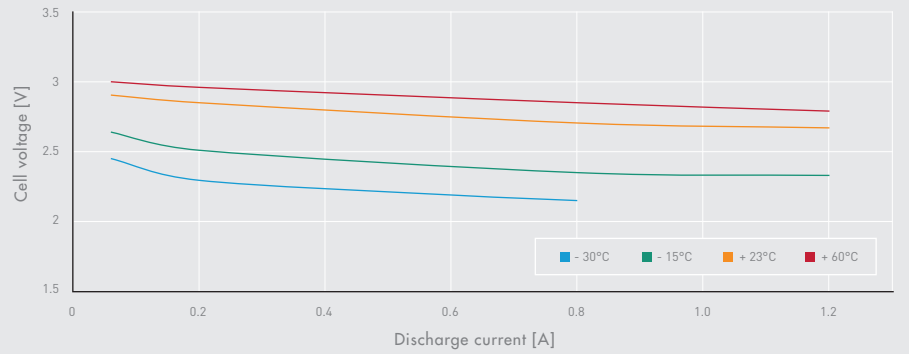
Storage

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

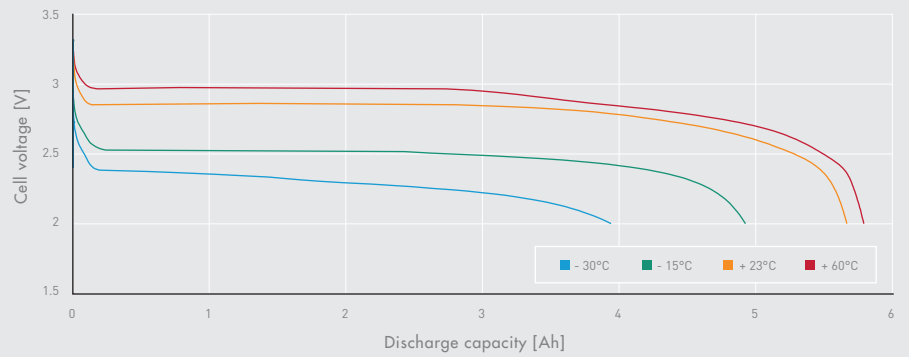
Warning

- 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.

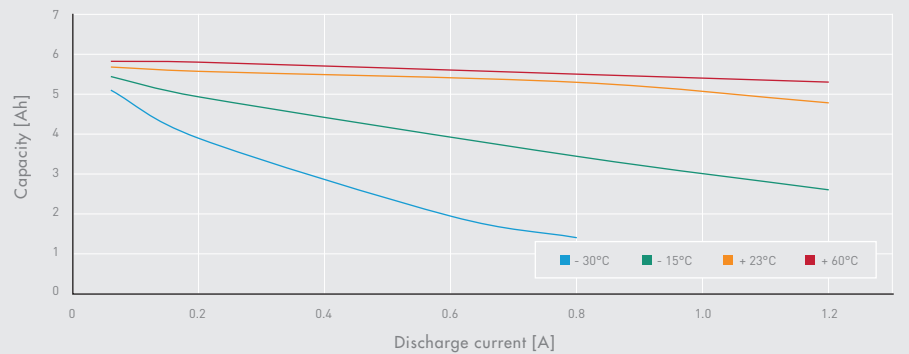
Mid-discharge voltage vs. current at various temperatures



Discharge curves at 200 mA at various temperatures



Capacity vs. current at various temperatures



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