

# 4.M52 cube pack

## Primary Li-MnO<sub>2</sub> battery

12 V lithium manganese dioxide battery

Saft's 4.M52 battery is based on C size Li-MnO<sub>2</sub> 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)
- Superior resistance to corrosion
- Low magnetic signature

### Key features

- Four M52 cells in 4S1P configuration and side-to-side quadratical arrangement
- Safe, hermetic and non-pressurized cell construction with glass-to-metal seal, safety vent and stainless steel container
- Short-circuit proof due to integrated polyswitch<sup>(6)</sup>
- 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 UN 3091
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

### Typical applications

- Metering



### Electrical characteristics

(Typical values related to batteries stored up to one year at +30 °C max)

Typical capacity (at 60 mA, +20 °C, 8.0 V cut-off) <sup>(1)</sup>	5.6 Ah
Open circuit voltage	12.8 V
Nominal voltage (under 1 mA, at +20 °C)	12.0 V
Nominal energy (at 60 mA, +20 °C, 8.0 V cut-off voltage)	64 Wh
Maximum continuous discharge current <sup>(2)</sup>	1.2 A

### Operating conditions

Operating temperature range <sup>(3)</sup>	-40 °C / +72 °C (-40 °F / +161 °F)	
Storage temperatures	Recommended	+30 °C (+86 °F) max.
	Allowable <sup>(4)</sup>	-55 °C / +90 °C (-67 °F / +194 °F)

### Physical characteristics

Length (max)	53.0 mm / 2.07 in
Width (max)	53.0 mm / 2.07 in
Height (max)	55.0 mm / 2.17 in
Battery case	Shrink sleeve
Terminals	Cables with optional connectors
Battery weight	240 g
Li metal content	6.4 g

### References

Saft part No. <sup>(5)</sup>	without connector	4443070153
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<sup>(1)</sup> Can vary depending on current drain, temperature and cut-off voltage.

<sup>(2)</sup> Hold current of the polyswitch at +72 °C. Higher currents are possible for pulses, at lower temperatures or with different polyswitch types. Consult Saft.

<sup>(3)</sup> Operating temperatures up to +85 °C can be achieved. Consult Saft.

<sup>(4)</sup> Long-time storage at high temperature may affect performance. Consult Saft.

<sup>(5)</sup> Other versions with different part numbers are available on request. Consult Saft.

<sup>(6)</sup> Other protection elements can be integrated on request. Consult Saft.

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