

3.M20

Primary Li-MnO₂ battery

9 V lithium manganese dioxide battery

Saft's 3.M20 battery is based on D size Li-MnO₂ 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

- Three M20 cells in 3S1P configuration and side-to-side orientation
- Safe, hermetic and non-pressurized cell construction with glass-to-metal seal, safety vent and stainless steel container
- Alternative versions with M20 CV cells having nickel-plated steel containers available on request
- Short-circuit proof due to integrated polyswitch⁽⁴⁾
- 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
- Military: VG96915 parts 2 and 154
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Tracking systems



Electrical characteristics

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

Typical capacity (at 150 mA, +20 °C, 6.0 V cut-off) ⁽¹⁾	12.6 Ah
Open circuit voltage	9.6 V
Nominal voltage (under 1 mA, at +20 °C)	9.0 V
Nominal energy (at 150 mA, +20 °C, 6.0 V cut-off voltage)	108 Wh
Maximum continuous discharge current ⁽²⁾	2.0 A

Operating conditions

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

Physical characteristics

Length (max)	103.4 mm / 4.07 in
Width (max)	34.6 mm / 1.36 in
Height (max)	66.0 mm / 2.60 in
Battery case	Shrink sleeve
Terminals	Cables with optional connectors
Battery weight	375 g
Li metal content	10.5 g

References

Saft part numbers ⁽⁵⁾	with JST PHR-2 connector	4432080143
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⁽¹⁾ Can vary depending on current drain, temperature and cut-off voltage.

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

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

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

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

⁽⁶⁾ Other protection elements can be integrated on request. Consult Saft.

Saft

12, rue Sadi Carnot
93170 Bagnole-France
Tel.: +33 1 49 93 19 18
www.saftbatteries.com

Friedmann & Wolf
Batterietechnik GmbH
Industriestr. 22,
63654 Büdingen, Germany
Tel.: +49 (0) 6042 954 150
www.friedmann-wolf.de

Doc N° 31143-2-0416
Edition: April 2016

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Published by the Communication Department

