

3.M20 EX SV

Primary Li-MnO₂ battery

9 V lithium primary battery with ATEX/IECEX certified cells

Saft's 3.M20 EX SV battery is based on ATEX/IECEX certified D size Li-MnO₂ cells with spiral electrode design. It is designed for integration into intrinsically safe equipment used in Ex atmosphere at temperatures up to +72 °C.

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
- 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

Key features

- Three ATEX/IECEX certified Saft M20 EX SV cells⁽⁵⁾ 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
- Pack assembly with minimum separation distances and materials according to IEC 60079-11⁽⁶⁾
- ATEX/IECEX certified fuse⁽⁷⁾
- 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 3091
- ATEX/IECEX: IEC 60079-0 and -11⁽⁶⁾
- Quality: IEC 80079-34, ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Tracking of dangerous goods
- Data loggers and wireless automation in Ex atmosphere
- Gas and oil tank level monitoring



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⁾	12.4 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)	105 Wh
Maximum continuous discharge current ⁽²⁾	1.0 A

Operating conditions

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

Physical characteristics

Length (max)	105.0 mm / 4.14 in
Width (max)	36.5 mm / 1.44 in
Height (max)	67.0 mm / 2.64 in
Battery case	Shrink sleeve
Terminals	Cables with optional connectors
Battery weight	380 g
Li metal content	10.5 g

References

Saft part No. ⁽⁴⁾	with 1 A fuse, no connector	4432180146
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⁽¹⁾ Can vary depending on current drain, temperature and cut-off voltage.

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

⁽³⁾ Long-time storage at high temperature may affect performance. Consult Saft.

⁽⁴⁾ Other versions with different part numbers are available on request. Consult Saft.

⁽⁵⁾ More information about the ATEX/IECEX certificates of the cells can be found in the data sheet of the Saft M20 EX SV cell.

⁽⁶⁾ Note that the 3.M20 EX SV battery is not ATEX/IECEX certified. Based on the ATEX/IECEX certificates of the cells, certification of the customized pack is usually done as part of the equipment in which the battery is to be integrated.

⁽⁷⁾ Different or additional current limiting elements can be integrated on request. Consult Saft.

Saft

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Doc N° 31144-2-0416
Edition: April 2016

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Published by the Communication Department

