

# 2.M20 EX SV

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

6 V lithium primary battery with ATEX/IECEX certified cells

Saft's 2.M20 EX SV battery is based on ATEX/IECEX certified D size Li-MnO<sub>2</sub> cells with spiral electrode design. It is designed for integration into 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
- 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

### Key features

- Two ATEX/IECEX certified Saft M20 EX SV cells <sup>[6]</sup> in 2S1P configuration and side-to-side orientation
- Safe, hermetic and non-pressurized cell construction with glass-to-metal seal, safety vent and stainless steel container
- Two charge protection diodes for use in type of protection "d" (flameproof enclosures) <sup>[7]</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 3091
- ATEX/IECEX: IEC 60079-0 and -11 <sup>[8]</sup>
- 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 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, 4.0 V cut-off) <sup>[1]</sup>	12.4 Ah
Open circuit voltage	6.4 V
Nominal voltage (under 1 mA, at +20 °C)	6.0 V
Nominal energy (at 150 mA, +20 °C, 4.0 V cut-off voltage)	70 Wh
Pulse capacity <sup>[2]</sup>	Up to 8 A
Maximum continuous discharge current <sup>[2][3]</sup>	3.5 A

### Operating conditions

Operating temperature range	-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)	70.5 mm / 2.78 in
Width (max)	34.5 mm / 1.36 in
Height (max)	66.5 mm / 2.64 in
Battery case	Shrink sleeve
Terminals	Cables with optional connectors
Battery weight	252 g
Li metal content	7.0 g

### References

Saft part No. <sup>[5]</sup>	with 2-pol MOLEX 502380-0200 connector	4423180150
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<sup>[1]</sup> Can vary depending on current drain, temperature and cut-off voltage.

<sup>[2]</sup> 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, type of protection, desired level of protection and explosion group.

<sup>[3]</sup> To maintain cell heating within safe limits.

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

<sup>[7]</sup> Versions with other types of protection elements, e.g. fuses and/or current limiting resistors for type of protection "i" (intrinsic safety) are available on request. Consult Saft.

<sup>[8]</sup> Note that the 2.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.

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