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Технические характеристики на первичные литиевые аккумуляторные системы SEM, MR, MIRA

Primary Li-MnO₂ battery

SEM 70 battery

18 V lithium manganese dioxide (Li-MnO₂) battery

SEM 70 battery has a 6S1P configuration of D size Li-MnO₂ cells type M 20 with spiral electrode design. It is used as power source for the SEM 70 radio communication transceiver and features a proven shelf-life of 10+ years.

Benefits

- High drain and pulse capability
- High voltage response, stable even after long dormant periods
- 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)
- High energy density
- Lightweight
- Wide operating temperature range
- Superior resistance to corrosion
- Low magnetic signature

Key features

- Six M20SVBW cells (M 20 military version) in 6S1P configuration
- Safe, hermetic and non-pressurized cell construction with glass-to-metal seal, safety vent and stainless steel container
- Integrated state-of-charge indicator with LED display and push button
- Short-circuit proof due to integrated polyswitch
- Restricted for transport (class 9)
- Manufactured in Germany

Designed to meet all major quality, safety and environment standards

- Safety: UL 1642 (File MH 46385), IEC 60086-4
- Military: VG 96915-158 (German military standard)
- Transport: UN 3090 and UN 3091
- Quality: ISO 9001, World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Radio communication



Electrical characteristics

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

Typical capacity (at 250 mA, +20 °C, 12.0 V cut-off) ⁽¹⁾	11.0 Ah
Open circuit voltage	19.8 V
Nominal voltage (under 1 mA, at +20 °C)	18.0 V
Nominal energy (at 250 mA, +20 °C, 12.0 V cut-off)	192 Wh
Maximum continuous discharge current ⁽²⁾	2.0 A

Operating conditions

Operating temperature range	-40 °C / +72 °C (-40 °F / +161 °F)	
Storage temperatures	Recommended	+35 °C (+95 °F) max.
	Allowable ⁽³⁾	-55 °C / +72 °C (-67 °F / +161 °F)

Physical characteristics

Length	191 mm / 7.52 in
Width	72 mm / 2.83 in
Height (max)	38 mm / 1.50 in
Battery case	Plastic hard case
Terminals	Resilient sockets
Battery weight	750 g
Li metal content	21 g

References

Part No.	4467080105
NSN (NATO Stock No.)	6135-12-309-8604

⁽¹⁾ Can vary depending on current drain, temperature and cut-off voltage.

⁽²⁾ Current limit of the polyswitch at +72 °C. Higher currents are possible at lower temperatures and for pulses. Consult .

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

Primary Li-MnO₂ battery

MR 509 battery

9 V lithium manganese dioxide (Li-MnO₂) battery

MR 509 battery has a 3S1P configuration of C size Li-MnO₂ cells type M 52 HR with spiral electrode design. It is used as power source for the MR 509 emergency radio unit in military and civil aircraft and features a proven shelf-life of 10+ years.

Benefits

- High drain and pulse capability
- High voltage response, stable even after long dormant periods
- 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)
- High energy density, lightweight
- Wide operating temperature range
- Superior resistance to corrosion

Key features

- Three M 52 HR cells in 3S1P configuration
- 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
- 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
- Military: VG 96915-180 (German military standard)
- Aviation: Certification of Approval as manufacturer of aircraft systems for the German Army (No. BAAINBw-C0303 - F01/14/01)
- Transport: UN 3090 and UN 3091
- Quality: ISO 9001, World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Emergency radio unit for aircraft



Electrical characteristics

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

Typical capacity (at 400 mA, +21 °C, 6.0 V cut-off) ⁽¹⁾	4.5 Ah
Open circuit voltage	9.9 V
Nominal voltage (under 1 mA at +20 °C)	9.0 V
Nominal energy (at 200 mA, +20 °C, 6.0 V cut-off)	42 Wh
Maximum continuous discharge current ⁽²⁾	1.5 A

Operating conditions

Operating temperature range ⁽³⁾	-40 °C / +72 °C (-40 °F / +161 °F)	
Storage temperatures	Recommended	+35 °C (+95 °F) max.
	Allowable ⁽³⁾	-55 °C / +72 °C (-67 °F / +161 °F)

Physical characteristics

Length	75 mm / 2.95 in
Width	37 mm / 1.46 in
Height (max)	54 mm / 2.13 in
Battery case	Plastic hard case
Terminals	Connecting socket
Battery weight	180 g
Li metal content	4.7 g

References

Part No.	4439270104
NSN (NATO Stock No.)	6135-12-353-2558

⁽¹⁾ Can vary depending on current drain, temperature and cut-off voltage.

⁽²⁾ Current limit of the polyswitch at +85 °C. Higher currents are possible at lower temperatures and for pulses. Consult .

⁽³⁾ Operating temperatures up to +85°C under certain conditions. Consult .⁽⁴⁾ Long-time storage at high temperature may affect performance. Consult .

Primary Li-MnO₂ battery

MIRA battery

30 V lithium manganese dioxide (Li-MnO₂) battery

MIRA battery is used as power source for the MIRA night vision system, which is a part of the missile system MILAN. It is also suitable for other military and civil applications with high power needs in -40°C/+72°C environment.

Benefits

- High drain and pulse capability
- High voltage response, stable even after long dormant periods
- 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)
- High energy density
- Superior resistance to corrosion

Key features

- Twenty M 19 HR cells with spiral design in 10S2P configuration
- Safe, hermetic and non-pressurized stainless steel cell construction with glass-to-metal seal and safety vent
- Integrated state-of-charge indicator with LED display and push button
- Short-circuit proof due to integrated polyswitch
- Charge protection diode
- 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
- Military: VG 96915-173 (German military standard)
- Transport: UN 3090 and UN 3091
- Quality: ISO 9001, World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Night vision system MIRA
- Emergency supply in submarines
- Data logger in stratospheric balloons
- "Power pack" for various needs

Electrical characteristics

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

Typical capacity (at 500 mA, +20°C/+70°F, 18.0 V cut-off) ⁽¹⁾	21.0 Ah
Open circuit voltage	33.0 V
Nominal voltage (under 1 mA at +20 °C)	30.0 V
Nominal energy (at 500 mA, +20 °C, 18.0 V cut-off) ⁽¹⁾	590 Wh
Maximum continuous discharge current ⁽²⁾	4.6 A

Operating conditions

Operating temperature range	-40°C/+72 °C (-40°F/+161°F)	
Storage temperatures	Recommended	+35°C (+95°F) max.
	Allowable ⁽³⁾	-55°C/+72°C (-67°F/+161°F)

Physical characteristics

Length	184 mm / 7.24 in
Width	72 mm / 2.83 in
Height (max)	133 mm / 5.24 in
Battery case	Plastic hard case
Terminals ⁽⁴⁾	Resilient sockets (corrosion resistant)
Battery weight	2700 g
Li metal content	66 g

References

Part No. ⁽⁴⁾	4409250141
NSN (NATO Stock No.)	6135-12-329-3740

⁽¹⁾ Can vary depending on current drain, temperature and cut-off voltage.

⁽²⁾ Current limit of the polyswitch at +72 °C. Higher currents are possible at lower temperatures and for pulses. Consult .

⁽³⁾ Long-time storage at high temperature may affect performance. Consult ⁽⁴⁾ For versions with different terminals and their part numbers, consult .

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