

# Rechargeable lithium-ion battery BA 684A

Extreme performance

The battery is assembled from MP 176065 Saft lithium-ion cells connected in series (2s1p configuration) and protected by a specific electronic monitoring circuit.



## Benefits

- Extended autonomy and life
- Wide operating temperature range
- Recommended for ruggedized designs
- Easy integration into compact and light systems
- Unrivalled low temperature performance
- Maintenance-free
- Light weight

## Key features

- Electronic protection against charger faults
- Built-in LED fuel gauge – visible at night – without any capacity loss during storage
- Compatible with Saft and other military chargers
- Excellent charge recovery after long storage, even at high temperature
- Long cycle life  
(over 70% initial capacity after 500 cycles 100% DoD)
- Made in the EU
- Restricted for transport (class 9)

## Main applications

- Combat net radios
- Tactical radios

## Electrical characteristics

Nominal voltage (under 1.35 A at 20°C)	7.5 V
Typical capacity at 20°C (under 1.35 A 5.4 V cut-off)	6.8 Ah (when charged up to 8.4 V) 6.1 Ah (when charged up to 8.2 V)

## Mechanical characteristics

Length (max)	67.4 mm (2.654 in)
Width (max)	37.1 mm (1.461 in)
Height (max including contacts)	89 mm (3.504 in)
Typical weight	450 g (15.87 oz)

## Operating conditions

Charge method	Constant Current/Constant Voltage
Max. recommended charge current	5 A at 20°C
Charge temperature range*	- 20°C to +60°C (- 4°F to + 140°F)
Time at 20°C	5 hours under 5 A constant
Max. recommended continuous discharge current	5 A at 20°C
Pulse discharge current	up to 9 A
Discharge cut-off voltage	5.4 V
Discharge temperature range	- 40°C to +70°C (- 40°F to + 158°F)

## References

High Temperature	MIL-STD 810E, 501.3 (+ 60°C)
Low Temperature	MIL-STD 810E, 502.3 (- 20°C)
Vibration	MIL-STD 810C 514.2 H
Shock	MIL-STD 810E 516.4
Salt Fog	MIL-STD 810E 509.3 I
Immersion	MIL-STD 810E 512.3
NATO Stock Number (NSN)	6140-14-529-5971
Saft's Part Number	06544W

## Compliance with military specification

\* Consult Saft for optimized charging below 0°C



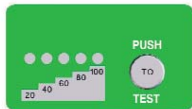
# BA 684A

## Technology

- Graphite-based anode
- Lithium Cobalt oxide-based cathode
- Electrolyte: organic solvents
- Built-in redundant safety protections
- Battery comprises two MP 176065 cells in series and features an electronic protection circuit

## Independent 5 segment fuel gauge

- Assess the battery state of charge while in storage
- Check your spare battery during or prior to use
- Make full use of available battery



## Built-in protection devices ensure safety in case of:

- Exposure to heat
- Exposure to direct sunlight for extended periods of time
- Short circuit
- Overcharge
- Overdischarge
- Shrapnel penetration

## When handling Saft MP batteries:

- Do not solder directly to battery terminals
- Do not disassemble
- Do not remove the protection circuit
- Do not incinerate

## Transportation and storage

- Store in a dry place at a temperature preferably not exceeding 30°C
- For long-term storage, keep the battery within a (30 ± 15) % state of charge

## Protection circuit

- Protection against over voltage (*resettable*)
- Protection against under voltage (*resettable*)
- Protection against over current during discharge
- End of discharge equalising

## Saft

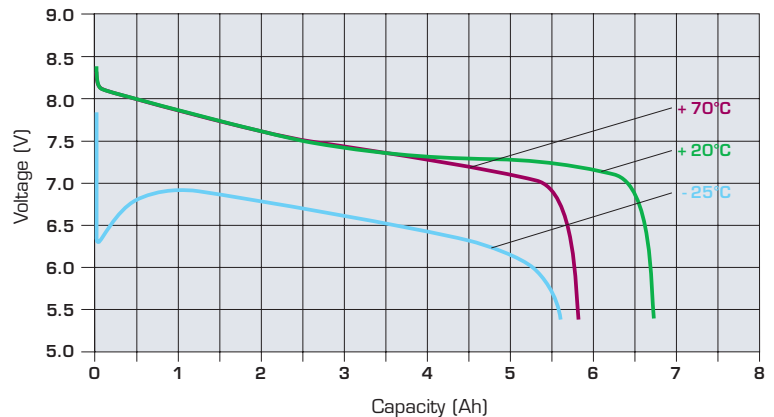
### Specialty Battery Group

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93170 Bagnolet - France  
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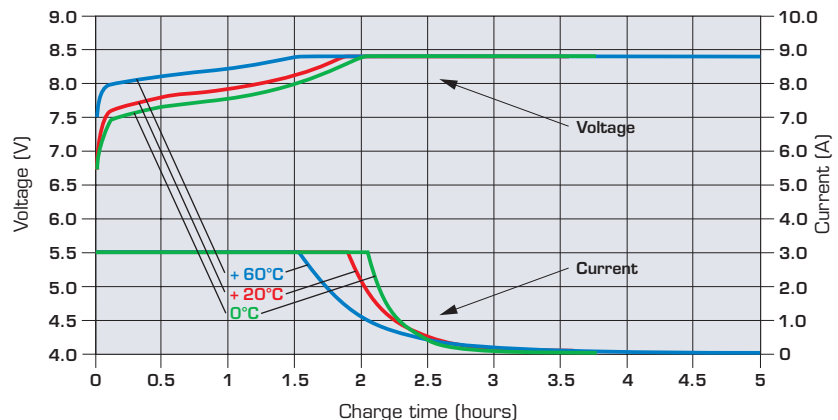
313, Crescent Street  
Valdese NC 28690 - USA  
Tel.: +1 (828) 874 41 11  
Fax: +1 (828) 879 39 81

[www.saftbatteries.com](http://www.saftbatteries.com)

## Typical discharge profile (1.35 A - C/5 rate - charge 8.4 V)



## Charge characteristics to 8.4 V versus temperature (3 A rate)



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