

# BA 685B

## Rechargeable lithium-ion battery – extreme performance

The battery consists of the assembly of two parallel branches of four MP 176065 Saft lithium-ion cells in series (4s2p configuration) and connected by a specifically designed electronic protection circuit.

### Benefits

- Extended autonomy and life for mobile systems
- 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
- Very high energy density
- Built-in LED independent 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 and designed in the EU
- Restricted for transport (class 9)

### Main applications

- Combat net radio
- Tactical radio

### Technology

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



#### Electrical characteristics

|   |  |
|---|--|
| Nominal voltage (2.4 A rate at 20°C)                  | 15.0 V   |
| Typical capacity at 20°C (under 2.4 A 10.8 V cut-off) | 13.4 Ah (when charged up to 16.8 V)<br>11.7 Ah (when charged up to 16.4 V) |

#### Mechanical characteristics

|                                 |        |
|---------------------------------|--------|
| Length (max)                    | 259 mm |
| Width (max)                     | 79 mm  |
| Height (max including contacts) | 73 mm  |
| Typical weight                  | 1700 g |

#### Charging 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                    | 6 hours under 5 A constant   |
| Identifiant resistor            | 47.5 kΩ  |
| Recommended charger             | SAFT EcMC <sup>2</sup> 250W, EcMC <sup>2</sup> 350W with IB4 interface |

#### Discharging conditions

|  |                                  |
|--|----------------------------------|
| Max. recommended continuous discharge current* | 5 A at 20°C                      |
| Pulse discharge current                        | up to 18 A                       |
| Discharge cut-off voltage                      | 10.8 V                           |
| Discharge temperature range                    | -40°C to +70°C (-40°F to +158°F) |

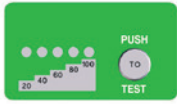
\* Consult Saft for optimized charging below 0°C



**SAFT**

## 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

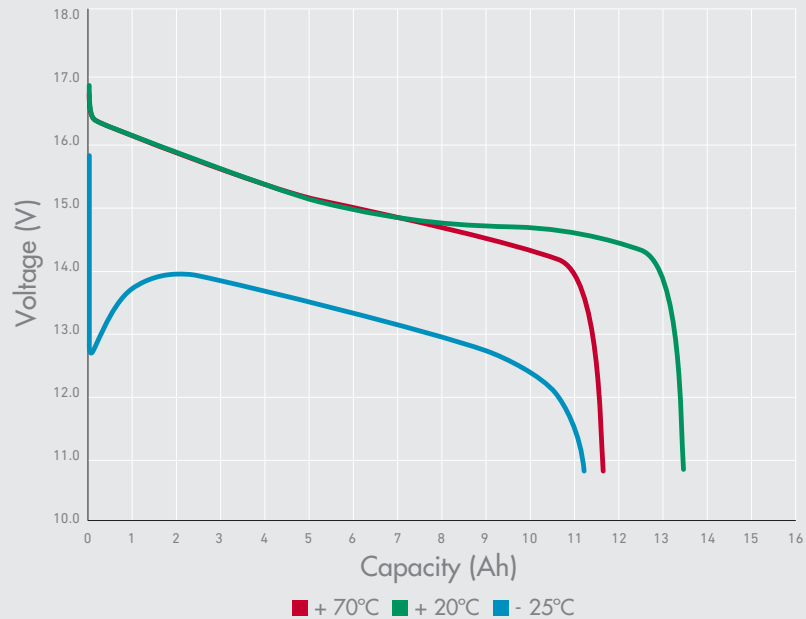
- Store in a dry place at a temperature preferably not exceeding 30°C
- For long-term storage, keep the battery within a (30 ± 15) % state of charge

## Protection circuit

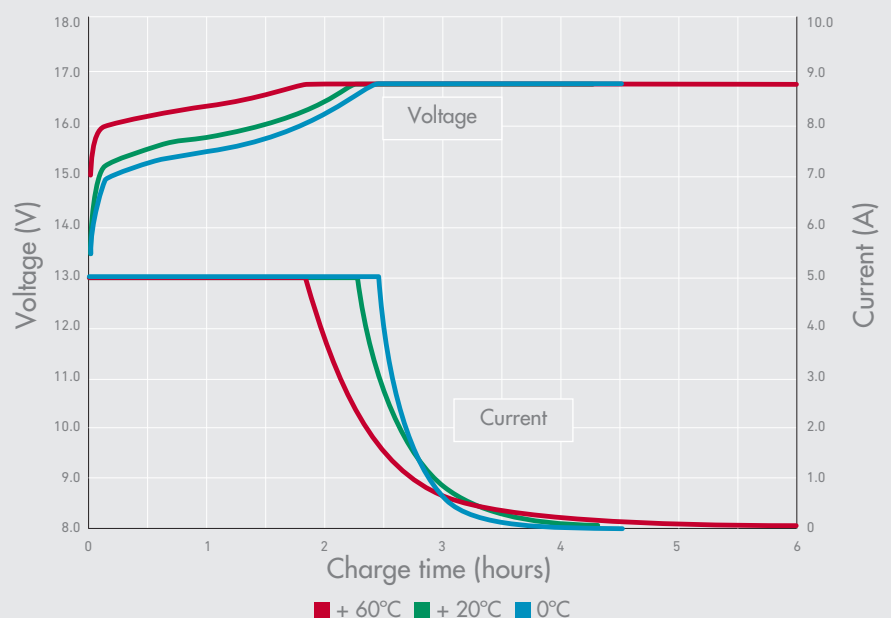
- Protection against over voltage (resettable)
- Protection against under voltage (resettable)
- Protection against over current during discharge
- Equalising cell voltages during discharge

| References              | Compliance with military specification |
|-------------------------|--|
| 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) | 6140-14-571-6261                       |
| Saft's Part Number      | 08266C                                 |

## Typical discharge profile (2.7 A - C/5 rate - charge 16.8 V)



## Charge characteristics to 16.8 V versus temperature (5 A rate)



## Saft

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