

Evolution[®] 3.9 kWh

48 V - 3.9 kWh lithium-ion battery module for telecom

With continuous improvements and based on Saft's experience with worldwide deployment, the design of Evolution[®] is improving today, making this smart battery the perfect choice for backup of telecom sites.

Evolution[®] 3.9 kWh module is suitable for all telecom sites inside or outside, on-grid or off-grid, in a hot place or a cold one, in a nearby site or a remote location. It is the perfect product to replace conventional lead batteries in existing installations.

Applications

- BTS (Base Transceiver Stations)
- BSC (Base Station Controllers)
- MSC (Mobile Switching Centers)
- Small cells for LTE (Long Term Evolution)
- Hybrid systems (with Genset)
- ANT (Access Node Terminal)
- CO (central offices)

Features

- Excellent cycling capability
- Small and lightweight product (no additional battery monitoring required)
- Large operating temperature window
- Maintenance free
- Calendar life exceeding 20 years
- Communication through RS485 / Modbus

Benefits

- Compact, low weight package
- Low TCO
- Same life as telecom equipment (no ohmic measurement and no specific gravity checks)
- Fully recyclable materials

Small and lightweight

Behind its small size, Evolution[®] brings its users big benefits. It is the perfect choice for pole mounting, for example.

- Up to four times lighter
- 50% to 85% less volume than conventional batteries, depending on application.



Nominal characteristics

Voltage (V)	48
Typical capacity C ₈ at + 25°C/+ 77°F (Ah*)	77
Rated capacity C ₈ at + 25°C/+ 77°F (Ah)	74
Typical energy C ₈ at + 25°C/+ 77°F (Wh)	3 900
Volumetric energy density (Wh/l)	153
Gravimetric energy density (Wh/kg)	130

Physical characteristics

Width	223 mm / 8.78"
Height	260 mm / 10.2"
Depth	438 mm / 17.2"
Weight	30 kg / 66 lbs
IP Level	IP43

Electrical characteristics

Voltage window (V)	42.0 to 56.0
Charge voltage range (V)	52.0 to 56.0
Max. continuous discharge current (A)	44
Typical recharge time	1h40 (up to 90% SOC)
Recommended max. charging current (A)	44
Round trip efficiency (Wh)	> 95%

Operating conditions

Calendar life (+ 20°C/+ 68°F)	20 years
Calendar life (+ 40°C/+ 104°F)	> 10 years
Cycle life (+ 20°C/+ 68°F)	80% DOD: 4 300 cycles 50% DOD: 8 200 cycles
Operating temperature	- 40°C to + 75°C - 40°F to + 167°F
Storage duration (+ 15°C/+ 35°C) (+ 59°F/+ 95°F)	12 months (no electrical maintenance)

* Depending on the application, the battery can be assembled in parallel.



SAFT

Design has evolved! Key improvements

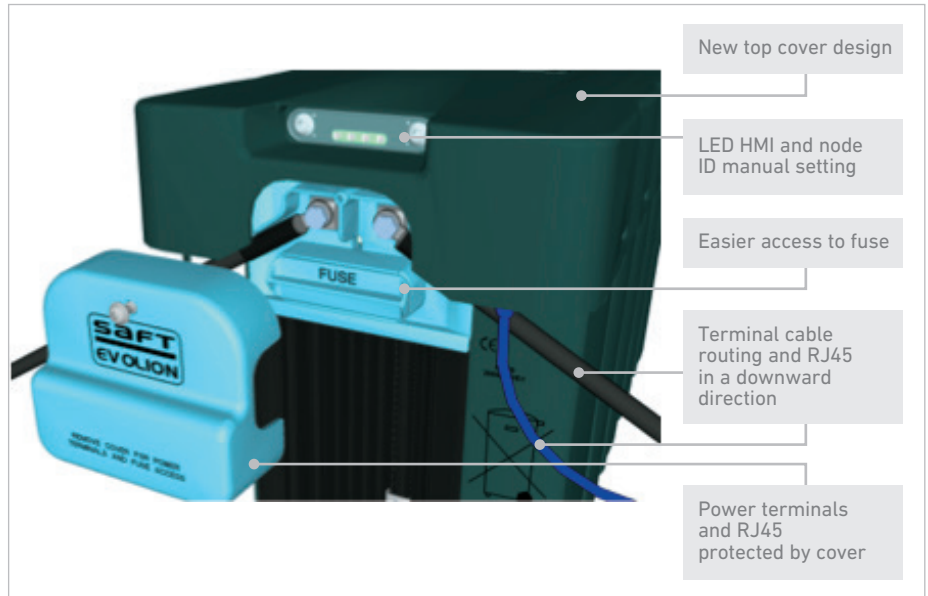
- Increased robustness to harsh environment (humidity)
- Electronics improved (reinforced power terminals)
- New software version

Same life expectancy as telecom equipment

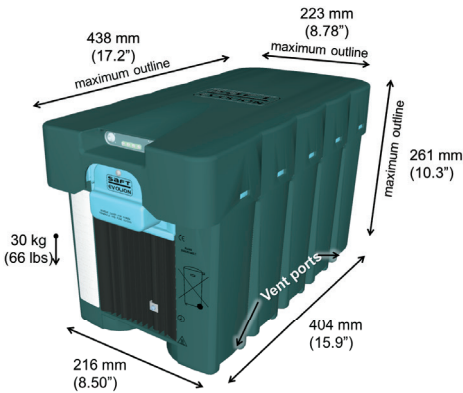
Evolution® has the same life expectancies as the telecom equipment it serves*.

- Long float life:
 - 20 years at + 20°C (+ 68°F)
 - More than 10 years at + 40°C (+ 104°F)
- High cycling life (20°C):
 - 4 300 cycles 80% DOD
 - 8 200 cycles 50% DOD

*Actual results will depend on customer specific use case



Evolution® new dimensions



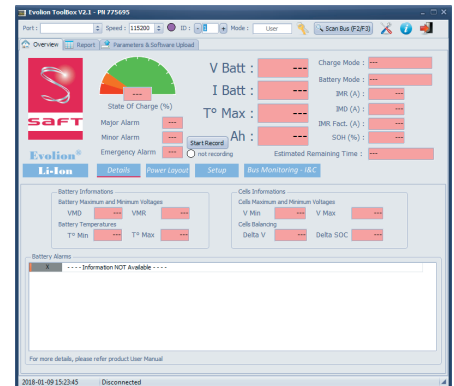
Packaging dimensions:

L 520 mm (20.47") x W 309 mm (12.16")
x H 393 mm (15.47")

Weight of full package (with Evolution®)
32.7 kg (70.5 lbs)

Smart battery with Evolution® toolbox

Evolution® toolbox is PC software that allows the operator to perform setup, commissioning, local supervision, diagnostic and status monitoring



Saft Li-ion batteries are tested to, and certified for all major telecom quality, safety and environmental standards

- Safety: UL 1642, CE marking, IEC 60950-1
- Transport: UN 3480
- Quality: ISO 9001, ISO 14001
- Environment: ETSI 300 019
- EMC : ETSI 300 386, IEC 61000
- ROHS



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