SRM+ Ni-Cd battery

The optimized high-energy railway backup battery

Saft's SRM+ nickel-based battery range assures continuity of onboard auxiliary backup applications and delivers outstanding performance, especially in arctic and desert temperature extremes.

Saft's SRM+ high performance Sintered/ PBE nickel-cadmium battery ensures reliable energy backup over a service life of more than 15 years and is fully recyclable.
The single cell design offers a high level of flexibility in battery system configuration and the package has the same installation footprint as an equivalent block battery solution.
SRM+ is purpose-designed to operate cost-efficiently and provides outstanding chargeability across a wide temperature range.

Applications

All types of trains

- Urban transport: metros, tramways, tram-trains, airport shuttles
- Regional transport: EMU, DMU (Electric and Diesel Multiple Units)
- Intercity transport: high-speed trains, electric locomotives, passenger coaches

All types of function

- Passenger safety: onboard signaling, security lighting, door control and communication networks
- Passenger comfort: ventilation, air-conditioning, lighting, Wi-Fi
- Fail-safe train start-up: pantograph lift-up, computing, electronics

Benefits

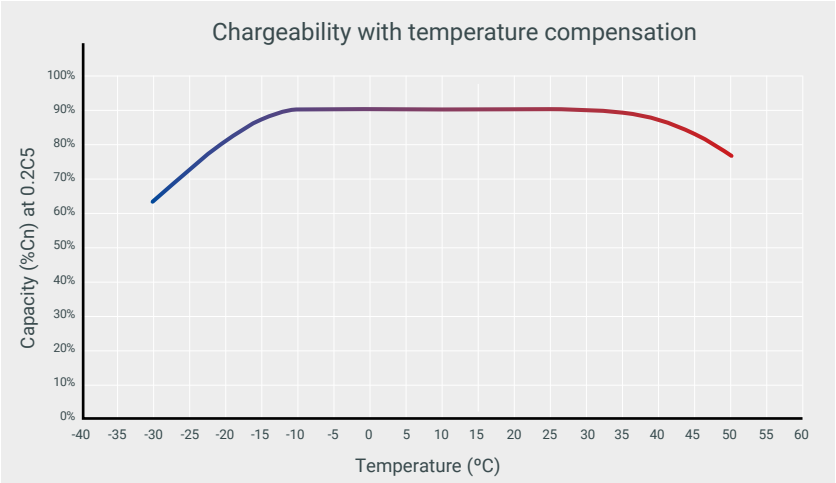
- Total reliability for high energy backup applications requiring "M" type performance, even in the toughest conditions
- Purpose designed for cost-effective solutions
- Optimized use of battery space
- Low LCC (Life Cycle Cost)
- Battery design offers complete flexibility
- Standardized or customized options available

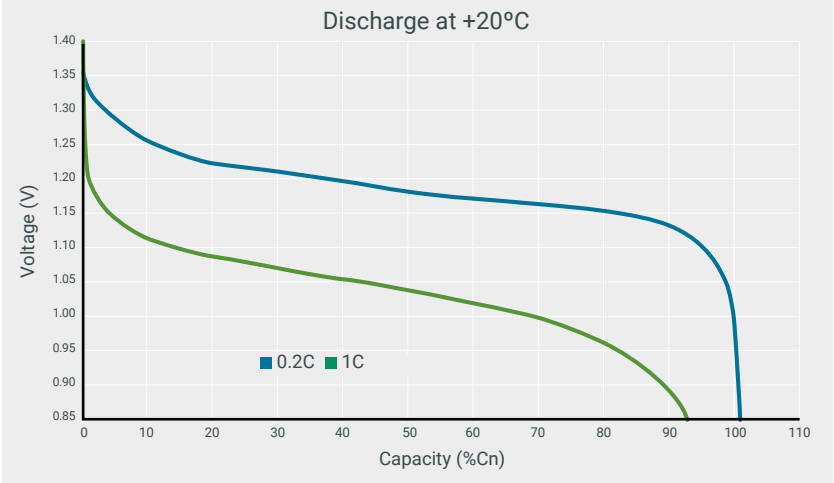
Temperature	
Operating temperature	From -30°C to +50°C
Resistance to extreme temperatures	From -50°C to +70°C
Maintenance	
Low maintenance thanks to long time between topping-up operation	2 years or more depending upon operation characteristics
Optional water filling vents allow for quick and accurate topping-up to minimize maintenance costs	Less than 10 minutes for active topping-up operation
Light and compact design	
Gain in container and battery compartment size vs conventionally sized batteries	60% depending upon requested mission profile
Wide capacity range	
Capacity range to optimize sizing to specific performances request	From 40 to 360 Ah
Available crates for easy integration & handling	For 2 to 8 cells

TotalEnergies

Features

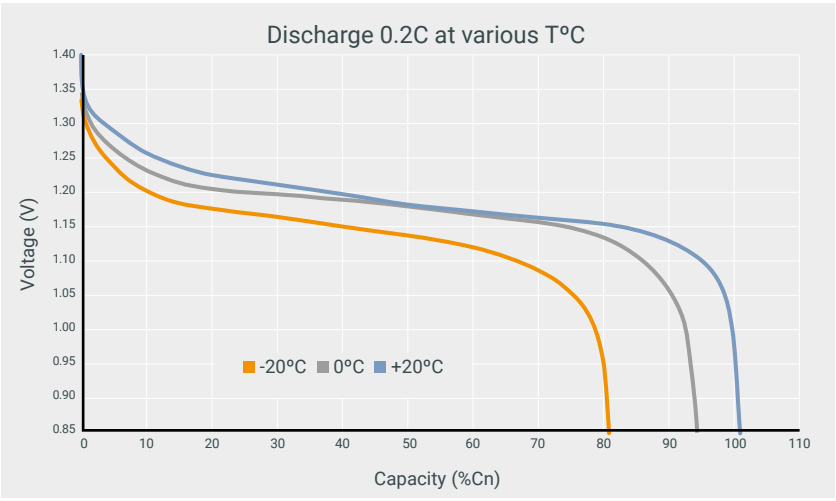
- Saft's Sintered/PBE Ni-Cd technology ensures reliable and predictable service life (over 15 years), without risk of sudden death
- Compact single cell design offers a 25% reduction in weight and installation footprint compared with SRM
- Advanced electrolyte ensures excellent charge/discharge performance
- Wide operating temperature range from -30°C to +50°C and resistance to extreme temperatures from -50°C to +70°C
- Proven resistance to shocks and vibrations
- Outstanding chargeability over an extended temperature range
- Fast recharge (90% capacity achieved in 5 hours) for rapid return to service
- Lower water consumption for optimized maintenance intervals
- Flexibility in capacity, container type and maintenance systems
  - 17 capacity steps ranging from 40 Ah to 360 Ah
  - Containers available in various plastics (FRpp, P, F2)
  - Optional centralized water filling system
- Compatible with Saft's range of standardized battery systems or can be integrated into a customized tray, individually designed, engineered and tested to meet specific application requirements





Full conformity with quality, safety and environmental standards

- Electrical: exceeds the medium "M" type requirements of IEC 60 623
- Integration: EN 50547 railway auxiliary onboard battery
- Fire & smoke: NFF 16101-16102, DIN 5510-2, UNI IEC 11170-3, UL 94-V0, NFPA 130 for ASTM E 162 and E 662
- Shocks & vibrations: IEC 61 373
- Quality: ISO 9001, ISO/TS 22163 (IRIS), Saft world class continuous improvement program
- Environment: fully recyclable, ISO 14001, RoHS, REACH



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Saft, a subsidiary of TotalEnergies
Saft Groupe S.A.S. au capital de 26 724 876 €
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Doc. n° 22001-0722-2- July 2022 - Data in this document is subject to change without notice and become contractual only after written confirmation by Saft. Photo credit: Saft - Cap 1099