



# Saft low temperature batteries keep CAF's Tallinn trams running smoothly in demanding winter conditions

CAF has fitted Saft's nickel-based SRA LT (Low Temperature) battery systems to 16 Urbos AXL trams now in operation in Tallinn, the capital of Estonia. The batteries support critical control and safety functions in extreme winter conditions where temperatures can fall to  $-50^{\circ}\text{C}$ .



## SRA LT batteries for Urbos trams - Key benefits

- Continuity of operation for auxiliary passenger safety systems
- Fail-safe start-up
- High energy density saves weight and occupies less onboard space
- Delivers greater capacity at very low temperatures
- Increased flexibility in battery sizing
- Fast and easy maintenance procedures

## New generation trams for an extended LRV network

CAF (Construcciones y Auxiliar de Ferrocarriles S.A.), Spain's largest rolling stock manufacturer, has supplied 16 new Urbos range trams to Tallinn's LRV operator. The trams are based on the Urbos AXL model, with railway wheelsets on its bogies to facilitate curve negotiation and increase the maximum service speed. The new trams form a vital part of the extension to Tallinn's LRV network which will eventually extend to the city's airport.



Case study



**SAFT**

## A new battery technology for a new low temperature challenge

CAF's Urbos trams normally rely on Saft's MRX nickel technology rail batteries. However, the extremely cold winter conditions in Tallinn, where temperatures can fall as low as - 50°C, are regarded as some of the most demanding operating conditions ever experienced on a tram project. In addition, summer temperatures can reach + 40°C. This persuaded CAF to specify Saft's SRA LT design that has been developed to perform in extreme conditions.

## Delivering enhanced capacity for more flexible battery sizing

The SRA LT batteries deliver totally reliable backup power for the auxiliary systems essential for passenger safety and fail-safe start-up on the Urbos AXL trams. The SRA LT design also offers optimized performance and high energy density for a flexible approach to battery sizing since a more compact and lighter weight battery can support the required load profile. Furthermore, the robust and reliable construction ensures a long and predictable service life.

## Tallinn Urbos AXL tram battery systems - key facts

- 16 Urbos AXL tram units
- Each onboard system comprises 20 SRA 310 LT cells
- Nickel-based battery technology operates from - 50°C to + 40°C
- Nominal voltage of 24 V
- Nominal capacity 310 Ah

*"The Tallinn trams ran smoothly throughout first winter of operation, confirming the capability of Saft's SRA LT batteries to perform in even the most challenging conditions. The Tallinn project further strengthens Saft's long term partnership with CAF in supplying on board battery systems for strategic rail projects around the world."*

Glen Bowling, Saft Group Senior VP Sales



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