



Saft rail batteries stand the test of time in starting Brazil's freight-hauling locomotives

Saft's nickel technology batteries still provide reliability after seven years in operation for engine starting for VLI's diesel-electric locomotives operating freight hauling services in Brazil.

OVERVIEW

Powering Brazil's transition to rail freight

Brazil is the world's fifth-largest nation, occupying an area of around 8.5 million square kilometers, and transportation of raw materials and goods is a vital factor in its economy. Currently, over 60 percent of the country's total cargo is transported by rail. The federal government has decided that, due to the high costs and potential for delays, the country must end its economic reliance

on road transportation and make a broad transition towards rail freight. Its goal is to achieve a 100 percent increase in rail capacity by 2022.

This transition to rail freight prompted VLI, the Brazilian company that offers logistics solutions to integrate ports, railways and terminals, to make a major investment in a new fleet of GT46AC

meter-gauge locomotives. VLI regards dependable engine starting as a critical factor in ensuring the reliability of its services. That is why it specified Saft SRX battery systems for onboard starting power as well as the backup energy to support critical electrical systems. Seven years on from entering service, the Saft batteries are still going strong.

GT46AC locomotives



52 GT46AC locomotives



Locomotives manufactured by EDM (Progress Rail) entered service in 2013



Each locomotive is fitted with a 16-cylinder 185.6 liter diesel engine

The critical need to start first-time, every time

Reliable engine starting is vital for VLI. A locomotive that stops and then fails to restart, especially in a remote region of Brazil, can result in severe disruption to services.

Therefore, VLI decided to explore alternatives to traditional lead-acid batteries that suffer from a short lifetime (around 3 years in this application) as well as sudden, unexpected failure.

Starting battery requirements

- Nominal voltage 64 V
- Starting inrush current is 1,450 A for 1 second, followed by a cranking current of 650 A for 10 seconds
- Between 6 to 8 starts per daily shift
- Provide backup power for critical onboard systems, ranging from 15 A for three hours to 2 A for 24 hours
- Maintain engine starting capability following a backup period

«Our vision is to transform logistics in Brazil. Saft's SRX batteries are a perfect fit for that vision as they ensure totally reliable starting that ensures our locomotives are never stranded while offering an optimized Life Cycle Cost. The batteries continue to offer exceptional performance, even after more than seven years. That confirms we made the right decision to switch from lead-acid to Saft's nickel technology batteries.»

Emerson Torres,
Engineering process analyst at VLI

SRX batteries offer long life and high reliability

To eliminate potential starting issues, VLI specified Saft SRX nickel technology rail battery systems that ensure reliable starting of the massive diesel engines, first time, every time. This calls for the battery to deliver an initial current of 1,450 A for one second, followed by a cranking current of 650 A for 10 seconds. Typically, the engine will require starting six to eight times a day.

In addition to the starting duty, the SRX battery system provides backup energy for the locomotive, ranging from 15 A for three hours to 2 A for 24 hours. And at the end of the backup period it must still be able to start the engine.



Key benefits

- ✓ **Optimized Life Cycle Cost (LCC)**
- ✓ **Seven-year operation in this harsh application.** Tests carried out after seven years showed that the batteries still have 100% capacity available
- ✓ **15 year expected life for SRX**, in a typical locomotive under normal conditions
- ✓ **Low maintenance requirements**, with extended periods of up to six months between topping-up with water
- ✓ **High level of reliability** that reduces the risk of a locomotive being stranded due to battery failure

Want to learn more about Saft SRX batteries?

Contact Experts

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