



EURO4001 DIESEL-ELECTRIC LOCOMOTIVE

PORTREN, Uruguay

In late 2020, PORTREN, the partnership formed by Christophersen (CHR Group) and Cointer (Grupo Azvi's concessions company), acquired seven EURO4001 locomotives to transport pulp from UPM's new mill in Paso de los Toros to the port of Montevideo on a newly constructed 273 km line.

The EURO4001 locomotives offer high power and high traction capacity to move more freight on each trip, resulting in higher productivity. Specifically, in this operation, a single locomotive will transport convoys of 26 wagons loaded with pulp from Paso de los Toros to the port of Montevideo and up from Montevideo to Paso de los Toros with chemical wagons needed for the pulp process. The cargo transported per year will exceed two million tonnes of pulp.

These state-of-the-art, high-performance locomotives, the most modern in Latin America, meet the highest environmental standards. They also offer high levels of reliability and efficiency and low operating and maintenance costs. Their design has also taken into account the comfort and safety of the driver. They have a WC module and two driving cabs with ergonomically designed central desk and advanced driving assistance systems.

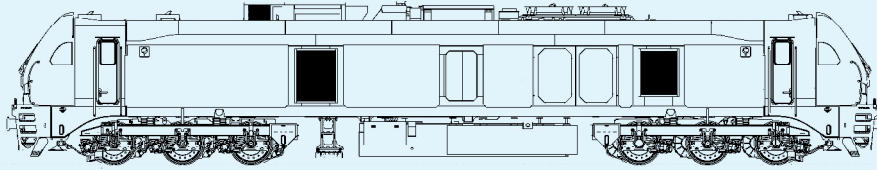
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Technical features

Technology

- Applications: freight transport
- AC drive system with IGBT, one inverter per axle
- High starting and continuous tractive effort
- Lightweight monocoque structure made of carbon steel and high yield strength steel
- Latest 3-axle bogie technology: high adhesion and low track forces
- Braking energy recovery for auxiliary power supply
- Latest generation diesel engine: low energy consumption and low emissions (EU Stage V)

Comfort / Personnel

- Two air-conditioned and ergonomically designed cabs
- High levels of comfort, safety and visibility in the cabin
- Complete thermal and acoustic cab insulation
- WC module

Reliability / Availability / Maintainability / Safety

- Based on subsystems and components of proven models such as the EURODUAL
- Remote monitoring and diagnostics systems
- High degree of redundancy for reliability
- Designed to minimise the time required for maintenance operations
- Cab and exterior lighting: LED
- Reduced environmental footprint

Vehicle data

Customer	PorTren
Operation area	Uruguay
Number of vehicles	7
Commissioning	2023
Locomotive type	Diesel-electric
Track gauge	1,435 mm
Axle arrangement	Co'Co'
Diesel engine	CAT C175-16, Stage V
Diesel engine power	2.800 kW
Transmission	AC/AC
Starting tractive effort	500 kN
Continuous tractive effort	430 kN
Signalling system	ETCS
Fuel tank	6500 l
Urea tank	800 l
Maximum speed	120 km/h
Brake system	Mechanical: pneumatic Dynamic: regenerative/ rheostatic Two distributors, one per bogie
Suspension	Primary: coil springs Secondary: rubber-metal springs Vertical and horizontal dampers