Wabtec CORPORATION

BATTERY ELECTRIC LOCOMOTIVE TECHNOLOGY

FLXdrive™

Wabtec is leading the transition to a low-carbon rail network with FLXdrive. The world's first heavy-haul, 100% battery-electric locomotive.

The FLXdrive heavy-haul commercial battery-electric locomotive can deliver battery capacities to meet various rail application needs. With haulage capabilities comparable to its diesel equivalent, the FLXdrive locomotive is designed to replace a diesel locomotive within a consist, unlocking new levels of operational flexibility.

The heart of the FLXdrive system is the liquid-cooled battery technology and proprietary thermal management system developed to optimize energy output and battery life. Wabtec's rail-specific battery architecture is designed to maximize safety, reliability, and performance.

In addition to the in-mission regenerative brake charging, FLXdrive locomotives feature a DC fast charging option utilizing a stationary pantograph or plug-in. Future options will include moving-charge capabilities for increased range and uninterrupted operations.

The FLXdrive's modular and scalable battery architecture is designed to integrate across multiple rail vehicles and environments, including heavy-haul, yard, regional, commuter, hybrid, and specialty locomotives.



FLX SPECS	FLXdrive 2.0	FLXswitch 6-axle	FLXswitch 4-axle	EuroFLX	Eastern Australia FLX	CIS Battery Shunter	FLXhybrid
No. of axles	6	6	4	6	6	4	6
Wheel Arrangement	CoCo	CoCo	BoBo	CoCo	CoCo	BoBo	CoCo
Number of cabs	1	1	1	2	1	1	1
Max Battery Capacity *(MWh)*	8.5	4.6	2.7	1.1 to 2.3	5	2	1.15
Traction power *(MW)*	3.2	3.1	1.8	3.2 to 5	2.5	1	3.3
STE *(kN)*	890	890	640	520	600	370kN	890
Weight *(tons)*	196	189	127	126	135	96	196
OH Supply				25kV AC/15kV AC/1.5 kV DC			

LOCOMOTIVE PRODUCTS FEATURE

Safe and easy equipment access for maintenance – enhanced LOTO provisions

Battery safety design - mitigate cell failure impact & propagation

Exceptional battery capacity and power

High reliability, efficiency and tractive effort

Ultra-reliable single axle control propulsion

Rail purpose Wabtec battery and charging tech

Service proven traction components

Industry-leading manufacturing expertise

Best-in-class energy management technology

Wabtec has developed a wide product portfolio of FLX products to serve the requirements of Global Customers. For customers in North America, South America, and Western Australia, Wabtec has a suite of battery powered Heavy Haul Mainline and Switcher locomotives. These products are suitable to operate in a multi-unit or single consists featuring reliable and safe zero emissions rail solutions. Also, Wabtec has developed a range of battery and electric dual-mode locomotives for customers in regions that have overhead electric catenary systems, which can provide zero emission high traction efficiency in electrified and non-electrified networks allowing long-range operation over traction routes with mixed overhead voltages (25kv AC/15kv AC/1.5kv DC).



CONTACT

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