



In July 2005, Siemens Transportation Systems received an order for 34 diesel-electric locomotives from Lithuanian Railways (Lietuvos Geležinkeliai). The contract includes an option for a further ten vehicles.

The new locomotives are to operate on the main lines of Lithuanian Railways and will haul heavy freight trains in double running mode from the southeast of the country (Kena) in a northeasterly direction to Klaipeda or in a southwesterly direction to Kybartai. The maximum train loads planned are up to 6,000 t.

The route running from the southeast to the northwest is around 400 kilometers long, whereas the line from the southeast to the southwest is about 200 kilometers long.

The locomotives will be delivered between June 2007 and April 2009.

Technical data

Wheel arrangement	Co'Co'
Track gauge	1,520 mm
Weight	138 t
Axle load	23 t
Length over buffers	22,850 mm
Wheel diameter (new / worn)	1,100 mm / 1,020 mm
Structure clearance gauge	GOST 9238-83 / DSB 3A 16383
Maximum speed	120 km/h
Diesel engine rating	2,000 kW
Power at the wheel rim	1,600 kW
Starting tractive effort	450 kN (at 23 t axle load and $\mu_0 = 0.33$)
Electric braking power	1,600 kW / with self-loading capability
Tank volume	up to 7,000 l
Ambient temperature range	-34 °C at +40 °C
Noise	to TSI-CR (acoustics)

Diesel-electric freight locomotive Eurorunner ER20 CF

for Lithuanian Railways (LG)



The ER20 CF locomotives are based on the Eurorunner platform for diesel locomotives.

Equipment layout

The equipment installed in the machine room comprises a few, prefabricated modules. They are located in the middle of the vehicle and are easy to reach from two aisles running the whole length of the machine room.

In addition, the machine room has reserve space for extra, optional items of equipment (such as additional ATC systems, etc.).

Electrical equipment

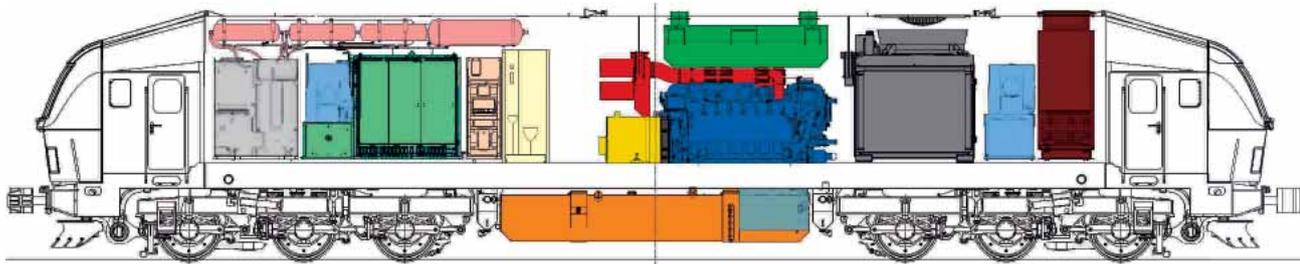
The standardized electrical block contains one pulse-width-modulated inverter per bogie (redundancy concept), one braking chopper per bogie and one integrated auxiliary converter unit.

A semi-suspended drive with its maintenance-free AC three-phase induction motor ensures by means of its low proportion of unsprung masses for reduced stressing of the track superstructure.

Bogie

In order to ensure high utilization of the adhesion coefficient, low stressing of the track during operation and a high level of passenger comfort, the bogies for the ER20 CF come with the following main assemblies:

- Complete secondary suspension with laterally flexible helical springs and spherical rubber bearings (for low track forces, good riding comfort)
- Long traction link in the low-level body-to-bogie connection for transmitting the tractive efforts between the bogie and the locomotive body (low axle weight shift)
- Wheel disk brake (low acoustic emissions)
- Wheel flange lubrication (low wheel tread wear)



- Braking resistor
- Traction motor blower
- Cooling system
- Diesel engine
- Exhaust silencer

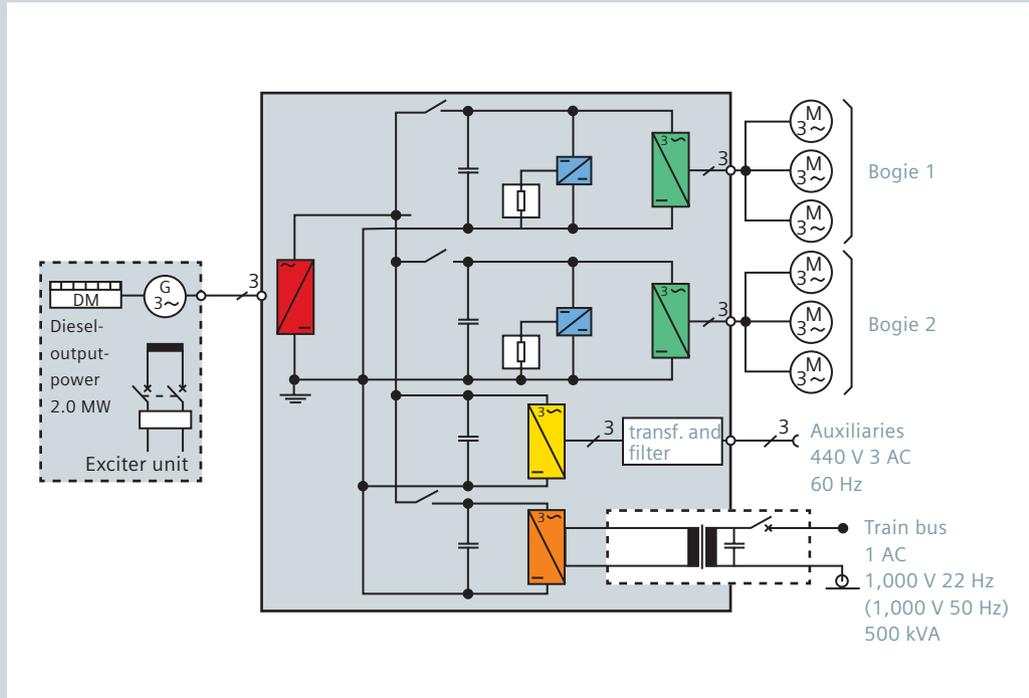
- Generator
- Combustion air intake
- WC system
- Automatic train control system
- Converter / Electrical block

- Main air reservoir
- Pneumatic brake
- Fuel tank
- Batteries

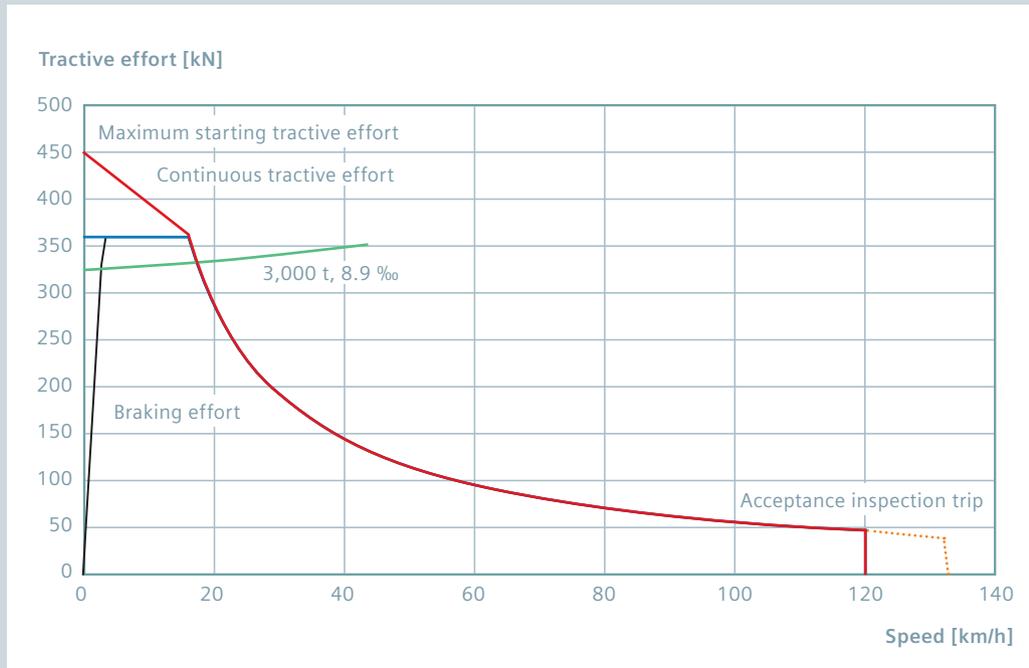
ER20 CF-LG, machine room layout



The locomotive is characterized by its high starting tractive effort, low stressing of the track, high level of passenger comfort, and low acoustic emissions. Apart from these features, other important criteria for the operator were the vehicle's low fuel consumption, low emission values and reduction of the life cycle costs.



Main circuit diagram with optionally available train bus



Tractive and braking effort diagram

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The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.