



ELECTRIC MULTIPLE UNIT FLIRT

PKP Intercity, Poland

In November 2013, PKP Intercity ordered 20 electric multiple unit FLIRTs from the delivery consortium of Stadler Polska Sp. z o.o. and Newag SA. Stadler will also be responsible for technical maintenance of the vehicles for 15 years. The trains are for the main Warsaw, Szczecin, Gdynia, Olsztyn, Katowice and Kraków lines. They are designed for a speed of 160 km/h and fitted with ETCS Level 2 automatic train control. The trains, which are totally barrier-free, feature first- and second-class compartments and a bistro. The generous, air-conditioned interior allows the passengers to travel in comfort. A visual and acoustic passenger information system provides travellers with relevant information.

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Technical features

Technology

- Lightweight car bodies in integral aluminium design in line with the latest standards for crashworthiness (EN 15227) and car body strength (EN 12663)
- Autocoupler
- Multiple unit train control with two vehicles
- Motor bogies and trailer bogies with pneumatic suspension
- Modern vehicle control system

Comfort

- Full access throughout the passenger compartments
- Bright, passenger-friendly interior
- High-floor (1'180 mm from top of rail in the entire passenger compartment)
- Spacious multifunctional zone
- Dining compartment with access for the disabled
- Eight entrance doors on each side
- HVAC for passenger compartments and driver's cab
- Vacuum toilet system with disabled access

Personnel

- Ergonomically and comfortably designed working environment to prevent driver fatigue
- Staff compartment with private toilet and shower for bistro staff
- Train crew compartment

Reliability/Availability/Maintainability/Safety

- Modern passenger information system and video surveillance
- Ergonomic vehicle diagnostics with remote reading option to support status-based maintenance
- Redundant drive equipment with water-cooled IGBT power converters
- ETCS Level 2 and SHP automatic train control
- Complies with TSI LOC&PAS, TSI Noise, TSI SRT, TSI PRM and TSI CCS

Vehicle data

Customer	PKP Intercity S.A.
Area serviced	Poland
Gauge	1435 mm
Designation	ED160
Supply voltage	3 kVDC
Axle arrangement	Bo' 2' 2' 2' 2' + 2' 2' 2' 2' Bo'
Number of vehicles	20
Commissioning	2015
Seats	
First class	60
Second class	294
Bistro benches	8
Tip-up seats	6
Floor height	1180 mm
Entrance width	940 mm
Axial thrust	1500 kN
Length over coupling	152900 mm
Vehicle width	2820 mm
Vehicle height	4120 mm
Bogie wheelbase	
Motor bogie	2500 mm
Jacobs trailer bogie	2700 mm
Trailer bogie	2500 mm
Driving wheel diameter, new	920 mm
Carrying wheel diameter, new	760 mm (JTB)/920 mm (TB)
Continuous output at wheel	2000 kW
Max. output at wheel	3000 kW
Starting acceleration, gross	0.6 m/s ²
Maximum speed	160 km/h