



## FLIRT DIESEL-ELECTRIC MULTIPLE UNIT

### Transport for Wales

In January 2019, Stadler was awarded a contract to provide 36 three-car CITYLINK three-car tram-trains and 35 FLIRTs (fast, light, intercity and regional train). Eleven of the FLIRTs are four-car diesel-electric multiple units for operation on non-electrified lines on the South Wales Metro network. They feature diesel-electric propulsion, with the diesel motors and generators located in a powerpack, separate from passenger areas, to reduce noise and vibration. The diesel motors are equipped with the latest exhaust after treatment, which is classified as emission legislation Stage V, to keep emissions to a minimum. Complying with the latest TSI-standards, the units have been tailored to Transport for Wales' needs and designed to suit the local infrastructure. Low flooring ensures level boarding at every door to reduce dwell time and to make it easier for passengers to get on and off. All trains feature air-conditioning, areas for wheelchairs, pushchairs and bicycles, passenger information systems, and wi-fi. The FLIRT UK is part of Stadler's successful FLIRT family, which has seen more than 2,500 trains sold in 21 countries.

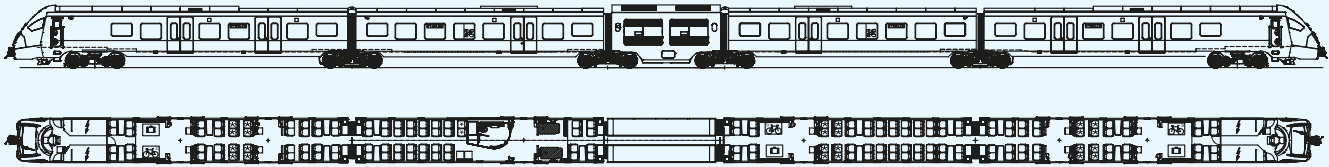
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## Technical features

### Technology

- Diesel-electric operation (diesel with newest emission standard Stage V)
- Balise-supported automated passenger door operation
- Car-bodies made of welded extruded aluminum profiles
- Front cabin made of glass-reinforced plastic
- Air-suspended motor and Jacobs bogies
- High tractive effort and acceleration
- Multiple unit traction for up to two units
- Energy-efficient driving thanks to an integrated driver advisory system

### Comfort

- Gap-free boarding and low floors in entrance areas
- Bright, passenger-friendly interior design with comfortable seats and client-specific design
- Air-conditioned passenger compartments and driver's cabs
- Reduced vibration and noise emissions during diesel operation thanks to the isolated powerpack carriage
- Controlled emission toilets, also suitable for PRM passengers
- Designated areas for wheelchairs, pushchairs and bicycles in the passenger compartments
- Passenger information systems and wi-fi

### Staffing

- Separate entry for driver
- Ergonomically-designed driver's desk
- Driver and conductor control panel for the passenger door control including communication
- TSI-compliant GSM-R train radio

### Reliability/Availability/Maintainability/Safety

- Redundant power-train with water-cooled IGBT power converters
- Powerpack with four integration diesel engines and generators
- Easy access for maintenance
- Prepared for installation of ETCS
- Vehicle control system with train bus and diagnostics computer (CAN open bus)

## Vehicle data

<b>Customer</b>	Transport for Wales
<b>Operated networks</b>	Wales and Borders
<b>Gauge</b>	1,435 mm
<b>Designation</b>	FLIRT UK
<b>Output of the diesel units</b>	1,920 kW
<b>Axle arrangement</b>	Bo'2'2'2'2'Bo'
<b>Number of units</b>	11
<b>Seats in standard class</b>	170
<b>Tip-up seats</b>	34
<b>Standing capacity</b>	188
<b>Floor height, low-floor</b>	960 mm
<b>Entrance width</b>	1,300 mm
<b>Length over coupling</b>	80,700 mm
<b>Vehicle width</b>	2,720 mm
<b>Vehicle height</b>	3,915 mm
<b>Bogie wheelbase</b>	2,700 mm
<b>Driving wheel diameter, new</b>	870 mm
<b>Carrying wheel diameter, new</b>	760 mm
<b>Maximum output at wheel</b>	1,500 kW
<b>Max. starting tractive effort</b>	160 kN
<b>Max. starting acceleration</b>	0,9 m/s <sup>2</sup>
<b>Maximum speed</b>	90 mph