



Electric low-floor multiple unit FLIRT

Sm5 trains for Junakalusto Oy, Finland

The Finnish cities Helsinki, Espoo, Vantaa and Kauniainen together with the Finnish Railways (VR) have jointly founded the company Pääkaupunkiseudun Junakalusto Oy (Junakalusto Oy), that ordered from Stadler Bussnang AG 32 four-car trains (EMU's) for the commuter traffic of Helsinki Metropolitan Area and southern Finland.

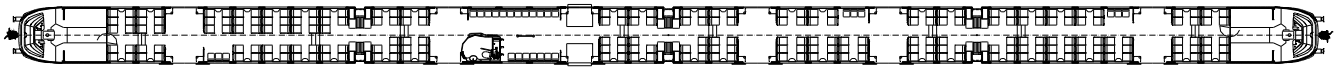
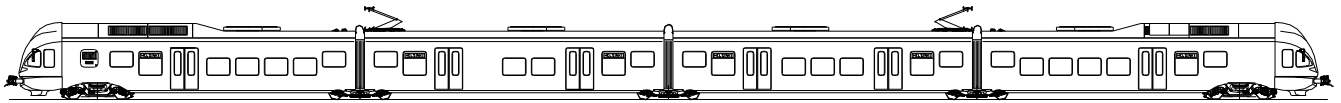
Junakalusto Oy will lease the procured trains to the Helsinki Metropolitan Area Council (YTV). VR Ltd will operate the new Sm5 trains like the other commuter trains.

Stadler's FLIRT train has been adapted for the Finnish conditions by making the necessary modifications, e.g. the car body has been adjusted to the Finnish vehicle gauge and the bogie to the Finnish track gauge. Furthermore, the trains have been designed for the extreme climatic challenges of the Finnish winter by taking the requirements to the thermal insulation etc. into account. The trains are equipped for the first time in Finland with a heat recuperation system of the HVAC.

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Technical features

- Bright, passenger-friendly interior with customized design
- Excellent visibility through the whole passenger area
- Low-floor section > 70%
- Passenger information system
- Spacious multipurpose area in entrance section
- 6 doors on each side for fast entry and exit of passengers
- Air-conditioned passenger and driver compartments
- Vacuum toilet system, also suitable for people with reduced mobility
- Ergonomically designed driver's desk
- Glass fiber reinforced plastic front cabin
- Automatic coupler
- Welded car body structure with extruded aluminum profiles
- Air-suspended bogies
- Redundant traction chain with 4 water-cooled IGBT power converters
- Vehicle control system with train bus, vehicle bus and diagnostic computer
- Video surveillance
- Multiple-traction up to three trains

Vehicle data

Customer	Junakalusto Oy, Finland
Lines operated	Helsinki district and southern Finland
Gauge	1'524 mm
Designation	Sm 5
Catenary voltage	25 kV, 50 Hz
Axle arrangement	Bo' 2'2'2' Bo'
Number of trains	32
Service start-up	2009/2010
Seating capacity	232
Fold-up seats	28
Standing capacity (4 Pers./m ²)	323 (accord. to DIN 25008)
Floor height	
Low floor	600 mm
High floor	1'120 mm
Door width	1'300 mm
Longitudinal strength	1'500 kN
Overall length	75'200 mm
Vehicle width	3'200 mm
Vehicle height	4'400 mm
Tare weight	132 t
Bogie wheelbase	
Motor bogie	2'700 mm
Trailer bogie	2'750 mm
Powered wheel diameter (new)	860 mm
Trailer wheel diameter (new)	800 mm
Continuous power at wheel	2'000 kW
Maximum power at wheel	2'600 kW
Starting tractive effort	200 kN
(up to 47 km/h)	
Max. acceleration (full load)	1.2 m/s ²
Service speed	160 km/h

