



## ELECTRIC-DIESEL MULTIPLE UNIT, SRDe 112 STAGE V, 950 MM GAUGE

ARST, Sardinia Italy

In 2019, Stadler and ARST (Azienda Regionale Sarda Trasporti) signed a Framework Agreement for the supply of 15 new Diesel-electric railcars, 950 mm gauge, designed in line with the latest safety and environmental standards. In the contract a five-year full-service maintenance program is also foreseen. Each DMU consists of two passenger cars, each equipped with a motor and a trailer bogie with a very low axle load. To enable completely safe operation, the DMUs are equipped with the SCMT automatic train protection system. Two modern, high-performance Diesel-electric propulsion units are installed above the motor bogies in order to guarantee high adhesion and optimum tractive effort in all weather conditions. The Diesel engines meet the EU Stage V emission requirements. All major components are easily accessible for routine maintenance. Low-floor access allows easy boarding from two doors on each side, even for passengers with reduced mobility. One car is equipped with a universal PRM toilet; dedicated areas are also provided for passengers with bicycles and/or wheelchairs. Dedicated sliding steps allow convenient on-board access even from 250 mm high platforms. The air conditioning system features a set of air purifiers, aimed to increase the air quality, by effectively removing harmful particles and bacteria. The train also features areas for passengers with bikes and wheelchairs. Comfortable seats, wide panoramic windows, efficient energy-saving LED lighting, 220V and USB plugs for each seats pair, a modern Wi-Fi and an integrated passenger information system, complete the feature set-up to make the passenger travel pleasant and enjoyable.

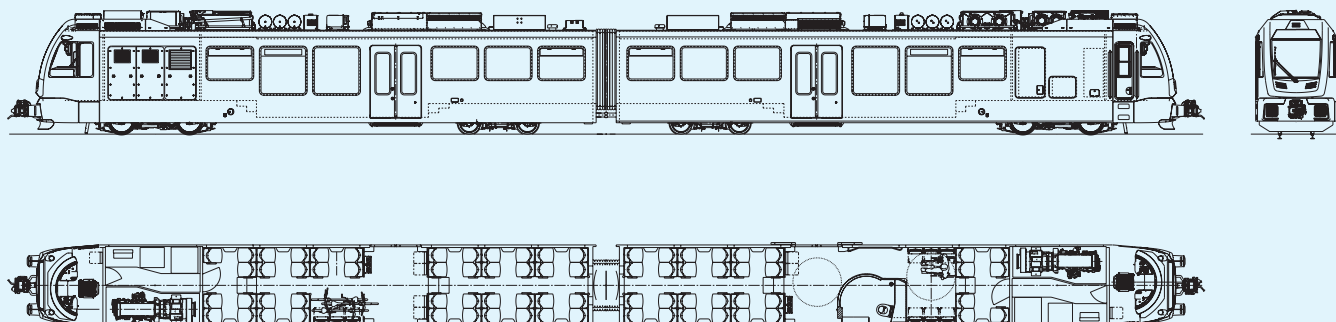
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## Technical features

### Technology

- Diesel-electric units with modern, functional, bright interior ambience, and lightweight aluminium alloy carbodies
- Embedded multiple-unit control (up to three units)
- Option to add an intermediate carriage to increase passenger capacity
- SCMT automatic train protection

### Comfort

- Large vestibules either side with low-floors provide easy access for passengers with reduced mobility and older travellers
- 1 PRM WC in low-floor section
- Independent HVAC systems in passenger carriages and driver cabs
- Air suspension for bogies to ensure maximum running quality and optimum comfort for passengers
- Efficient energy-saving LED lighting
- Passenger information system and CCTV
- Connection to on board Wifi network
- 220V and USB power outlets at seats

### Personnel

- Ergonomically designed, functional driver's cab complies with new EN 15227 crash standards and has independent access doors for the train drivers

### Reliability/Availability/Maintainability/Safety

- Two independent traction chains, each with a diesel-electric generator module, water-cooled electronic converter and high efficiency asynchronous traction motors
- Six-cylinder CUMMINS low-emission diesel engine (EU Stage V), high performance, particulate filter and SCR system
- Traction unit according to EN 45545 and UNI 11565 for fire detection and firefighting

## Vehicle data

<b>Rail operator</b>	ARST, Sardinia Italy
<b>Area of operation</b>	Monerrato Isili (starting in 2023) Sassari – Alghero Sassari – Sorso Macomer – Nuoro
<b>Gauge</b>	950 mm
<b>Drive system</b>	Diesel-electric
<b>Axle arrangement</b>	Bo' 2' + 2' Bo'
<b>Number of vehicles</b>	15
<b>Delivery</b>	2023
<b>Total seats</b>	89
<b>Tip up seats</b>	15
<b>Standing capacity (6 pers./m²)</b>	122
<b>Floor height</b>	
Low-floor at entrance	519 mm
High-floor	945/1039 mm
<b>Door width</b>	1300 mm
<b>Length at buffing gears</b>	36 480 mm
<b>Vehicle width</b>	2500 mm
<b>Vehicle height</b>	3880 mm
<b>Bogie wheelbase</b>	
Motor bogie	2100 mm
Trailer bogie	1800 mm
<b>Wheel diameter (motor bogie)</b>	810 mm (new)
<b>Wheel diameter (trailer bogie)</b>	685 mm (new)
<b>Diesel engine power (max.)</b>	2 x 410 kW
<b>Max. power to wheels</b>	4 x 145 kW
<b>Tractive effort at start-up</b>	120 kN
<b>Acceleration at start-up</b>	0.9 m/s²
<b>Designed speed</b>	120 km/h
<b>Running speed</b>	100 km/h