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Avenio Tram TZ – Munich, Germany

100% low floor trams

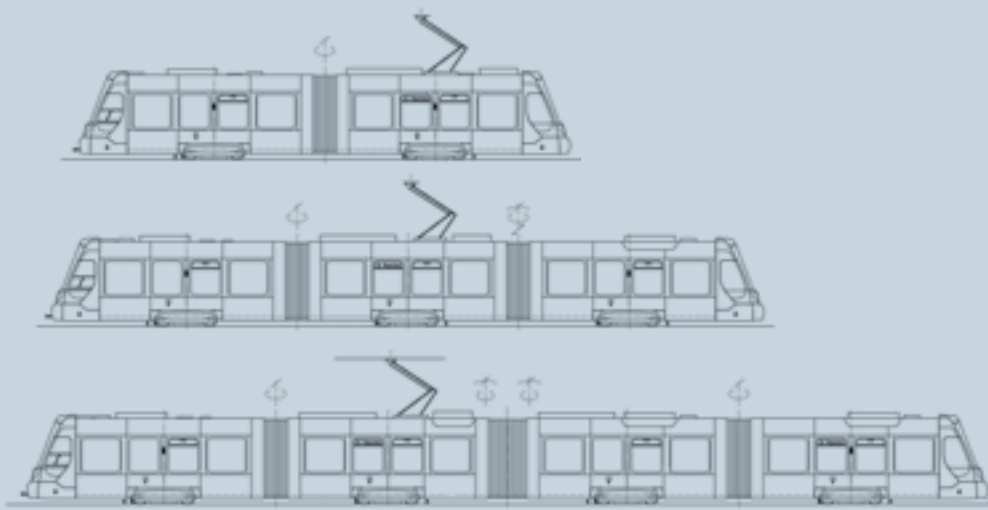


In 2015, the SWM (Munich municipal utility provider) and the SWM subsidiary MVG (Munich Transport Association) ordered an additional 22 Avenio trams from Siemens. They will supplement the eight trams of the same type which have already been running for passenger service since 2014. A further order for 73 four-car trams was placed in June 2019. That means SWM still has an option for another 51 new units, which it can order in line with requirements.

The basic order includes nine two-car trains, nine three-car trains and four four-car trains. The two-car and three-car units can be coupled to double-traction trains – the longest trams ever used in Munich at around 48 meters. An additional highlight with these trams is fully automatic coupling.

In this configuration they can accommodate around 260 passengers. The four new four-car Avenios correspond to the eight Avenios already in operation in terms of their length and capacity.

The 73 four-car trains making up the first option each provide space for about 220 passengers. Delivery of the first trains in this option is scheduled for 2021.



Vehicle data				
Vehicle type / Platform	100% low floor single-articulated tram vehicle			
Configuration	9 pieces 2-car (uni-dir.)	9 pieces 3-car (uni-dir.)	4 x 4 (uni-dir.)	
			4 piece 4-car	73 piece 4-car
Wheel arrangement	A1'Bo	2' Bo' Bo'	2' Bo' Bo' Bo'	
Car body material	Steel, CDP-coated			
Length (over coupling)	19,069 mm	27,699 mm	36,850 mm	
Width	2,300 mm			
Entrance height/floor height	300 mm			
Motor power rating	2 x 50 kW + 2 x 100 kW	4 x 100 kW	6 x 100 kW	
Power supply	DC 750 V			DC 750 V
Maximum speed	70 km/h			
Track gauge	1,435 mm			
Capacity (4 P/m ²)	103 incl. 33 seats	157 incl. 51 seats	215 incl. 65 seats	219 incl. 60 seats
Tare weight	approx. 24 t	approx. 35 t	approx. 45 t	

Technical properties/Key features

- The four-car trains in this first option will all be equipped with Siemens Tram Assistant. This collision warning system is already in successful operation in The Hague (the Netherlands), and will also be used in the German cities of Ulm and Bremen in the future.
- The new Avenio for Munich is the first Siemens tram equipped with RFID (radio-frequency identification) tags, which means operators can automatically track components equipped with these tags throughout their entire lifetime.
- A large number of doors enables fast boarding and exiting.
- The vehicles have a redundant auxiliary power supply system.
- Fully automatic coupling on the two and three-car units to form a trainset.
- One vehicle in this option will be fitted with a hybrid energy storage system, and the others will be equipped to accommodate such a system in the future.

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Otto-Hahn-Ring 6
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contact.mobility@siemens.com

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