



TRANSMASHHOLDING



ҚАЗАҚСТАН  
ТЕМІР  
ЖОЛЫ

ALSTOM

# KZ4AT

## One-section AC Passenger Locomotive



KZ4AT one-section AC passenger locomotive is developed on the basis of the «Kazakhstan Temir Zholy» technical requirements and in compliance with GOST standards and specifications.

The locomotive has a cutting edge traction system based on Alstom's technology and components produced by Alstom and Transmashholding.

KZ4AT is designed to operate in temperatures from -50 °C to +50 °C. It requires minimum maintenance and provides a high reliability level and low lifecycle cost, thanks to its modular design.

Serial production of the locomotive is done by the locomotive assembling plant Electrovoz Kurastyru Zauyty, jointly established by the Joint-Stock Company "National company «Kazakhstan Temir Zholy» (50%), Alstom (25%) and Transmashholding (25%) in Astana.

## COMPETITIVE ADVANTAGES

### Traffic optimization

- Speed of up to 200 km/h
- Longer runs between maintenance and repair
- Reduced power consumption
- Reduced locomotive maintenance costs
- Enhanced fleet management efficiency

### Modular design

- Unified platform for both freight and passenger electric locomotives
- Modular approach allows for the maintenance to be unified and spare parts management to be optimized
- On the basis of this model, a DC or dual-voltage electric locomotive can be developed

### Innovative solutions

- Asynchronous traction drive with per-wheel traction control
- Traction converter based on insulated gate bipolar transistors
- Microprocessor-based system for operation control, diagnostic and traffic safety
- Automatic train operation system using satellite navigation facilities
- Regenerative braking

### Ergonomics and comfort

The cabin design provides the following conveniences for locomotive drivers:

- Climate control system
- Seat heating
- Meals cooking and storing facilities
- Toilet

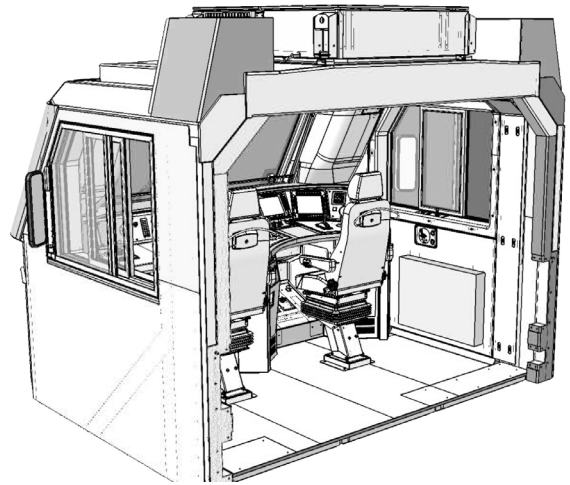
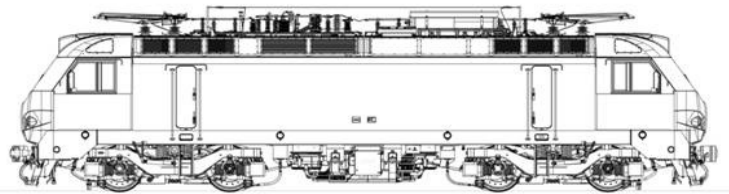
The cabin complies with all current health, ergonomics and safety regulations

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One- section AC passenger Locomotive

## BASIC CHARACTERISTICS

Wheel arrangement	Bo-Bo
Class of service	Passenger
Body	Steel
Gauge	1520 mm
Overall dimensions	According to GOST 9238-83 1-T
Weight	86 tonnes
Operating temperature range	-50°C to +50°C
Continuous shaft rating	4,800 kW
Overhead system	25 kV AC, 50 Hz
Maximum speed	200 km/h
Starting tractive power	270 kN
Regeneration braking	4400 kW
Maximum braking force	200 kN



## ALSTOM AND TRANSMASHHOLDING Joint Projects

### Mainline electric locomotive's market in CIS countries:

June 2010: 200 EP20 dual-voltage passenger electric locomotives for the Russian Railways. Designed by TRTrans. Manufactured at Novocherkassk Electric Locomotive Plant.

October 2010: 200 KZ8A freight electric locomotives and 95 passenger electric locomotives KZ4AT for Kazakhstan Temir Zholy. Designed by Alstom. Manufactured by Electrovoz Kurastyru Zauyty.

September 2011: 200 2ES5 freight electric locomotives for the Russian Railways. Designed by TRTrans. Manufactured by Novocherkassk Electric Locomotive Plant.

## CONTACT INFORMATION

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