



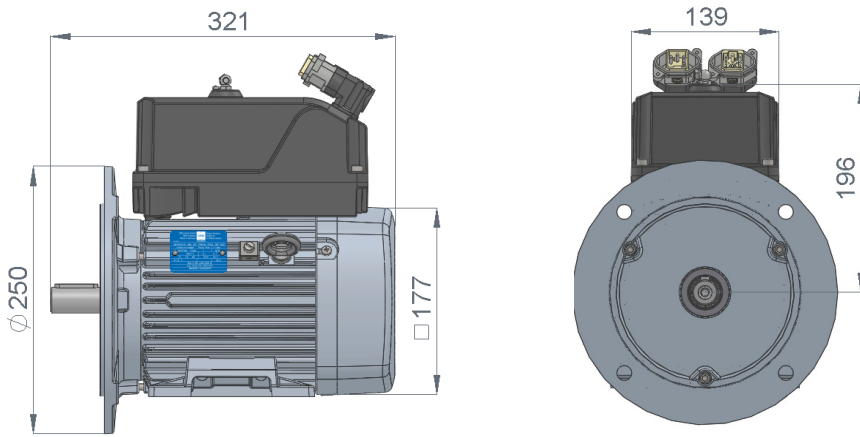
ELECTRIC DRIVES

FOR EVERY DEMAND



VEM  DRIVE
drive systems

Compact drives for
railway application



Suitable for:

- vibrational loads
- shock loads
- changing climatic environmental conditions
- increased temperature ranges

M41R 90 LY2 AST BAH 2,2 kW

Compact drive M41R . . . AST BAH for railway application

Special standards for railway applications

EN 50121-3-2	Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus;
EN 50124-1	Railway applications - Insulation coordination - Part 1: Basic requirements
EN 50125-1	Railway applications - Environmental conditions for equipment - Part 1: Rolling stock and on-board equipment
EN 50155	Railway applications - Rolling stock - Electronic equipment
EN 60077-2	Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules
EN 60349-2	Electric traction - Rotating electrical machines for rail and road vehicles - Part 2: Electronic converter-fed alternating current motors
EN 60529	Degrees of protection provided by enclosures (IP Code)
EN 61373	Railway applications - Rolling stock equipment - Shock and vibration tests

Technical specifications

- input voltage range 3 Phase AC: 360 - 440 V static
- input frequency range: 50/60 Hz +/- 10%
- output power: 2.2 – 3 kW
- speed range: 0 – 3,600 rpm
- degree of protection: IP 55 (higher on request)

Optional accessories

- PC software for parameterization and control
- connection cable with interface converter
- handheld unit
- RFID chip for data storage

Inputs, outputs, interfaces

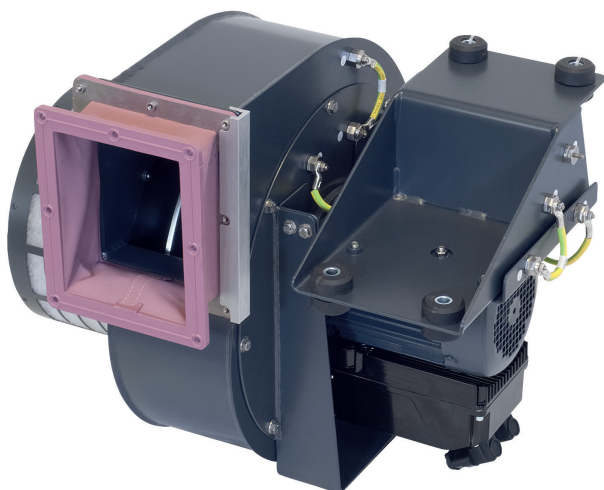
control connections	number
analog input	1
digital inputs	2
digital outputs	3
serial interface	1



Compact drives for railway applications are primarily used to drive controlled fans in trains. They don't only ensure optimal air conditioning in the passenger compartments, they are also responsible for efficient cooling of the traction motors and transformers. Like all components that are developed and manufactured for use in trains, compact drives also have to fulfill particularly high mechanical and electrical requirements. The climatic conditions as well as the vibration and shock loads are much more extreme compared to other industries. According to DIN EN 61373 they have to withstand impacts of 5 g without damage, if these components are mounted on the vehicle body of the train. The operating temperature ranges from -25 to +50°C, within the drive can be operated without power reduction, also exceeds the standard range for general applications of controlled drives.

Furthermore the drive even has to start when an ambient temperature of +70°C occurs and deliver full power for 10 minutes. When driving in or out of tunnels, temperature changes shocks up to 3 K/s also act on the motor and the control electronics, which are mounted on the underbody of the railway vehicle.

These conditions set high demands on the development and construction of the motors and the installed frequency converters, since the performance parameters have to be fulfilled not only at the nominal frequency, but also in the entire frequency range. In order to guarantee the high reliability and availability, required in the railway sector over a train lifetime of 30 years, the compact drives have to be manufactured according to special railway standards and serviced in regular maintenance cycles.



Compact drive M41R 90 LY2 AST BAH

mounted on the
Systemair centrifugal fan.
The unit is used for
cooling traction motors.



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VEM GmbH

Pirnaer Landstraße 176
01257 Dresden
Germany

VEM-Sales

High voltage department

Ph. +49 351 208-0

Fax +49 351 208-1028

Email: high-voltage@vem-group.com

Low voltage department

Ph. +49 3943 68-0

Fax +49 3943 68-2120

Email: low-voltage@vem-group.com

High voltage department, Sales traction

Hans-Georg Becker

Ph. +49 351 208-1211

Fax +49 351 208-191211

Email: hans-georg.becker@vem-group.com

Low voltage department, Sales traction

Reinhold Maleikat

Ph. +49 151 14217172

Email: reinhold.maleikat@vem-group.com

Christopher Kühn

Ph. +49 375 427-303

Email: christopher.kuehn@vem-group.com

www.vem-group.com

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