

Cooling Systems for Rolling Stock



Cooling tower for combined cooler for transformer oil and coolant

DE DIESEL-ELECTRIC-LOCOMOTIVES

AKG cooling towers installed in diesel and hybrid locomotives.



© Stadler-UK Dual

- Cooling towers consist of aluminum heat exchangers, housing, hydraulic or electric fan drive, pipe work and expansion tanks.



ELECTRIC-LOCOMOTIVES

AKG cooling towers in all sizes.



- Tailor-made cooling systems for transformers and converters with fluid pumps, speed controlled fans, tanks and pipe work.

DMU DIESEL-MULTIPLE-UNITS

AKG high performance light weight cooling systems.



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Capa Pictures-F.Clément

- Single core, side-by-side or multi layer coolers options
- Weight optimized expansion tanks and oil tanks
- Reliable axial piston pumps and motors for extended life-time
- Speed controlled fans for low energy consumption and low noise

EMU ELECTRICAL-MULTIPLE-UNITS

AKG roof cooling units for transformers and converters.



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- Low noise fans
- Designed and engineered in Germany
- Due to modular design usable in different locations of the train
- Integration of coolant pumps, expansion tanks, electrical connectors and pipe work

LRV LIGHT-RAIL-VEHICLE

AKG converter and traction motor cooling.



© by Bombardier



- High integrity design light weight cooling systems
- Roof mounted plug and play units

HST HIGH-SPEED-TRAINS

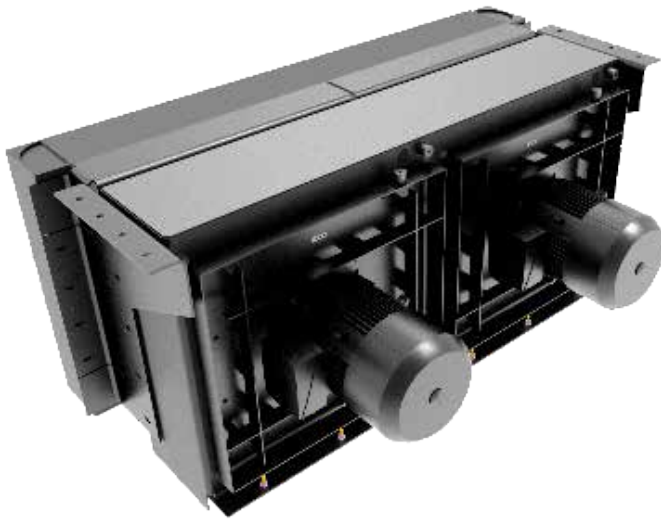
AKG cooling units for transformers and converters.



- High performance light weight cooling units
- Aerodynamically optimized
- Low sound power level
- part sets or complete functional units

STANDARD TRANSFORMER OIL COOLING

Transformer oil cooling for rolling stock is a major competence of AKG.



With our modularisation we can offer you components for

- Underfloor
- Onboard
- Roof cooling units

which fulfill the actual technical and normative railway requirements (EN 15085, EN 45545).

Numerous advantages include:

- Pre-engineered components
- Fast customizing
- Proven and tested technology
- Flexibility to combine various options
- Quick availability and delivery

The flexibility is achieved through:



TECHNICAL DATA (50 Hz, 2 POLE)

U-flow: Inlet and outlet connection on the same side

Model	Power range ^(c)	ETD	Total size ^(#) incl. header tanks (in mm)	Fan diameter	Rated power of electric motor ^(*)	Pressure drop oil side ^(c)
RT.u1	up to 88 kW	60 K	1.040 x 580 x 750	315 mm	2 · 2,0 kW	410 mbar
RT.u2	up to 126 kW	60 K	1.200 x 600 x 820	355 mm	2 · 2,8 kW	425 mbar
RT.u3	up to 174 kW	60 K	1.350 x 650 x 850	400 mm	2 · 4,4 kW	480 mbar

I-flow: Inlet and outlet connection on different sides

Model	Power range ^(c)	ETD	Total size ^(#) incl. header tanks (in mm)	Fan diameter	Rated power of electric motor ^(*)	Pressure drop oil side ^(c)
RT.i1	up to 88 kW	60 K	1.040 x 580 x 750	315 mm	2 · 2,0 kW	200 mbar
RT.i2	up to 128 kW	60 K	1.200 x 600 x 820	355 mm	2 · 2,8 kW	205 mbar
RT.i3	up to 177 kW	60 K	1.350 x 650 x 850	400 mm	2 · 4,4 kW	230 mbar

The design focuses on equivalent power at different connection positions. The same level of performance was achieved by selecting different components.

All configurations are Twinboxes with two fans. Power range and pressure drop on oil side are examples for following conditions: 200 km/h train speed / Fouling 10% / ETD 60 K: Oil inlet 105 °C; ambient temperature 45 °C / Oil flow: 35 m³/h resp. 583 L/Min / Ester Midel 7131 oil / Elevation 400 m a.s.l. / Fitting Øi 70 mm.

We will be happy to calculate deviating conditions for you. Please contact us by e-mail or phone.

*Rho 1,205 kg/m³ (20 °C; 1.013 mbar) / *considering fan boxes, without flanges, without inlet grid / °calculated size

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AKG SERVICE PROGRAM

- >>Maintenance / Overhaul
- >>Supply of spare parts
- >>Repair
- >>Technical Support
- >>Commissioning
- >>Service at Customer Location
- >>Training



Technical Service

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