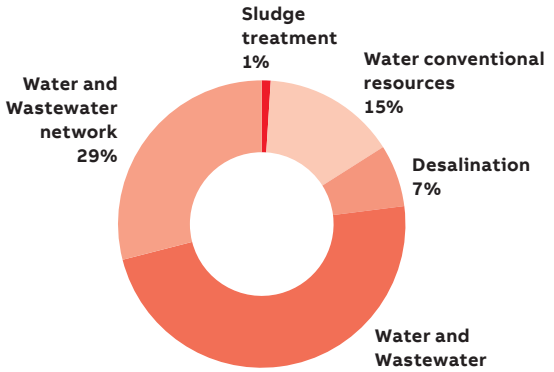
ABB HV motors for Water and Wastewater industry

Growing demands requires better efficiency, availability, and reliability

Growing demands and challenges

As Earth's population grows and the demand for freshwater increases, water purification and recycling becomes increasingly important. The global investment in water and wastewater has been rapidly increasing. Particularly in the US, the infrastructure of water and wastewater treatment will be invested approximately 55B dollars over the next five years. Growing demands drive water infrastructure use of equipment that are energy efficient, safe, and reliable to operate seamlessly.

Today all economies that have regulated the energy performance of water-using products, have reported corresponding reductions in both their energy use and their water consumption. Water infrastructure in different applications consume total 3.7% of global electricity. Higher energy efficient motor driven system solution in water infrastructure is a must.



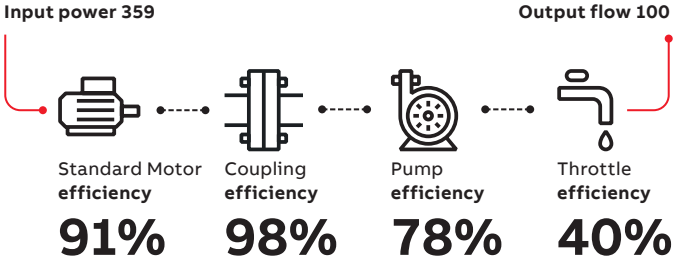
Energy consumption per different water segments, out of total 3.7% global electricity. (Source: GWI)

ABB HV motors for water and wastewater applications are built for high levels of design performance, efficiency, availability and reliability in demanding conditions and various applications.

Design to top energy efficiency level

- Enables energy saving in operation
- Enables low carbon operation towards green future
- Shortens payback time from total cost

Did you know how much efficiency can be improved from a pumping system driven by higher efficiency motor?



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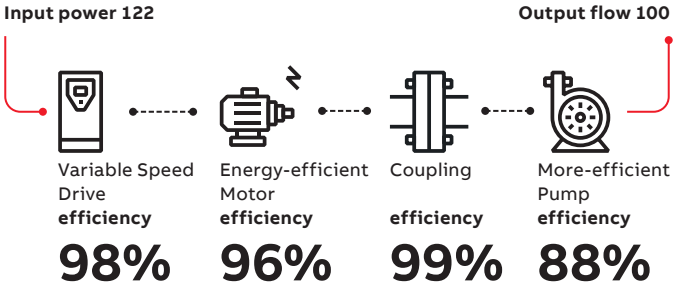
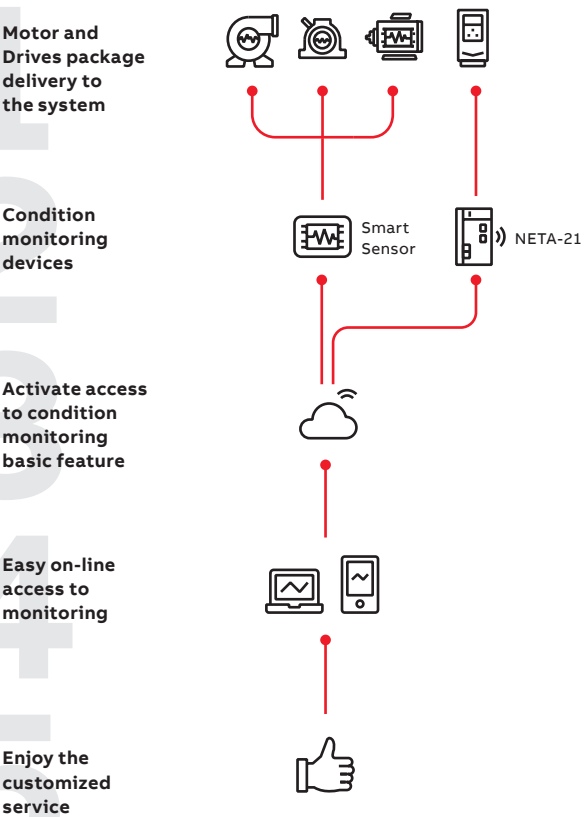
Energy-efficient pumping system

System efficiency = 82%



Comprehensive solution offering with world class availability

- Wide power range offering with domain expertise in all water applications
- Global coverage and design to specific market needs
- One-supplier packaging design for Motors + Drives, enables potential saving from system investment
- Digitalized condition monitoring
- Easy access to digital service and on-line support through life cycle

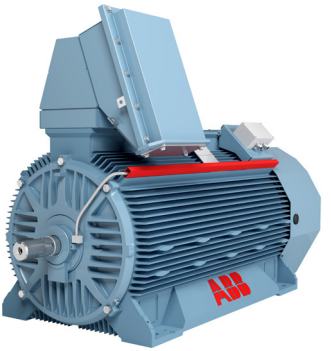


Best reliability ensures seamless operation, even in the most demanding conditions

- Extremely high degree of protection, up to IP66
- Design for extreme ambient conditions
- Extremely low vibration design for resonance free operation
- Minimized mechanical stress on pump bearings, shaft, and impeller keyway

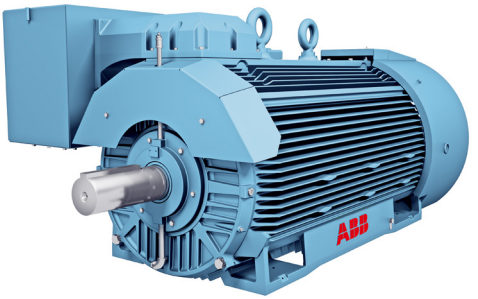
ABB HV motor offering

Rib cooled induction motor AXR



Key parameters	
Availability for NAM	Yes (NEMA electrical)
Power range	Up to 1.8 MW
Shaft height	315 – 500 mm
Voltage	Up to 11 kV
Ambient condition	-58 °F (-50 °C) to +140 °F (+60 °C)
Degree of protection	Up to IP66
Efficiency	Up to 97.35%
Operating	DOL, VSD
Highlights for Water use	• Optimum efficiency • Compact design with more power per kilogram, maximized output with minimum dimension and weight for easier integration • Patented internal cooling enable best power density, increase drive end bearing lifetime • Condition monitoring via SmartSensor and ABB Ability service

Rib cooled induction motor NXR, specific design for US market



Key parameters	
Availability for NAM	Yes (NEMA MG 1, CSA)
Power range	250 – 1000 HP
Shaft height	5008 – 5012, 5810
Voltage	460, 2300/4000 V, 60 Hz (380, 3300 V, 50 Hz)
Ambient condition	-58 °F (-50 °C) to +140 °F (+60 °C)
Degree of protection	Up to IP55
Efficiency	Up to 97.35%
Operating	DOL, VSD
Highlights for Water use	• Design to NEMA specifications, tailor-made solution for American market needs • Modification to order delivery in American market, stocked and modified to order in Athens, GA Optimum efficiency

Modular Induction motor AMI

Key parameters	
Availability for NAM	Yes (NEMA electrical)
Power range	Up to 30 000 HP (23 MW)
Shaft height	400 – 1000 mm
Voltage	Up to 13.8 kV
Ambient condition	-58 °F (-50 °C) to +140 °F (+60 °C)
Degree of protection	Up to IP66
Efficiency	Up to 98.03%
Operating	DOL, VSD
Highlights for Water use	• Specific design solution available for critical vertical thrust in water applications • High degree of protection up to IP66, 3rd party certification is available as option • Easy installation with innovative cable installation designed

Synchronous motor AMZ

Key parameters	
Availability for NAM	Yes (NEMA electrical)
Power range	Up to 5 800 HP (45 MW)
Shaft height	Up to 2500 mm
Voltage	Up to 15 kV
Ambient temperature	-50 to +60 °C
Degree of protection	Up to IP55
Efficiency	Up to 98.6%
Operating	VSD
Highlights for Water use	• Available on NEMA electrical design • Top level efficiency on the market • Excellent starting characteristics • Perfect performance characteristics that no limits concerning constant torque at low speed • System offering with Drives • Easy and sost reliable controlling, pretection and supervision with combination of drives

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