

Application note

Process Performance Motors for the Water & Wastewater Industry



Companies in the water & wastewater sectors around the world are utilizing ABB's expertise and equipment to increase productivity, minimize downtime and enhance safety in their operations.

What can ABB offer the water & wastewater industry?

Motors are the workhorses of industry, and ABB motors and drive systems are providing reliable service in numerous applications in the water and wastewater industry – in conditions ranging from the Arctic to some of the hottest deserts on earth.

ABB's expertise, combined with its extensive track record in working with the water & wastewater sector, enable it to produce innovative, high efficiency drive solutions that provide superior performance, availability and reliability.

Designed for seamless integration into the customer's automation environment, ABB's reliable drive products and systems can play a major part in maximizing the overall performance of processing plants.

What are the applications where ABB products and systems are utilized?

Designed to operate at very high efficiency, ABB's low and high voltage motors meet the tough conditions encountered in the water and wastewater industry: humidity, high or low temperatures, and exposure to salt or sand.

ABB has built a solid reputation as a supplier of pump motors - both synchronous and induction - to OEMs and end-users in the water & wastewater sectors. Solutions also include all necessary drives and control equipment.

Water and wastewater processing is an industry where environmental considerations are at the forefront, and ABB recognizes the importance of supplying products that are environmentally compatible. Equipment that operates at high levels of efficiency not only helps to boost productivity and cut production costs but also requires less energy input and therefore reduces overall environmental impacts.

What is ABB's process performance motor?

ABB's process performance motor range is based on a standard design with many add-on options available. The motors can therefore be easily engineered to match the customers specifications.

What are the main features?

Low voltage motors

IEC sizes 71 to 450
aluminum and cast iron frames
output up to 1000 kW
voltage 220...690 V
ambient temperature -55°C to +70°C

High voltage motors

IEC sizes 315 to 400
cast iron frame
voltage 2300...6600 V
frequency 50 and 60 Hz
ambient temperature -55°C to +70°C

The process performance motors are designed with great flexibility, so they can be tailored for any application, industry or ambient conditions. A wide range of options is available and can be easily added. Their generous thermal margin decreases sensitivity to momentary overloads and extends the motors' lifespan.

Their high efficiency (IE2) means the process performance motors can be optimized for minimized energy consumption and highest productivity. If required the efficiency level can be further increased to one step above IE2.

The motors also have sound environmental and sustainability credentials. In particular, special attention is paid to ensure that the materials and paints used are environmentally compatible. High operational efficiency supports efforts to reduce CO₂ emissions.

What about compatibility with frequency converters?

ABB's process performance motors are designed for converter operation. Special steps are taken at the design stage to avoid asymmetries and minimize the incidence of bearing currents. In the low voltage motors the standard winding insulation level is sufficient for voltages up to 500V, and motors for higher voltages are supplied with reinforced winding insulation. The motors can be equipped with an external cooling kit to provide 100% torque at low speed in constant torque applications, as well as an encoder or other additional equipment as required.

Which are the main benefits for customers?

The flexible design and wide choice of available options ensure that the process performance motors can be optimized for nearly all customer requirements. The robust, durable motors provide highly reliable operation with low running costs and low noise levels, while requiring minimal maintenance.

What is ABB's total motor offering?

ABB offers several comprehensive ranges of AC motors and generators. We manufacture synchronous motors for even the most demanding applications, and a full range of low and high voltage induction motors. Our knowledge of virtually every type of industrial process ensures we always supply the optimum solution for our customer's needs.



For more information please contact:

www.abb.com/motors&generators

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