

High voltage motors for conveyors

More for mining



ABB's motors for conveyor applications are built for high levels of performance, quality and reliability in demanding conditions.

Perfect compatibility with conveyor starting requirements

ABB's motors are compatible with different starting and controlling requirements for conveyors. The engineering of each motor is customized according to the conveyor's starting method and torque requirements. Three of the most common drive types are fixed or variable fill fluid couplings, variable speed drives (VSDs), and wound rotor (slip-ring) motors connected to a variable resistance such as a liquid rheostat.

The selection between geared and gearless conveyor drive systems usually depends on site requirements and the results of an economic life cycle evaluation.

Fluid coupling solutions are very common for small and medium sized conveyor systems, usually operating at a fixed speed. The fluid coupling is located between the motor and gearbox, and has traditionally been a good low cost solution for single drive conveyors or dual drive conveyors where both power modules are located on a common drive pulley. ABB supplies a complete

range of fluid couplings and gearboxes and can offer an optimized system solution including the motor, fluid coupling, reducer, and pulley assemblies for any type of conveyor.

Variable speed drive systems allow smooth starting, belt load profile optimization, belt slack and anti-slip controls, all of which increase reliability and lower operating costs. VSDs provide accurate torque and speed control of conveyors. Additional benefits are energy savings, extended application lifetimes and power factor compensation. ABB is a leading manufacturer of VSDs with a full range of low and medium voltage drives. The design of the drive and motor combination is optimized to match the solution needs, resulting in important benefits for the overall process.

Conventional slip-ring motors still play an important role in applications without speed control which operate under rated conditions. Liquid-resistor starters are generally used for starting. This solution is an attractively priced alternative to VSDs, especially when existing installations are reconditioned.



High voltage motor solutions for conveyors

ABB's motors are based on reliable designs, proven in thousands of mining installations, and provide high productivity in demanding conditions.

Induction motors are the workhorses of industry due to their versatility, reliability and simplicity. Squirrel cage induction motors are available up to 28.5 MW, and they are usually the first choice in the power range up to 10 MW. They can be connected direct-on-line, with fluid couplings or fed via variable speed drives. They are the best choice for in-plant and medium scale overland conveyors.

Synchronous motors are typically preferred when higher power and torque are required. In addition to their high power capabilities (up to 75 MW), synchronous motors offer the benefits of high efficiency, high performance and an adjustable power factor. This solution is a perfect match for the low speed and high torque requirements of overland conveyors. They can be connected direct-on-line, with fluid couplings or fed via variable speed drives. ABB can also provide low voltage synchronous permanent

magnet motors. These motors are ideal choice for low voltage, high torque, high efficiency and direct drive applications.

Slip-ring motors are induction motors with a wound rotor solution. They are available up to powers of 8 MW and represent a good choice for installations in remote areas or with high starting torque requirements. A liquid rheostat is used for starting.

ABB's motors represent a robust, safe and energy efficient solution for energy-intensive processes in harsh conditions and remote areas. For mining companies, energy costs represent 25 to 30 percent of operating costs and motors account for around 60 percent of on-site energy consumption. Selecting the right motor lowers the cost of ownership of the entire mining plant.

ABB's excellent mining application specific know-how and technical expertise, gained from thousands of mining installations, make us an ideal partner for mining companies who want to improve reliability and efficiency of their processes.

For more information please visit:

www.abb.com/motors&generators

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