

SmartMill™ to bring advanced embedded control to grinding mills

Harnessing multiple variables such as feed rate, rotation speed and mill load, using an advanced predictive control solution, will greatly improve productivity and efficiency

Zurich, Switzerland, September 8th, 2015 – ABB, the leading power and automation technology group, is launching an advanced control solution embedded within a variable-speed drive. Called SmartMill™, it utilizes real-time data for continuous control of individual grinding mills, thereby removing the onus on the operator's experience and judgment.

Traditionally, operators face limited flexibility in optimizing grinding operations, an example is adding balls to the mill load and waiting for load reduction when the mill is overloaded. These adjustments are usually performed with only rudimentary control automation, or none at all. ABB's SmartMill™ optimizes the process by adapting the actual mill speed and feed rate to current conditions in real time. The speed is varied according to an advanced control concept that keeps the mill's solid feed as high as possible, while monitoring signals such as power consumption, motor torque and bearing pressure and mill speed. This automatic selection of optimal set points means that operators can focus on more important tasks.

Having full control of a mill helps improve the process control strategy. ABB offers advanced process control (APC), which increases grinding efficiency, decreases energy consumption and extends equipment lifetime throughout the entire grinding circuit.

SmartMill™ is a standalone solution for individual mills and incorporates a variable-speed drive system as standard, while accessing all mill operation and maintenance features, such as automatic positioning, creeping speed and the frozen charge protection and remover function.

For inputs, SmartMill™ uses power, torque and load, which the controller uses to predict future mill behaviors. The outputs can take into account several mill variables, such as feed rate, mill rotation speed, ore hardness and purity, total load and water addition rate. SmartMill™ provides full stability to individual mills, without the need for additional controllers or sensors. This leads to increased grinding efficiency, reduced energy consumption, higher throughput, better influence over particle size, fewer shift-to-shift variations and extended liner lifetime.

"Normally, there is always a trade-off between particle size, throughput, and recovery," says Marcelo Perrucci, Global Product manager, ABB. "SmartMill™ allows flexible adjustments so that the sweet spot, which will vary from mine to mine, can be readily identified."

ABB (www.abb.com) is a leader in power and automation technologies that enable utility, industry, and transport and infrastructure customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in roughly 100 countries and employs about 140,000 people.

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For more information about this product: <http://new.abb.com/mining/grinding/smartmill>

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