
Siemens offers first vacuum circuit breaker worldwide

Monday, 26 Oct, 2009

Siemens is meeting the steel industry's growing demand for every higher performance levels in melting down scrap metal by launching a refined medium voltage circuit breaker.

As of September 2009, the company offers 3AH4 vacuum circuit breakers with an operating current of 4000 amperes for the 36 kilovolt voltage level. It is the first vacuum circuit breaker worldwide for frequent operation applications up to 120,000 switching cycles capable of handling such a high operating current without forced cooling. The short circuit breaking current is 40 kilo amperes at a voltage of up to 40.5 kilovolts.

Siemens has developed these circuit-breakers above all for special applications in the steel industry, such as for switching operations on electric arc furnaces. Siemens has developed the new circuit-breaker above all for special applications in the steel industry. There, it can be integrated in the Simetal Sivac X furnace switchgear supplied by Siemens Industry for switching operations on electric arc furnaces. The switchgear is designed to meet the extremely tough demands made by high-performance electric arc furnaces and ensures reliable power input and reliable plant operation. Furthermore, the long maintenance intervals of up to 10,000 switching cycles boost availability and thus reduce operating costs.

Siemens designed the 3AH4-series frequent operation circuit-breakers for deployment in harsh ambient conditions such as those encountered in the steel industry. These include high temperatures, high levels of air pollution, instable operating currents, frequent short circuit trips and operating cycles with more than a hundred switching operations per day. The circuit breakers are therefore designed as robust post insulators equipped with readily accessible vacuum interrupters. The interrupters can therefore be quickly replaced at the end of their service life after approximately 30,000 switching operations without having to replace the entire circuit breaker.

Because of the special design of the circuit breaker air can flow freely along the cooling elements. Operation of the circuit breaker is therefore possible up to 4000 A without forced cooling. The actuator of the 3AH4-series circuit breaker is designed for up to 120,000 switching cycles over its entire life cycle. The circuit breakers are thus also suitable for other areas of application calling for high levels of switching frequency such as motor control in pumped-storage power plants and in the chemical industry.

Mr Wolfgang Heuring CEO of the Medium Voltage Business Unit within the Siemens Energy Sector said that "We have more than 35 years of experience in vacuum circuit breakers. That makes us a reliable partner, especially for capital intensive industrial applications demanding maximized equipment availability."

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