

Industry Sector Mobility Division

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Siemens to install novel static frequency converters for Swedish Railways

Sitras SFC plus multi-level converter concept convinces yet another customer

Siemens Mobility has received an order from “Banverket”, the Swedish Rail Administration, to install six static frequency converters of the newly developed type Sitras SFC plus for traction power supply. This model is especially compact, environment-friendly and quiet. The project includes delivery, installation and commissioning of five 17-Megawatt units in Häggvik and a sixth one in Eskilstuna. The total order is worth around EUR33 million (361 million Swedish krona). The new units are scheduled to start operating in summer 2011.

“Banverket”, the Swedish Rail Administration, has ordered six novel static frequency converters of the type Sitras SFC plus (Static Frequency Converter), each of which with a 17-Megawatt (MW) power output. In addition to the static frequency converters, the order includes instrumentation and control equipment, protection and control systems, buildings, and three-phase and single-phase switchgear. One converter will be installed in Eskilstuna and five others in Häggvik in order to supply power to the Greater Stockholm area. They convert the normal three-phase current 50 hertz into single-phase traction power, which at 16.7 hertz is only one-third the frequency of three-phase current.

What is special about the Sitras SFC plus solution is its multi-level converter concept. It has a modular structure consisting of a number of series-connected semiconductor components and capacitors which combine small voltage levels to produce the desired voltage. Siemens engineers have succeeded in increasing the number of these voltage levels, thereby reducing the switching frequencies and, consequently, the power loss by around ten percent compared to previous systems. The noise level has also been lowered, which benefits the inhabitants in the surrounding residential areas. Moreover, the new type of converter requires around 20 percent less space because it is more compact than other solutions currently being offered on the market.

1 / 2

Siemens successfully launched this new technology on the market in January of this year when the German company E.ON Kraftwerke GmbH ordered the world's first 'Sitrans SFC plus' static frequency converter for traction power supply. Sitrans SFC plus is part of the Siemens environment portfolio, which has enabled the company to post a sales figure of nearly EUR19 billion in fiscal 2008. This corresponds to around one-quarter of the overall Siemens sales.

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