PFISTERER

PLUG connections shorten maintenance times for offshore wind energy plants

In the latest prototype twin-blade turbines in the HUSUM wind test field, in the largest North Sea Wind Farm, Global Tech I, and in almost every European high-speed train, the PLUG connection system from Pfisterer ensures safe power transmission in the low voltage range. The pluggable components are quick to install and minimize waiting times.

In the towers of wind farms, the PLUG connection systems essentially link three components that are important for energy recovery: the wind turbine to the converter and the converter to the power transformer. More than 4,100 of these connections have been installed in the Global Tech I field. How reliably the PLUG system operates despite adverse weather conditions has been proven over many years of use in railroad applications, for which the system was first developed. Installed under the floor of the drivers' cabs – i.e. outside the vehicle – it withstands all weather conditions and severe vibration.

Fast, fault-free maintenance

The individual electrical components of wind energy plants can be connected to one another quickly and easily using PLUG. This is an advantage even during the initial installation, and even more so during costly offshore maintenance. The more efficiently the drive components, such as motors or converters, can be replaced, the shorter the plant downtimes. In comparison with conventional connecting elements, pluggable connections can be installed and removed considerably more quickly. In addition, PLUG prevents connection errors during maintenance work as the plugs and sockets are coded. They can only be joined together if the codings match.

A long life in several versions

With different plug sizes, PLUG covers a wide range of applications. Size P3 has been specifically designed for the wind energy sector. It has a maximum operating voltage of 6.6 kV, a high current capability of up to 1,250 A, and accepts cables with cross-sections of between 50 and 240 mm^2. To meet the requirements of different installation spaces, there are one and two-cable elbow connectors as well as a single-pole straight connector. High-quality materials and silver-plated contacts that do not corrode at the transition points contribute to a long service life corresponding to that of the wind turbines themselves. The PLUG connections are vibration-resistant and shock-tested, protected against the ingress of foreign bodies and water, and they are also resistant to oil, petroleum, grease, and solvents. PLUG connection systems can be installed preassembled in wind energy plants or connected as modules on site, as is the case for the new twin-blade Skywind system. Pfisterer installed the connection system in the prototypes, while at the same time training the operator's fitters in the use of the system, using the tool specially developed by Pfisterer for the job.

PLUG connection systems safely convey high electrical outputs and are quick to install.

PLUG allows the simple pre-assembly of tower cabling in wind energy plants.

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About PFISTERER

PFISTERER Holding AG, headquartered in Winterbach near Stuttgart, with around 1,400 employees and an annual turnover of around 250 million euros, is one the world's leading technology companies for system solutions and components in energy transmission. Established in 1921, this family-owned German-Swiss company is one of very few in the world to offer solutions for the complete transmission chain of low, medium, and high-voltage for outputs of between 110 V and 850 kV. The Group operates technology, distribution, and training centers at a number of locations in Germany and Switzerland; it has several manufacturing facilities in Europe, Argentina, and China, and is represented with sales offices in 19 countries throughout Europe, Asia, South America, and the USA. As an innovating force and supplier of key technologies with a complete range of products, as well as consulting, installation, and training services, PFISTERER AG is in demand globally as a partner for energy supply utilities, network operators, technology companies, rail transport operators, and other infrastructure companies.