
WARRINGTON, UK, APRIL 7, 2015

Drives supplier uses ABB solar inverter to help reduce energy costs

A supplier of variable speed drives (VSDs) has installed an ABB TRIO solar inverter as part of a photovoltaic power plant that will help cut its electricity bill.

Leeds-based Halcyon Drives is an ABB authorised value provider and the UK's largest supplier and service provider of ABB drives and motors.

The company converted the roof of its site to a photovoltaic power plant using 120 solar panels capable of generating 30 kW of power.

The cost of the installation was £31,000 and Halcyon expects to recover this investment on electricity savings alone in two and a half years.

Installed by local company Leeds Solar, the system is capable of running all the heating, lighting and machine tools used in Halcyon's factory.

Commissioned by ABB, the TRIO 27.6 is sited in the company's demonstration area, although its IP65 protection makes it suitable for installation on the roof. Halcyon's Marketing Director Martin Rhodes says: "Our business is selling energy saving variable-speed drives. With the ABB TRIO we can show that we are truly committed to reducing our energy costs by generating our own and have faith in ABB products."

The photovoltaic system has a peak output of 30 kW, although the amount of power the factory needs varies greatly, with less need for heating and lighting in the summer. Loads can also vary with production needs, with up to six drills in use simultaneously or completely off. This means the power requirement can be as low as 2 kW. Halcyon can then sell the surplus power back to the grid.

The TRIO has a wide range of voltage inputs, from 300 V to 850 V, providing choice for the number of solar panel strings to use. This makes the TRIO suitable for a large number of roof sizes.

The TRIO has two separate maximum power point tracking (MPPT) systems, which sample the output of the cells and apply the proper load to obtain maximum power for any given environmental conditions. Using two isolated MPPTs means the TRIO can have half the strings on one side of a roof and half on another, allowing the system designer to account for roofs with different slopes or which face different directions.

Halcyon opted for the S2x version which offers DC and AC isolation, string fusing and surge protection, avoiding the need to install a separate protection module. The unit also features a heat sink to provide unforced ventilation, making maintenance easier as there is no need for a cooling fan.

The unit is free of electrolytic capacitors, leading to a longer product lifetime than is common with conventional inverters.

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Caption: ABB authorised value provider, Halcyon Drives, has installed an ABB TRIO solar inverter as part of a photovoltaic power plant.

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