

Media Release
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Bioconversion plant's efficiency is improved with VFD technology

The efficiency of a bioconversion plant using organic food waste to feed insects that go on to nourish farm animals and fish is being dramatically improved with variable frequency drive (VFD) technology from Invertek Drives.

French start-up Entofood and Veolia Bioconversion have established a specialist plant in Malaysia producing the larvae from the Black Tiger Fly. The flies feed on waste food made up of unused or undervalued organic waste before producing the larvae, which is used as protein in the rapidly expanding global aquaculture and agriculture industries.

The plant uses large numbers of ventilation fans to maintain an even environment for the flies to feed on the waste before laying the larvae.

“The existing drives had been installed by the fan manufacturers and were not matching with the motor current of the fans, causing frequent tripping. This resulted in fluctuations in the facility’s environment, making production less efficient.

“As a result, the facility was unable to increase production. The resulting downtime and maintenance were also causing additional costs,” said Khairul Azhari, Manager of Invertek Drives Malaysia, a sales partner of Invertek Drives.

Invertek Drives Malaysia and DSC Engineering installed 58 Size 2 [Optidrive E3](#) IP66 VFDs. They were commissioned with 4kW output at 9.5 Amps to match the fans motor current.

“The Optidrive output current easily matched the fan motors, preventing the tripping and downtime. It also provided greater control of the fan speed, ensuring improved efficiency and a reduction in energy costs,” added Mr Azhari.

The harsh environment of the facility, such as washdowns, waste products and the flies themselves meant the IP66 / NEMA 4X rated VFD enclosure was a perfect solution.

The [Optistick Smart](#), which uses NFC and Bluetooth technology, was used with the Optitools Mobile app to commission and to duplicate parameters on the 58 drives.

“Using this technology made the commissioning task and time much easier and faster,” said Khairul.

The growing market for such animal and fish food protein will mean an increase in such facilities, relying on VFDs to control fans for ambient environments.

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Around 1kg of eggs from the flies produces six metric tons of protein in 10 days that is used by fish farms, poultry and pig producers, among others. It's estimated that 10 per cent of the protein market could come from insects by 2040.

"The prospects are promising: aquaculture provides half of the fish consumed worldwide. Bioconversion will mean that cultivated fish do not have to be fed with other fish or any protein grown to the detriment of food crops or forests," said a Veolia Biodiversity statement.

"Entofood and Veolia have complementary know-how: the first has the technology required for this new form of recovery; the second has the knowledge and expertise regarding the organic source on a global scale. This partnership could make the difference in a world where the issues of food safety, self-sufficiency and greenhouse gas reduction are critical."

More details about Invertek Drives Optidrive VFD range and technology can be found at www.invertekdrives.com.

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Notes to the Editor

Invertek Drives

Invertek Drives Ltd is dedicated to the design and manufacturing of electronic variable frequency drives for controlling electric motors. Established in 1998 it has grown year-on-year and is now one of the world's leading innovators in VFD technology.

In November 2019 it was acquired by Sumitomo Heavy Industries Ltd (SHI), a leading global manufacturer and distributor of power transmission and control equipment. Invertek's UK headquarters, located at Welshpool, Powys, UK, houses specialist facilities for research and development, manufacturing and global marketing.

All operations, including research and development, are accredited to the exacting customer focused ISO 9001 quality standard whilst its Environmental Management System is accredited to the ISO 14001 quality standard.

In 2019 a new 5,500 sq metre global manufacturing and distribution facility was opened at the headquarters, allowing production of up to 400,000 VFDs a year. Invertek's products are sold globally by a network of specialist distributors in over 80 different countries.

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Invertek Drives unique and innovative Optidrive range is designed for ease of use and meets with recognised international design standards for CE (Europe), UL (USA) and CTick (Australia). More details can be found by visiting www.invertekdrives.com.