



Media Release
September 2021

Accurate motor control reduces noise and vibration in laboratory flow hoods

High levels of motor noise and vibration was above acceptable levels for the use of a ventilation flow hood used in a sensitive laboratory environment. That was until variable frequency drive (VFD) technology was introduced.

The fan was being driven by a single-phase motor controlled by a Pulse-Width Modulation (PWM) system. This provided limited control over the speed of the fan resulting in noise at up to 72dB, in addition to significant vibration.

Specialist laboratory equipment manufacturer AmbiKontrol of Brazil turned to Invertek Drives for a solution to reduce the noise and vibration levels by being able to vary the fan's motor speed.

“Laboratory flow hoods provide safe ventilation in a number of applications in laboratory environments. In this case, the motor control was a simplistic PWM system. The poor control meant the motor created noise and vibration that was not acceptable in such a sensitive environment,” said Marcus Silva, Invertek Drives Head of Sales for Latin America.

“We introduced an Optidrive E3 variable frequency drive to the application. A combination of its ease to set up and commission, along with its ability to provide accurate speed control, meant the problems associated with the old system were solved immediately.

“The noise levels dropped to below 62dB and the issue of vibration was resolved. It also gives operators much more control over the level of ventilation needed by altering the speed of the motor.”

In this case, the Optidrive E3 used was a 05HP single phase input/output, 220V, 4.3A, with an IP20 enclosure.

The compact size of the drive meant it could be easily fitted to an existing panel, taking up little space.

“The Invertek solution made our equipment move to a different level when compared with our competitors,” said a spokesperson for AmbiKontrol. “We immediately had a reduction of up to 62dB in noise levels, in addition to motor vibration. Our customers noticed this straight away and were impressed with the system.”

AmbiKontrol produces a range of laboratory products including biological safety cabins, exhaust chapels, instrument sterilizers, BOD/DBI incubators, Culture medium preparers, orbital shakers, and air treatment units.



Marcus added: "Once again we have been able to demonstrate the ability of the Optidrive VFD range to provide accurate motor control capable of not only providing energy savings, but resolving issues such as noise and vibration through the control of motor speeds."

The Optidrive E3 is part of Invertek Drives range of easy to use and set-up VFDs. The E3 includes simple commissioning, with 14 parameter basic set-up, default settings, and up to 50 parameters available for flexible use.

It comes with an intuitive keypad and application macros for switching between industrial, pump, and fan modes, dependant on the application being controlled.

More details about the Optidrive range of VFDs can be found at www.invertekdrives.com.

-END-

For more media information, contact:

Owain Betts, PR, Media and Communications

t: +44 (0)1938 558 253

m: +44 (0)7787 437 052

e: Owain.Betts@invertek.co.uk

w: www.invertekdrives.com

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.



Inverttek 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.