

Application Note

AN-ODP-24

Energy optimisation function for fan/pump applications

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- **General:**

For typical fan and some pump applications, load torque follows a quadratic characteristic such that load torque drops significantly speed reduces. This type of load characteristic offers significant energy saving opportunities which can be achieved by activating the energy optimisation function.

This document describes how to enable this function.

- **Parameters:**

Note that this function can only works when V/F control mode is selected (P4-01=2)

P1-06 Energy optimisation

P1-06 = 0: energy optimisation function is disabled
P1-06 = 1: energy optimisation function is enabled

When this function is enabled, the drive will automatically detect the motor load condition by sampling the load current level. If the motor is lightly loaded, the drive will automatically reduce the output voltage which will dynamically reduce the energy consumption of the motor.

If the load on the motor increases, the output voltage will also increase in order to compensate for this load change.

The energy optimisation function is fully dynamic, permitting energy saving to be achieved whilst maintaining the ability to deliver full rated motor torque.

In 3GV vector control mode, this function is disabled.

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