Optidrive Applications Support Library

Application Note	**AN-ODV-3-003**
Title	**Selecting the Required Stopping Mode**
Related Products	**Optidrive Eco**
Level **1**	1 – Fundamental - No previous experience necessary 2 – Basic – Some Basic drives knowledge recommended 3 – Advanced – Some Basic drives knowledge required 4 – Expert – Good experience in topic of subject matter recommended

Overview

This feature determines the way in which the motor comes to standstill when the drive enable signal is removed.

For loss or removal of the drive enable input, applications may require the drive to decelerate at a constant ramp rate, or to coast to a stop.

This application note describes how the Optidrive Eco can be configured for these different operational modes.

Optidrive Eco Behaviour on loss of Enable Signal (Normal Stop Condition)

Normal stopping occurs when the enable signal is removed from the Optidrive. The mains power supply must always be maintained on the Optidrive for a normal stop to be performed.

Parameters

P1- 05 Stop mode Selection

P1-05 = 0, (default value), Controlled Ramp to Stop

Removing the drive enable signal will cause the drive to decelerate the motor to stop at a rate defined by the first deceleration ramp time (P1-04). The second deceleration ramp time (P2-25) can be used if selected via the digital inputs (see settings for parameter P1-13 and menu 9 in the User Guide).

When a high inertia load is connected to the motor, during deceleration the motor acts as a generator, and energy is transferred back to the drive. This energy must be dissipated by the drive. If the energy level is beyond the capacity which may be dissipated safely, the drive will automatically extend the deceleration ramp time, in order to avoid tripping.

P1-05 = 1, Coast-to-Stop

In this case, the drive output will be disabled as soon as the enable signal is removed, leaving the motor to coast to stop, braked only by the system frictional losses. This mode can be useful on high inertia applications where the stopping time is not important. When this option is used with a high inertia load, it is important that the “Spin Start” function, P2-26 is enabled in the drive.

P1-04 and P2-25 Ramp settings

Using the parameters in the Advanced Drive Logic Control Menu Group 9, it is possible to select a 2nd deceleration ramp time, so that depending on the status of the digital inputs, the ramp down time will be controlled by P2-25 as opposed to P1-04. This can be utilised in applications which occasionally require a faster stopping time than the normal ramp down time.

Appendix

Revision History			
Issue	Comments	Author	Date
01	Document Creation	KB	31/03/15