Optidrive Applications Support Library

Application Note	AN-ODE-3-005
Title	**Displaying Motor Speed in RPM**
Related Products	**Optidrive E3**
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

When using Optidrive E3, the user has a choice to display speed related information directly in RPM or Hz. By default, all values are displayed in Hz. By setting the value of the 'Motor Rated Speed' parameter to match the value shown on the motor nameplate, the Optidrive will display the motor speed and the speed related parameters in RPM.

Parameters

P-10 Motor rated speed Parameter

When this parameter is set to zero, the speed of the motor and any parameters related to motor speed, such as Maximum Speed P-01 will be displayed in Hz.

When the rated speed I entered, this has two functions :-

- All speed-related parameters will now be displayed in RPM, and, the drive will also show the motor running speed in RPM during operation.
- Slip compensation is enabled, which provides improved shaft speed regulation with changing load conditions, and improved low speed torque.

Example

 (For a 2-pole 50Hz motor)

If the operating speed and all speed related parameters should be displayed in Hz.

P-10 should be set to 0 (factory default value). Displayed speed then represents the electrical frequency output to the motor in Hz. The actual speed of the motor will depend on the number of poles of the motor and the load applied.

If the operating speed and all speed related parameters should be displayed in RPM:

P-10 should be set to the motor rated speed (as found on the motor nameplate). The displayed speed will then represent the shaft speed of the motor in RPM with some automatic compensation of load.

Parameter Values Displayed in RPM when P-10 > 0

Parameter	Description
P-01	Maximum Speed
P-02	Minimum Speed
P-20	Preset Speed 1
P-21	Preset Speed 2
P-22	Preset Speed 3
P-23	Preset Speed 4
P-26	Skip Frequency,
P-27	Skip frequency Band
P-29	V/F Characteristic Frequency Adjust

Appendix

Revision History			
Version	Comments	Author	Date
01	Document Creation	KB	07/09/15