



# **Optidrive Applications Support Library**

Application Note	AN-ODE-2-005	
Title	Displaying Motor Speed in RPM	
Related Products	Optidrive E2	
Level	1 – Fundamental - No previous experience necessary	
1	2 – Basic – Some Basic drives knowledge recommended 3 – Advanced – Some Basic drives knowledge required	
L _	4 – Expert – Good experience in topic of subject matter recommended	

### Overview

The Optidrive E2 allows all speed related parameters to be displayed and entered in RPM instead of Hz. By default, the Optidrive E2 displays the operational speed and all speed related parameters in Hz. By setting the value of the 'Motor Rated Speed parameter' to the motor rated speed in RPM, the Optidrive will display the motor speed and the speed related parameters in RPM.

# Parameters

### Motor rated speed Parameter:

### Motor Rated Speed parameter is P-10

When this parameter is set to zero, the speed of the motor and associated speed parameters will be displayed in Hz.

When the rated speed has been set, all speed-related parameters will be displayed in RPM. Also, the drive will show the running speed in RPM during normal operation.

With the motor nominal speed set in RPM (in P-10) the slip compensation will be activated automatically, giving improved shaft speed regulation.

The minimum available none-zero value for the Motor rated speed parameter is the synchronous speed of a 20-pole motor (300 RPM).

# Example

(For a 2-pole 50Hz motor)

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

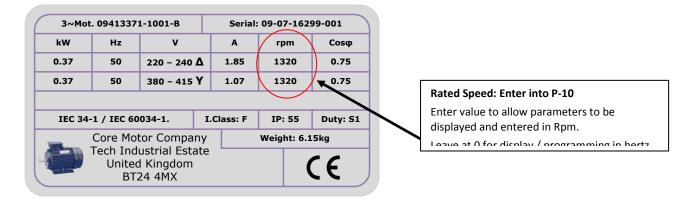
P-10 should be set to 0 (factory default value). Displayed speed then represents the electrical frequency of the rotor in Hz. The actual speed of the motor will depend on the number of poles of the motor and the load applied.

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.

#### Motor Data Plate Example for Motor Rated Speed:

Motor rated speed is typically displayed on the motor nameplate or is available from the motor manufacturer.



#### Speed related parameters shown / Entered in RPM (When Value entered in P-10)

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

#### Appendix

Revision History				
Version	Comments	Author	Date	
01	Document Creation	JP	09/02/12	
02	Revised to new format	KB	24/04/14	