Optidrive Applications Support Library

Application Note	AN-ODE-3-001
Title	Setting The Motor Nameplate Details for Standard Motors
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

Optidrive E3 is designed to be able to operate a motor of similar power rating out of the box without any parameter adjustment, however by adjusting some basic settings, it is possible to improve performance and optimise protection of the motor against overload through damage. This application note provides an overview of the recommended parameter settings, and their respective functions.

Motor Rating Plate / Nameplate Information and Basic Parameter Settings

All motors should have a rating or nameplate fitted by the manufacturer, which provides information about the motor. Optidrive E3 has parameters which are intended to be adjusted by the user to match the information on this plate, and setting these values will provide the optimum operating conditions.

The image below shows an example of what information will be present on a typical motor nameplate.

The values highlighted should be entered into the following parameters.

1. Parameter P-07 : Motor Rated Voltage

The motor rated voltage should be entered into this parameter. Most industrial motors have a Star / Delta connection to allow operation at different voltages, e.g. 230 or 400 Volts. The values may also show a range of voltages, e.g. 220 – 240 volts, allowing the same motor to work with differing mains power supply voltages around the world.

For all drives except 110 Volt input supply versions, the output voltage will correspond to the input voltage, so if the mains power supply is 380 volts, the output voltage from the E3 will also be 380 volts. E3 drives for 230 Volt single phase power supplied, have a 230 volt 3 phase output (not 380 or 400 volt).

Ensure firstly that the motor is connected correctly in star or delta, according to the motor nameplate, and secondly that the correct voltage setting is entered into P-07.

2. Parameter P-08 : Motor rated current

The motor rated current in should be entered into this parameter. This needs to be the current value that corresponds to the star or delta connection based on the voltage in use.

This parameter enables the overload protection to work correctly with the motor. When the correct value has been set, the Optidrive E3 will continuously monitor the motor current, to prevent damage to the motor.

The factory default value for this parameter is the rated current of the drive.

3. Parameter P-09 : Motor rated frequency

In general, most motors are designed to operate with either 50 or 60Hz mains poser supply, depending on the region, and in most cases, this parameter will require checking only, as the factory setting will be 50 or 60Hz.

Some special motors may have an alternative rating, and this may be entered in this case.

4. Parameter P-10 : Motor rated speed

This parameter provides two functions.

Firstly, when the value is entered from the motor nameplate, all speed related parameters within the drive will change from Hz to Rpm, e.g. P-01 maximum speed now displays in Rpm. This gives the user a choice to view values in Hz or Rpm, depending on the preference.

Secondly, this parameter enables slip compensation. Slip compensation is designed to ensure the motor speed remains constant regardless of any changes in load current. This can be useful in applications where consistent speed regulation is important, or high torque is required at low speed. Entering the correct value here will provide greatly improved starting torque and speed regulation.

Appendix:

Revision History			
Issue	Comments	Author	Date
01	New Document Release	KB	19/08/15