Application Note
Setting up an S100 with a Permanent Magnet Motor

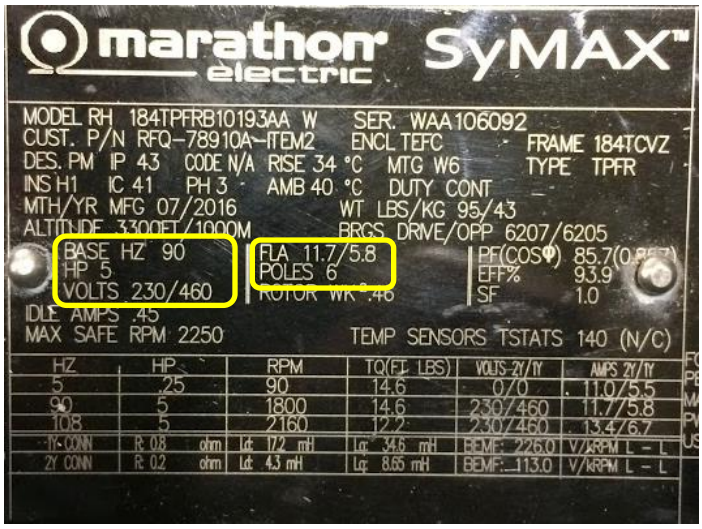
Purpose

This application note shows the simple steps involved in setting up a permanent magnet (PM) motor on an S100 drive. All S100's with firmware version 2.50 or greater support PM motor control.

Parameters

Setup the parameters below. Note that some parameter settings are based on the motor nameplate. The nameplate in this document is only an example. It is imperative to have access to the motor nameplate in order to program in the proper values into the drive and perform an auto-tune. It is also recommended to use the LCD keypad for ease of programming.

Code No.	Display	Set Value
DRV-09	Control Mode	6: PM Sensorless
DRV-14	Motor Capacity	Select the kW setting closest to the motor rating. (kW=HPx.746)
DRV-18	Base Freq	Base HZ from nameplate
DRV-20	Max Freq	Maximum frequency from nameplate
BAS-11	Pole Number	Motor poles from nameplate
BAS-13	Rated Curr	Rated amps (FLA) from nameplate
BAS-15	Rated Volt	230V or 460V dependent on drive's voltage class
BAS-19	AC Input Volt	Set to the input power supply's voltage



Example motor nameplate with necessary information highlighted.

Auto-tuning

Once the above parameters are properly set, start an auto-tune by setting **BAS-20= 7 All (PM).** The motor must be connected to the drive for this process. Typically auto-tuning will take about two minutes. Once completed BAS-20 will return to a setting of “None”.

Test Operation

Below are the parameters necessary to run the drive in Local control to test motor operation.

Code No.	Display	Set Value
DRV-01	Cmd Frequency	Desired speed (Hz)
DRV-06	Cmd Source	0: Keypad