Motor data set-up of a 60Hz Motor

SINAMICS G120 (CU2x0x -2) FW <V4.4

FAQ • April 2013

Service & Support

Answers for industry.

SIEMENS

This entry is from the Siemens Industry Online Support. The general terms of use (http://www.siemens.com/terms_of_use) apply.

Clicking the link below directly displays the download page of this document.

http://support.automation.siemens.com/WW/view/en/23995735

Caution
The functions and solutions described in this article confine themselves to the realization of the automation task predominantly. Please take into account furthermore that corresponding protective measures have to be taken up in the context of Industrial Security when connecting your equipment to other parts of the plant, the enterprise network or the Internet. Further information can be found under the Content-ID 50203404.

http://support.automation.siemens.com/WW/view/en/50203404

Question

How can I set up the SINAMICS G120 (FW V4.2 – V4.3) to work with a 60Hz motor?

Answer

The instructions and notes listed in this document provide a detailed answer to this question.

1 Commissioning to work with a 60Hz motor

1.1 Validity

The full functionality of parameter P0100 is released since Firmware V4.4. The SINAMICS G120 inverters with firmware versions V4.2 - V4.3 own only a limited functionality of the parameter P0100.

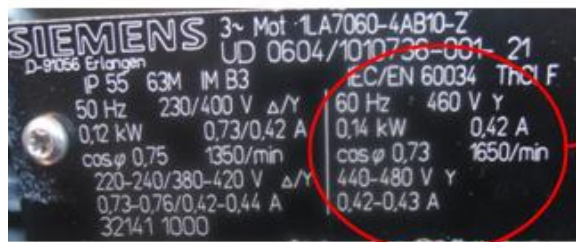This FAQ refers accordingly to the following products:

Control Unit		MLFB
CU230P-2 HVAC	(V4.2)	6SL3243-0BA30-1HA0
CU230P-2 DP	(V4.2)	6SL3243-0BA30-1PA0
CU230P-2 CAN	(V4.2)	6SL3243-0BA30-1CA0
CU230P-2 HVAC	(V4.3)	6SL3243-0BB30-1HA1
CU230P-2 DP	(V4.3)	6SL3243-0BB30-1PA1
CU230P-2 CAN	(V4.3)	6SL3243-0BB30-1CA1
CU240B-2		6SL3244-0BB00-1BA0
CU240B-2 DP		6SL3244-0BB00-1PA0
CU240E-2		6SL3244-0BB12-1BA0
CU240E-2 DP		6SL3244-0BB12-1PA0
CU240E-2 F		6SL3244-0BB13-1BA0
CU240E-2 DP-F		6SL3244-0BB13-1PA0

1.2 Commissioning

When commissioning the SINAMICS G120 to run a 60Hz motor the user will need to be aware of the required maximum frequencies (P1082) and the reference parameters (P2000). Following motor parameter changes (e.g. P0310 to 60Hz) the SINAMICS pool control units will automatically calculate the maximum frequency and reference parameters. The calculated values will be based on the motor rated frequency (P0310). These are changed when exiting quick commissioning (P3900>0) or performing an automatic motor calculation (P0340 = 1).

NOTE	P0573 can also have an effect on the calculation of reference parameters

Example: **Motor data set-up of a 60Hz motor**

The following parameter changes are given to show how the frequency reference parameters are changed:

P0010 = 1

P0304 = 460V

P0305 = 0,42A

P0307 = 0,14kW

P0308 = 0,73

P0310 = 60Hz

P0311 = 1650U/min

P3900 > 0

After exiting quick commissioning the following parameters will be changed automatically.

P1082 = 1800 rpm   previously 1500 rpm

P2000 = 1800 rpm   previously 1500 rpm

Various motor parameter calculations that are based on the motor rated frequency will also be changed. These ate automatically calculated following a motor calculation (P0340 = 1) or when quick commissioning is exited with P3900 = 3.

NOTE	The motor frequency parameter **cannot** be changed when commissioning through the IOP quick commissioning wizards. When commissioning via the IOP, P0310 will need to be changed directly via the parameter list. The parameter list section is found under the menu tab of the IOP. In this case follow the parameter changes above.

1.3　Relevant Parameter

Function	Parameter	Description	Setting	Description
Drive commissioning parameter filter	P0010	parameters that can be written	1	Quick commissioning
Rated motor voltage	P0304	Sets motor voltage	460V	Rating plate
Rated motor current	P0305	Sets motor current	0,42A	Rating plate
Rated motor power	P0307	Sets motor power	0,14kW	Rating plate
Rated motor power factor	P0308	Sets motor power factor	0,73	Rating plate
Rated motor frequency	P0310	Sets motor frequency	60Hz	Rating plate
Rated motor speed	P0311	Sets motor speed	16501/min	Rating plate
Automatic calculation, motor/control parameters	P0340	Setting to automatically calculate motor parameters	xx	
Inhibit automatic reference value calculation	P0573	Inhibits the calculation of reference parameters	xx	0 -> no 1 -> yes
Maximum speed	P1082	Sets the highest possible speed..	xx	defined appropriately when p0310, p0311, and p0322 are changed
Reference speed reference frequency	P2000	Sets the reference quantity		Calculated P0340=1
Completion of quick commissioning	P3900	Exits quick commissioning	>0	(sets P0010 = 0)

For more detailed parameter information please see the relevant parameter list
SINAMICS G120, Edition: 11/2009 FW 4.3