

Technical instruction

ACS250 micro drives, 110-480 V

Displaying motor speed in rpm



Overview

The ACS250 allows all speed related parameters to be displayed and entered in rpm instead of Hz. By default, the ACS250 displays the operational speed and all speed related parameters in Hz, with the option to display amps. By setting the value of the 'motor rated speed parameter' to the motor rated speed in rpm, the ACS250 will add the ability to display the motor speed and the speed related parameters in rpm.



Parameters

Motor rated speed parameter

Motor rated speed parameter is 9908.

When this parameter is set to zero, the speed of the motor and associated speed parameters will be displayed in Hz with the option to display amps. The display can be changed to Hz or amps (but not rpm) during normal operation using the navigation button on the keypad.

When the rated speed of the motor has been entered in parameter 9908, all speed related parameters can be displayed in rpm. The LCD display can now be toggled between rpm, Hz, or amps during normal operation.

Also, with the motor nominal speed entered in parameter 9908, the slip compensation will be activated automatically, giving improved shaft speed regulation.

The minimum available non-zero value for the motor rated speed parameter is the synchronous speed of a 20-pole motor (300 rpm).

Example

(For a 2-pole 50 Hz motor)

If the operating speed and all speed related parameters should be displayed in Hz then 9908 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. The display can be changed to show amps by pressing the navigation button with the drive in normal operation

If the operating speed and all speed related parameters should be displayed in rpm then 9908 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. The user will need to change the display from Hz to rpm (or amps) using the navigation button on the keypad when the drive is in normal operation.

Speed related parameters shown/entered in rpm (when value entered in 9908)

Parameter numbers	Description
2008, 2007	Maximum speed, minimum speed
1202 thru 1205	Preset speed 1 thru 4
2501, 2500	Skip frequency, skip frequency band
2611	V/F characteristic frequency adjust

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.

ABB Motors								CE	
3 ~ motor		M2AA 200 MLA 4							
		IEC 200 M/L 55							
		No							
		Ins.cl.		F		IP 55			
V	Hz	kW	r/min	A	cos φ	IA/IN	'E/s		
690 Y	50	30	1475	32.5	0.83				
400 D	50	30	1475	56	0.83				
660 Y	50	30	1470	34	0.83				
380 D	50	30	1470	59	0.83				
415 D	50	30	1475	54	0.83				
440 D	60	35	1770	59	0.83				
Cat. no		3GAA 202 001 - ADA							
6312/C3		6210/C3		180 kg					
		IEC 34-1							

Rated speed:
Enter into 9908

Enter value to allow parameters to be displayed and entered in rpm. Leave at 0 for display/programming in hertz.

For more information please contact your local ABB representative or visit:

www.abb.com/drives

© Copyright 2014 ABB. All rights reserved.
Specifications subject to change without notice.