

BECKHOFF

AX5000 Servo drive

Information Cogging Compensation |
EN



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Cogging Compensation



Available from firmware v2.13

The cogging compensation function is available with firmware v2.13 and higher.

This documentation applies to the AX5000 servo drive. The chapters contain information on how to parameterize cogging compensation via the corresponding IDNs.

You then have the option of interpreting answers and reading out errors. Finally, information is provided about different IDNs that are important for the function.

Function

In synchronous servomotors with permanent magnets, fluctuating torques occur at low speeds. The servomotor becomes unstable. Cogging Compensation significantly improves the smooth running characteristics of the servomotor.

The function is always activated at the factory. Below a speed of 500 rpm, the speed fluctuation is reduced significantly.

Requirement

The function must be available on the electronic identification plate, the encoder memory of the servomotors. The TC Drive Manager recognizes whether the function is available when the motor is scanned.

Parameter description

The following information explains which S-parameters and P-parameters are involved in the function. The commissioning scenarios serve as examples. The configuration is always dependent on the application and various environmental and operational conditions.

Parameter	Name	Description
P-0-0630	Cogging compensation control	Switching the function on and off. Selection of the source of the compensation parameters.
P-0-0631	Cogging compensation status	Shows the current status of the function
P-0-0632	Cogging compensation parameter	Coefficients of the function
P-0-0633	Cogging compensation feedforward torque	Actual impressed compensation torque

P-0-0630

[-] P-0-0630	Cogging compensation control		
[+]	Control	[0: Use encoder memor...	[0: Use encoder memory cogging comp para if available
	Torque / Force scaling	1	[0: Use encoder memory cogging comp para if available
[+]	P-0-0631	Cogging compensation status	1: Use encoder memory cogging comp para
[+]	P-0-0632	Cogging compensation parameter	2: Use drive memory cogging comp para
[+]	P-0-0633	Cogging compensation feedforward torque	3: Use startuplist cogging comp para
[+]	P-0-0634		4: Cogging comp off

Control

Value	Selection	Information
0	Use encoder memory cogging comp para if available	Default value The parameters are taken from the encoder memory.
1	Use encoder memory cogging comp para	The parameters are taken from the encoder memory. No error message is issued by the servo drive if the values are incomplete.
2	Use drive memory cogging para	The parameters are taken from the memory of the servo drive.
3	Use startup list cogging comp para	The parameters are part of the start-up list of the servo drive.
4	Cogging comp off	Deactivating the function

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