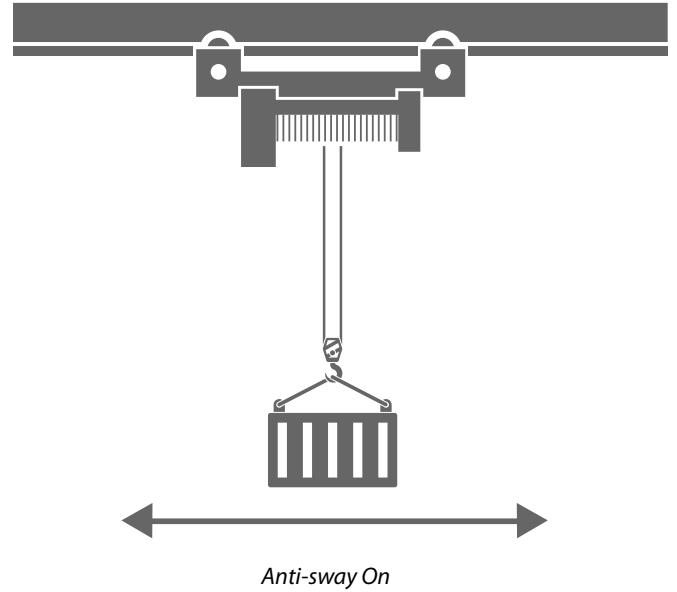
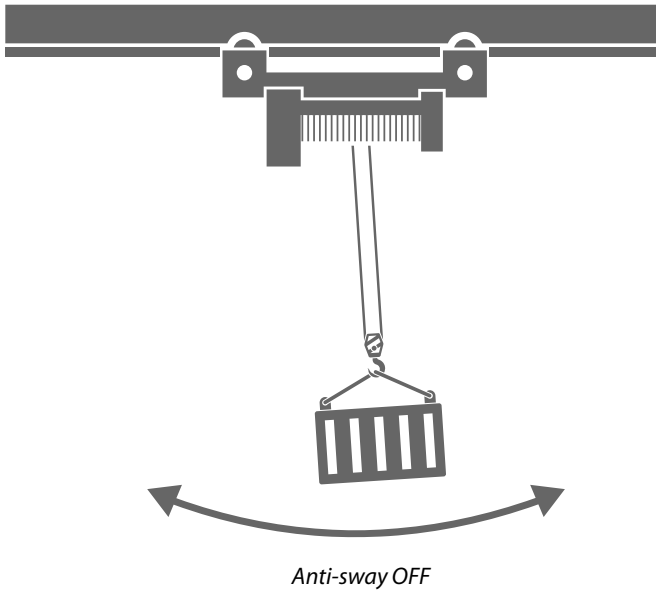


Feature fact sheet

VACON® NXP drive anti-sway functionality

Integrated sensorless control



The VACON® NXP drive saves time and costs by controlling the sway in cranes with the help of integrated sensorless control in its anti-sway functionality.

Cranes are typically used in manufacturing or maintenance processes, where productivity and safety are considered the most important requirements. Swinging of the load during the crane's movement is a severe problem affecting its ability to operate efficiently. Delays in production can be greatly reduced if load sway can be prevented.

Danfoss' anti-sway solution provides:

1. Better user experience

Simple commissioning without complex tuning during commissioning of the crane. The anti-sway feature is easy to install with a license key, and easy to configure and adapt to the crane type and movement with only 2–3 additional parameters to be configured in the field.

2. Reduced structural stress

It increases the lifetime of the crane and reduces the stress on mechanical structures, for example, trollies, hoists or gantries.

3. Increased productivity

Using the anti-sway functionality enables an improvement in productivity of 10–15 % and a high return on investment.

4. Improved system efficiency

Reduced stress on the complete crane system reduces costs throughout its

lifetime and improves its operational efficiency.

Up to 15% improved productivity
with anti-sway functionality

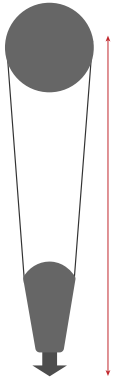
Feature	Benefit
Integrated sensorless control	No extra hardware required No encoder or external sensor required to access anti-sway functionality
Independent axis control	No drive-to-drive communication required between hoist, trolley and travel axes to access anti-sway functionality
Standard NXP hardware	Easy to order Functionality can be activated by generating the license during ordering process or upgrading in the field later using the license key.
Only 2–3 parameters to set	Easy to configure Reduces commissioning time of the crane Improves productivity
No skilled operator required to commission and operate the crane	Enhanced user friendliness

Danfoss anti-sway functionality is built in to crane application software for **NXP products**. It works based on trolley and travel motion. No communication is needed with hoist drive to perform anti-sway functionality.

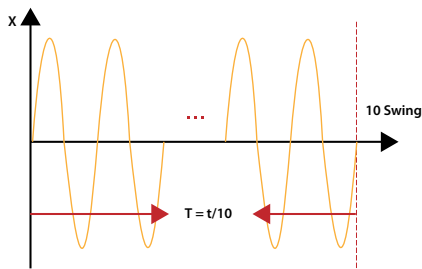
There are two different methods to eliminate load sway:

1. Maximum rope length

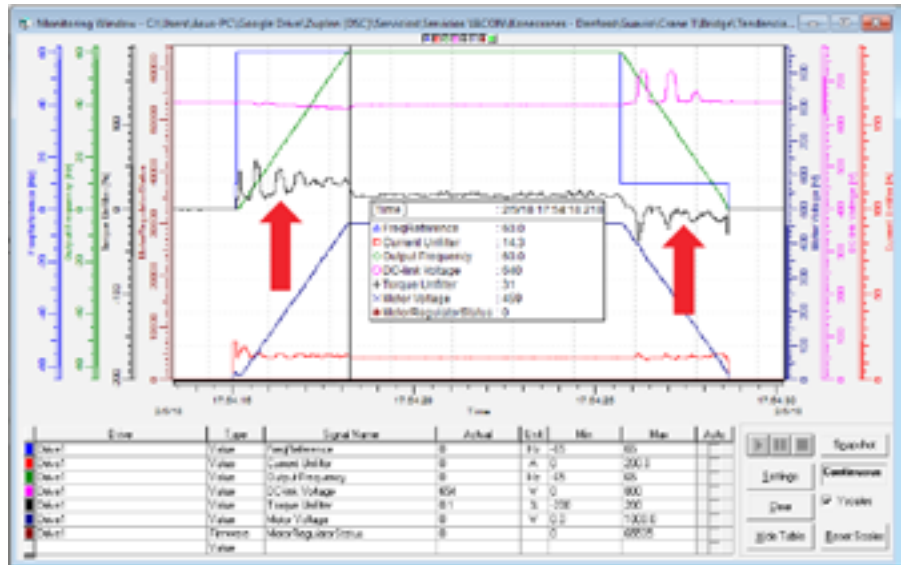
Maximum rope length (in cm), to be entered in this parameter. From drum to hook touch down to the ground or just above.



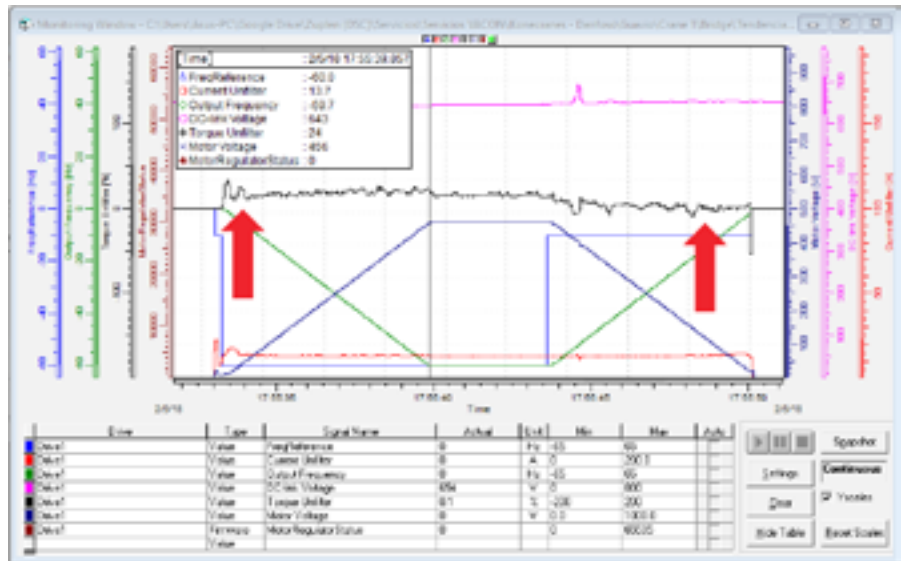
2. Average swinging time



- Lower the hook/load to the lowest practical position.
- Run the crane with speed and give stop command
- Measure the time from 5–10 swings (back and forth) and calculate the swinging period.
- Enter the swinging period in the parameter.



Actual motor torque behavior when anti-sway functionality is disabled (torque fluctuation during acc/dec period) monitored through VACON® NCDrive software tool



Actual motor torque behavior when anti-sway functionality is enabled (torque fluctuation during acc/dec period) monitored through VACON® NCDrive software tool.

