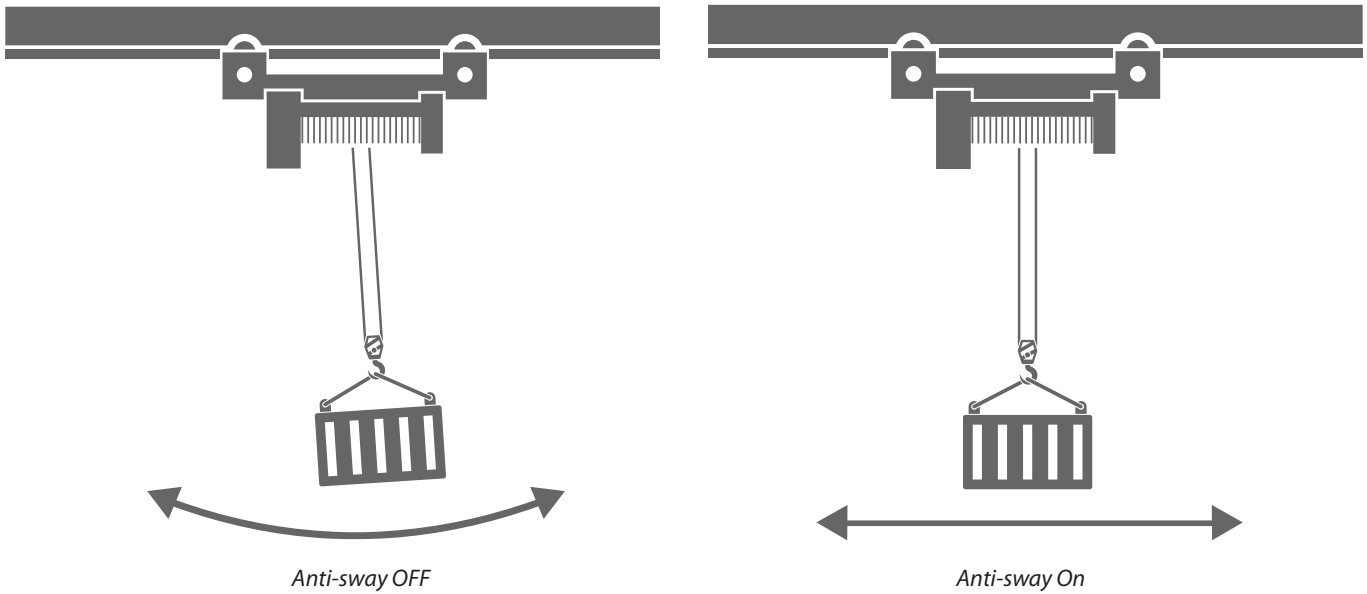


Feature fact sheet

# VACON® NXP drive **anti-sway** functionality

## Integrated sensorless control



The VACON® NXP drive saves time and expense 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 loads during crane movement is a severe problem affecting operation efficiency. 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**

Anti-sway functionality increases the lifetime of the crane and reduce the

stress on mechanical structures, for example, trolleys, hoists or gantries.

**3. Increased productivity**

Using the anti-sway functionality enables a 10–15% improvement in productivity 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

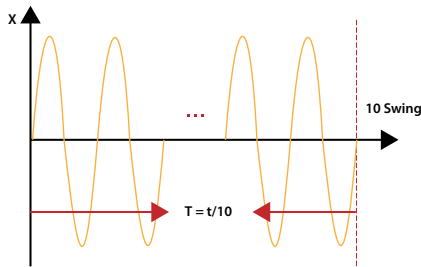
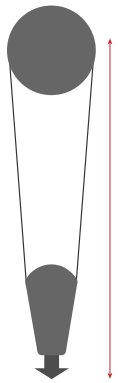
Feature	Benefit
Integrated sensorless control	No extra hardware required No encoder or external sensor required to access anti-sway functionality
Independent axis control	No drive-to-drive communication required between hoist, trolley and travel axes to access anti-sway functionality
Standard VACON® 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 **VACON® NXP products**. It works based on trolley and travel motion. No communication with the hoist drive is required to operate anti-sway functionality.

There are two different methods to eliminate load sway:

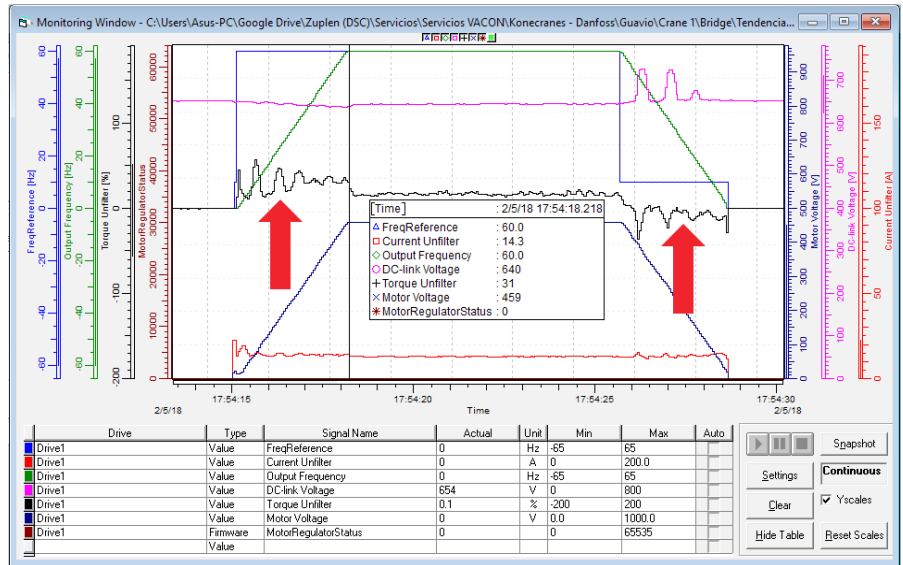
### 1. Maximum rope length

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

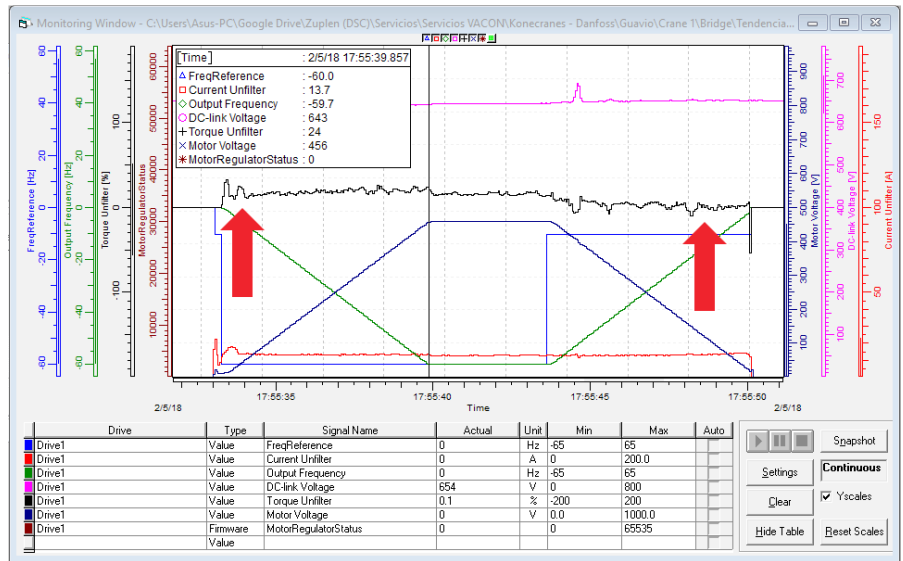


### 2. Average swinging time

- 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 acceleration/deceleration period) monitored through VACON® NCDrive software tool.



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

