

# Crane control and safety with the ACS880 industrial drives



# Safety. Performance. Efficiency. Speed. Everything counts.

You design cranes to adapt your customer's needs. You consider their processes and business, whether they are in steel, paper or the waste handling industry. You know that everything counts when selecting crane control for hoist, trolley and long travel movements. Our ACS880 industrial drives with built-in crane control software and range of safety functions give you the flexibility to meet your customer's crane control needs.



# ACS880 drives with a built-in crane control software

## Crane control highlights

#### Sensorless anti-sway

Damps load swaying in trolley and long travel directions at the same time.



#### Mechanical brake control Integrated mechanical brake control with

crane system check and torque memory.



#### Hoist speed optimization

Optimizes hoist speed in the motor field weakening area.

Torque



#### Master/follower

Drive-to-drive link allows fast communication between drives in master/follower operation in speed-torque or speed-speed control modes.



Synchro control Synchronizes the movement of multiple hooks.



Direct torque control (DTC) ABB's signature motor control technology provides precise speed and torque control. Simplifying your world without limiting your possibilities.

### Extensive list of add-ons

Crane control via I/O and fieldbus interfaces

Wide range of interfaces for connecting crane controls like joystick, radio control and pendant controller.

#### Speed and position feedback

I/O extension modules enable connecting speed feedback interfaces, like incremental and absolute encoders.

#### Removable memory unit

Stores the drive's software and settings for fast and easy commissioning and maintenance.

#### Control panel and PC tool

For startup, configuration and monitoring of drive's signals and parameters.

#### Drive based safety

Safe torque off is built-in as standard in the drive. An optional safety functions module provides additional safety functions achieving up to SIL 3 or PL e safety level.

#### PLC based safety

AC500-S safety PLC offers a flexible platform for extending the crane safety even further.

#### Custom crane solutions with a PLC

Our AC500 range of PLCs gives you freedom to develop crane solutions when complex control or extensive inputs and outputs are needed.





# ACS880 drives with built-in sensorless anti-sway control

### Operating mechanics of the anti-sway control program

Load sway can occur in trolley and long travel movements. The ACS880 drive's anti-sway control program automatically compensates for it when it happens. The control program creates a mathematical model of the crane's pendulum. It estimates the pendulum's time constant by continually measuring the hoist position and load properties, and factors in the swing velocity and angle. When the operator changes the speed of the crane's travel, the drive quickly recalculates the required speed reference to compensate for the crane's speed change, preventing the load from swaying.



### Key benefits of the anti-sway control

- Improves productivity by letting the crane operator fully focus on moving the goods rather than manually controlling the sway.
- Lowers risk of damage to the load.
- Reduces mechanical wear and stress to the crane by eliminating the need for quick and jerky manual sway control movements.
- Lowers risk of accidents caused by uncontrolled sway.
- Built into the drive. Works without external anti-sway sensors or other hardware.



The drives communicate with each other either via a D2D link, or by analog or fieldbus communications.

### Contact us

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

www.abb.com/drives/cranes www.abb.com/drivespartners © Copyright 2015 ABB. All rights reserved. Specifications subject to change without notice.

