Anti-sway (sensorless)

Improve load positioning accuracy and increase crane efficiency while reducing risk.

The anti-sway function prevents load sway on the crane due to acceleration and deceleration of the trolley and the bridge. Through the operator assistance function and the predefined parameter, dynamic correction is automatically carried out with readjustment.

Benefits

- **Save production time**
  Reduce working cycle time and increase positioning precision by preventing load sway.

- **Increase crane service life**
  Reduce mechanical shocks and stress on the crane mechanism and structures due to over-correction and pulsating during positioning.

- **Reduce risks**
  - Avoid an excessive and dangerous load swaying.
  - Reduce operator stress and fatigue as a source of error.

- **Easy to install**
  No additional sensors or external devices are needed.
Operating principle

The main object is to control the load sway without additional sensors (use of encoder only when higher accuracy is needed). This function works simultaneously on 2 axis (including trolley, bridge of crane and hoisting for position feedback).

It uses the same electrical operator interface without modification to wiring and takes control to manage the entire system via an CANopen field bus.

Characteristics

- **Estimator:**
  Load sway estimation based on an adaptive model using drive speed, internal signals and cable length

- **Controller:**
  Adaptive continuous controller providing anti-sway correction to the operator command

- **Working area control:**
  Deactivation of anti-sway function when leaving working area.

Typical applications

- **Industrial cranes**
  - Overhead travelling cranes
  - Gantry cranes

Typical architectures

- **Optimized hoisting**
  Compact / CANopen / Drive controller / ATVIMC

- **Optimized hoisting**
  Compact / CANopen / Logic controller / M238

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