SIMOCRANE
Drive-Based Sway Control
V1.0 SP1 HF1
Siemens Cranes
Our product portfolio

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<td>Basic Technology</td>
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High Performance

- (Remote) CMS
- Sway Control
- Skew Control
- 2D-Trajectory
- Truck Position System
- ECO Technology
- Drive-Based Sway Control

Mid Performance

- CMS Lean
- Drive-Based Technology

Siemens Cranes
Our product portfolio

- SIMOCRANE
- Platform
- Motion Controller
- Drive Controller
- Drives
- Motors
SIMOCRANE Sway Control Solution for High-Performance Crane Applications

SIMOCRANE CeSAR standalone
- STS, GSU
  - Basic license: 6GA7200-1AA01-0AA0
  - Advanced license: 6GA7200-1AA01-1AA0
  - V2.1 SP2

- OHBC, Gantry crane
  - Basic license: 6GA7200-1AA00-0AA0
  - Manual license: 6GA7200-1AA00-2AA0
  - V4.2 SP1

SIMOCRANE SC integrated
- STS, GSU
  - Basic license: 6GA7200-0AA01-0AA0
  - Advanced license: 6GA7200-0AA01-1AA0
  - V2.1 SP2

- OHBC, Gantry crane
  - Basic license: 6GA7200-0AA00-0AA0
  - Manual license: 6GA7200-0AA00-2AA0
  - V4.2 SP1

SIMOCRANE CeSOR V2.0 HF1
- Outdoor camera
  - 6GA7202-1AA10-xxx1

- Indoor camera
  - 6GA7202-1AA22-0BA1

- Reflector
  - 6GA7201-1AA0x-0AA0

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SIMOCRANE Sway Control Solution for Mid-Performance Crane Applications

Solution for Single-axis

Package: 6GA7280-1AA10-0AB0 *

*) Based on the SINAMICS FW V4.7 HF11 Cranes

Control Units
- CU310-2 DP
- CU310-2 PN

AC/AC drives
- PM340/
  PM Chassis
- PM250
- PM240-2
  (FSA-FSC)

Solution for Multi-axis

License for Multi-axis: 6SL3077-6AA00-2AB0**

**) Based on the standard SINAMICS FW as of V4.7 HF22

Control Units
- CU320-2 DP
- CU320-2 PN

DC/AC drives
- Crane Cabinet Modules
- Chassis
- Book-size

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SIMOCRANE Drive-Based Sway Control
V1.0 SP1 HF1 – Functional Scope

- Sway Control Technology in SINAMICS OA (Open Architecture)
  - Single-axis solution for AC/AC drives (CU310-2 DP & CU310-2 PN)
  - Multi-axis solution for DC/AC drives (CU320-2 DP & CU320-2 PN)
  - Used for Trolley (cross travel) or Gantry (long travel) with/without encoder
  - Embedded in SINAMICS drives

- Tailored functions for mid-performance market
  - Sway damping in Manual operation
  - Changeable damping factor by operator
  - Disable sway damping at any time
  - Specified behavior in pre-limit switch or limit switch area
Principle of sway control

\[ \ddot{\varphi} = -\frac{g}{l} \varphi + \frac{1}{l} a \]
Single-axis applications
SIMOCRANE Drive-Based Sway Control Solution – Ready to Run (CU310-2 DP)

‘Ready to Run’ solution on memory card (CF-card)

- Preconfigured project on CF-card
  - Controlled via onboard-I/O
  - Digital Master-switch up to 4 speed-levels
  - Use of Drive-Based Technology
  - Without encoder

- No engineering necessary

- Start commissioning immediately after crane installation

- Simple commissioning via onboard Basic Operator Panel BOP20

- Optional commissioning via SINAMICS web server on PC or Tablet

Highlight in V1.0 SP1
SIMOCRANE Drive-Based Sway Control Solution – Ready to Apply (single-axis)

Pre-configure via scripting

Application note for single-axis
SIMOCRANE Drive-Based Sway Control Solution – Upgrading cranes (single-axis)

Easily upgrading for existing cranes

- Few steps for installation
- Simply parameterizing for integration in existing cranes
- Engineering and commissioning refer to Operating manual
SIMOCRANE Drive-Based Sway Control
Scope of Supply (single-axis)

Order number (MLFB) of the package
6GA7280-1AA10-0AB0

- Memory card (CF card)
  - SINAMICS FW V4.7 HF11 for Cranes
  - Application with Drive-Based Sway Control and Drive-Based Technology
  - Required license key

- DVD with
  - Installation for DBSC
  - Standard applications
  - Documentation

- License Certificate
  - License for single axis
Multi-axis applications
SIMOCRANE Drive-Based Sway Control Solution – Ready to Apply (multi-axis)

- Standard applications for Ready to Apply

Pre-configuring via script

1. Type of axis
2. Confirmation on DBSC pre-conditions
3. Choice of DBT interconnection
4. Drive control config

Guided by Application note for multi-axis
Easily upgrading for existing cranes

- Few steps for installation
- Simply parameterizing for integration in existing cranes
- Engineering and commissioning refer to
  
  Application note for multi-axis
SIMOCRANE Drive-Based Sway Control
Scope of Supply (multi-axis)

- License for Drive-Based Sway Control (Multi-axis)
  
  **6SL3077-6AA00-2AB0**
  
  - License Certificate

- Download from SIOS Internet
  
  - Installation for DBSC
  - Standard applications
  - Application notes
  - Operating Manual

- Memory card (CF card)

  **6SL3054-0EH00-1BA0**

  - Standard SINAMICS FW V4.7 HF22

Not included in delivery scope

[https://support.industry.siemens.com/cs/de/de/view/109483531](https://support.industry.siemens.com/cs/de/de/view/109483531)
Use Case 1
Simple OHBC with hanging key button
Configuration Example for Use Case 1 (single-axis)
OHBC with Onboard I/O
Use Case 2
OHBC crane with remote control

Waste incineration plant crane
Configuration Example for Use Case 2 (single-axis) OHBC with PLC via Profibus

1. SIMATIC S7-300
2. HMI SIMATIC S7-300

Main Hoist
Cross Travel
Long Travel

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Use Case 3
OHBC crane with radio remote control

assembly crane
Configuration Example for Use Case 3 (multi-axis) OHBC with PLC via Profinet

1.  
2.  

![Diagram]
Commissioning Guideline
SIMOCRANE Drive-Based Sway Control
Overview of Commissioning Guideline

- Install OA-DBSC
- Import Standard project
- Configure DO
- Enable OA/brake control/ free blocks
- Run Script file
- Basic Setting in Sinamics
- Connect DBSC in Sinamics
- Download OA to drive
- Compile and download

Preparation with BOP20 or web server

Commissioning Drive
Parametrizing DBSC
Parametrizing DBT

Ready to Apply
Ready to Run
Upgrading cranes

Solution -- 'Ready to Run' (CU310-2 DP)
Solution -- 'Ready to Apply'
Solution -- Upgrading cranes
Commissioning Guideline to Solution for ‘Ready to Run’ on CF-card

1. Prepare with Basic Operator Panel BOP20 or Sinamics web server

2. Parameterization
   a. for Drive
   b. for Drive-Based Sway Control
   c. for Drive-Based Technology
Commissioning Guideline to
Solution for ‘Ready to Apply’ with standard projects

1. Install OA-DBSC in Starter
2. Import Standard project
3. Configure Drive Object
4. Enable OA & extended brake control & free blocks in Drive Object (DO)
5. Run Script file
6. Download OA to CF-card (only required by Multi-axis application)
7. Compile and download to CF-card
8. Parameterization
   a. for Drive
   b. for Drive-Based Sway Control
   c. for Drive-Based Technology (optional)
Commissioning Guideline to
Solution for Upgrading the existing project

1. Install OA-DBSC in Starter

2. Enable OA & extended brake control in Drive Object (DO)

3. Basic Setting in Sinamics (Cycle time, control mode, ..)

4. Connect DBSC in Sinamcis (setpoint channel, input & output signals,..)

5. Download OA to CF-card

6. Compile and download to drive (CF-card)

7. Parameterization
   a. for Drive (if required)
   b. for Drive-Based Sway Control
SIMOCRANE Drive-Based Sway Control Training

New training course with:
- Sinamics basic knowledge
- Simocrane Drive-Based Technology
- Simocrane Drive-Based Sway Control
SIMOCRANE Drive-Based Sway Control Demo-kit

- **For training of commissioning**
  - with BOP 20
  - with Starter
  - with Sinamics Webserver

- **For test of customized adaptation**

- **For customer presentation**

- **Components**
  - PM340 * 1AC 230V
  - Asynchronmotor 1LA7060 -4.. with/without encoder
  - CU310-2 DP with BOP 20
  - Emergency Stop Pushbutton (Safety integrated function)
  - Switches hard-wired to CU310-2 DP
Product Support for SIMOCRANE Drive-Based Sway Control

- Catalogue CR 1 Edition 2015

- Operation instruction

- Product News about Delivery release
  To be updated!

- Flyer
  http://w3app.siemens.com/mcms/infocenter/content/en/Pages/order_form.aspx?nodeKey=key_9180778&infotype=brochures

- SW Download

- Slides available in SharePoint (with Video)
  https://workspace.automation.siemens.com/content/10002871/Productmanagement/Shared%20Documents/Forms/Presentations.aspx
SIMOCRANE Product Support

➢ SIMOCRANE Product-Support (news, FAQs, Manuals, application note..) in Internet
   https://support.industry.siemens.com/cs/ww/de/ps/20087

➢ SIMOCRANE Training

➢ Support request via Internet (Product → Simocrane)
   http://support.automation.siemens.com

➢ Hotline EUROPA
   – Telefon: +49 (0) 911 895 7 222
   – Fax: +49 (0) 911 895 7 223
   – Email: support.automation@siemens.com

➢ Hotline AMERICA
   – Telefon: +1 423 262 5710
   – Fax: +1 423 262 2231
   – Email: support.america.automation@siemens.com

➢ Hotline ASIA / PACIFIC
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   – Fax: +86 10 6474 7474
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Thank you for your attention!

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