



## SINAMICS Startdrive

Intuitive converter engineering and  
perfect interaction with SIMATIC in the  
Totally Integrated Automation Portal

# Your gateway to automation in the Digital Enterprise



Digital Workflow



Integrated Engineering



Transparent Operation

The Totally Integrated Automation Portal (TIA Portal) allows you to completely access all of the digitalized automation – extending from digital planning through integrated engineering up to transparent operation. The new version shortens your time to market, for example using simulation tools, increases the productivity of your plants and systems through additional diagnostic and energy management functions – and offers you a higher degree of flexibility through connection to the management level. System integrators, machinery construction companies as well as companies operating plants benefit from these new possibilities. Summarizing, the TIA Portal provides the perfect access to automation in the Digital Enterprise. In addition to PLM and MES, within the scope of the Digital Enterprise Software Suite, it rounds off the holistic and seamlessly integrated portfolio of Siemens for companies en route to Industrie 4.0.

## Digital Workflow with the TIA Portal – you work openly, virtually and networked with:

- Flexible cloud solutions
- Virtual commissioning with digital twins
- Open interfaces for higher connectivity

## Integrated Engineering with the TIA Portal – shorten your time to market, for instance through:

- Coordinated collaboration in interdisciplinary teams
- Automatic generation of automation solutions instead of manual programming

## Transparent Operation with the TIA Portal – boost your productivity, for instance through:

- Higher availability of production plants and machines
- Energy management: Energy transparency for energy-saving according to ISO 50001

## Drive Engineering with SINAMICS Startdrive

The TIA Portal includes SINAMICS Startdrive to intuitively integrate SINAMICS drives into the automation landscape. The same operating concept, elimination of interfaces and the high level of user friendliness make it possible to quickly integrate SINAMICS converters into the automation environment and commission them using the TIA Portal.

Applications involving pumps, fans and compressors can be implemented especially efficiently and intuitively, for example HVAC systems along with water and wastewater plants. Using integrated motion functions, the motion control can be completely integrated and implemented in a time-saving fashion, for example for elevators, cranes, conveyor belts and storage systems as well as handling systems. Because you always work with the TIA Portal, it is not important whether these motion functions are realized in the control system or in the drive.



# Effectiveness through user friendliness

## An integrated and seamless engineering platform for automation and drive technology

With the integration of SINAMICS Startdrive, the outstanding user friendliness of the TIA Portal is now available for drive technology. As a consequence, a high degree of functionality with simple operability is achieved.

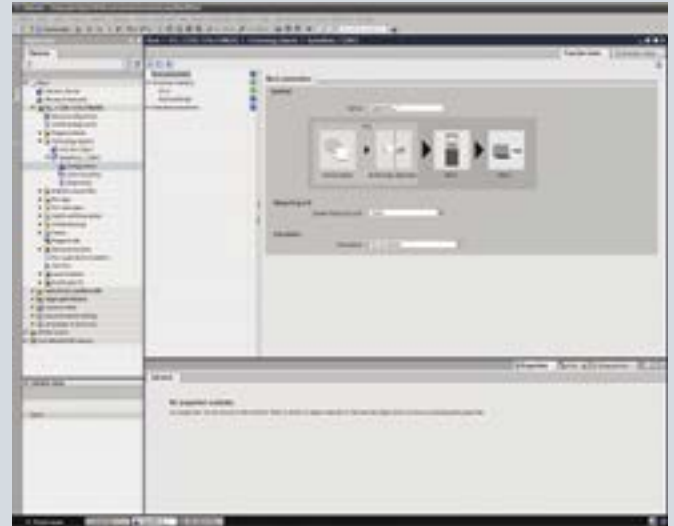
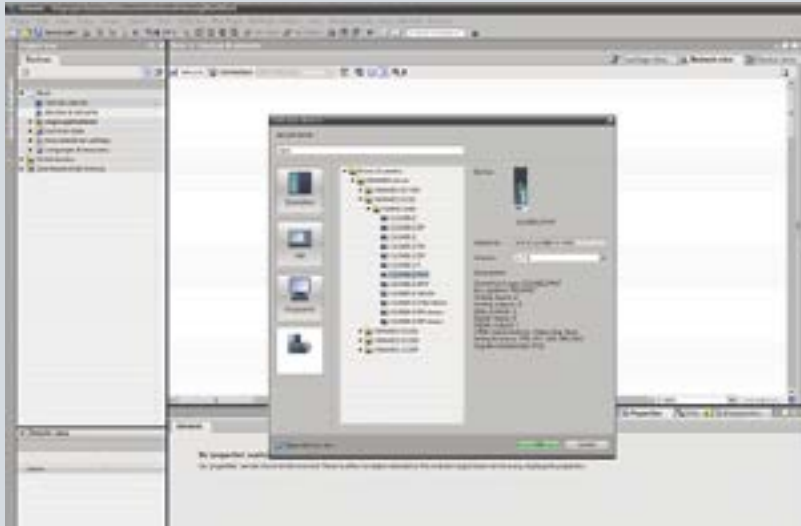
- The same user navigation for control system, HMI and drive technology increases the engineering productivity and reduces the potential for making errors.
- A common hardware configuration for all components of the application facilitates that the converter automatically goes online, even beyond network boundaries (routing/remote maintenance). This significantly simplifies commissioning.
- Common data management for the control system and converter in one tool automatically guarantees consistency – the bus address and message frame types, for example. As a consequence, commissioning times and potential errors are significantly reduced.
- A common library concept guarantees the simple reusability of the converter, including the parameters and hardware components.
- The effective and intuitive communication connection between the converter and the control using drag and drop simplifies configuring considerably.

- Useful functions such as undo/redo or copy/paste, known from the Windows environment, facilitate an intuitive workstyle, and allow drive configurations to be simply copied.

## High degree of user-friendliness of SINAMICS Startdrive

- Users can optimally parameterize their converters supported by user-friendly wizards and screen forms.
- Based on a transparent parameter list, experienced users can work quickly and efficiently.
- The various steps when engineering a converter are intuitively structured according to the particular task, and promote a structured workflow.
- Additional user-friendly functions – for example toggling between SI/US units for the converters – simplify engineering.
- Intuitive parameterization of the safety functions integrated in the drive using graphic screen forms.
- Simple configuration of the matching SIMOTICS motors.

Know-how once gained – for example how to configure a control system – can be simply applied when configuring the converter. This significantly reduces training and engineering costs.



# Perfect interaction between the converter and control

## Automation and drive technology in one environment

- All of the data required for the control and the converter are saved in a common data management system. This avoids conflicts between versions – and significantly simplifies service, for example.
- Consistency of bus address and message frame types facilitate automatic communication between the control and converter, therefore eliminating dual entries. As a consequence, complex and time-consuming programming of the bus communication is a thing of the past.
- The safety technology is fully integrated without requiring any additional tools – including PROFIsafe – and is standard for the converter and the control.

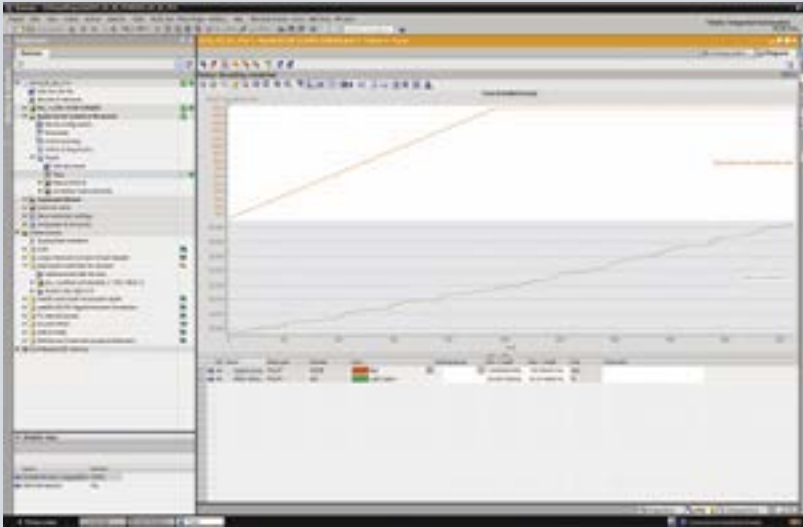
## Integrated motion control technology objects for synchronous, position-controlled and variable-speed axes

Technology objects facilitate a very simple view of technology functions – and are generated, configured and parameterized using user-friendly input screens. Technology objects handle the motion control, closed-loop control and diagnostics of the axes. When creating the technology objects, users are guided through the parameterization of the open-loop control and the converter.

- Central motion control for several axes
- Automatic alignment of technological variables between the control and the drive
- User-friendly axis diagnostics and powerful trace functionality
- Intuitive configuration and programming of applications
- Shorter engineering, commissioning and service times

**Motion control was never as simple as this!**





# Faster engineering and shorter downtimes using automatic system diagnostics and trace functionality

## Increased productivity based on automatic system diagnostics for the converter

Converter status alarms and faults are directly routed to the control using the automatic system diagnostics.

- System diagnostics for the drives are automatically available without users having to take any action.
- All converter messages are visible on the SIMATIC HMI operator panel, in the web server of the SIMATIC control and in the TIA Portal. As a consequence, faults in the plant or system are quickly localized from anywhere – simply and without any high associated costs, therefore minimizing downtimes.
- Active faults and alarms are displayed in clear text – which makes them easy to understand without requiring any additional programming.
- With the integration of SINAMICS Startdrive, system diagnostics for the converter are part of the TIA Portal, and are therefore available without any additional tools or resources.

## Trace

With SINAMICS Startdrive, a trace function is directly integrated in the converter for precise diagnostics. The trace function allows every individual converter parameter to be precisely monitored and traced – just the same as you would use an oscilloscope, however far more conveniently and efficiently.

- Productivity can be increased by recording and optimizing motion sequences
- When commissioning, the drive can be optimized using traces, which in turn means that mechanical stress on the machine can be minimized
- For diagnostics in the case of faults, individual parameters can be recorded. This allows fast troubleshooting and downtimes can be reduced
- The trace is initiated using freely definable events (trigger events), with the possibility of recording the trace before the event (pre-trigger).

However, the best is yet to come: Control and drives are handled using the same tool, which means that you can use the same user interface and operating philosophy. It does not make any difference as to whether you wish to monitor variables in the control or parameters in the converter. This allows you to save valuable time.

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