A New Way of Motion

Easy to program, system simulation, integrated safety and built-in diagnostics.

usa.siemens.com/anewwayofmotion
A new way of motion

To compete in a global market, machine builders must deliver high-performance machines that are faster, more automated and more flexible – while meeting specific customer requirements and keeping design costs in check. Siemens new way of motion control offers the innovation including an unprecedented level of integration, necessary for a sustainable competitive advantage.

Easy to program

**Motion control programming in just 3 steps**
1. Graphically configure the drive
2. Select the motion functions using technology objects
3. Programming with PLC open and proven machine libraries

The technology objects handle motion control as well as the closed loop control and diagnosis of the axes.

**Proven application libraries**
Download ready-to-apply function blocks from our vast online library, including: camming, cross-cutter, gearing, flying saw, jog path, load sharing, positioning, rotary knife, splice control, synchronism and more!

System simulation

**Simulation tools (PLCSIM) – all built in.**
The early detection and elimination of programming errors allows you to accelerate your commissioning time and increase program quality.

- Simulation is integrated into our single engineering frame work. No additional software package is required.
- Test, validate and optimize your application code independent of physical hardware.
- Simulate and troubleshoot controller, drive axis, HMI applications and complex motion functions in a software environment.
- Integrated Trace functionality for precise diagnosis.
- When you are satisfied with your code, experience seamless integration into “real” hardware.

**Integrated trace functionality**
You can use the real-time trace function to precisely diagnose user programs and motion applications, thus optimizing the drives. By visualizing the entire process with real-time trace, you can easily identify sporadic events in the system during commissioning and maintenance.

Simply activate the controller’s trace function to combine control and monitoring:
- With Cycle accuracy
- Comprised in the controller’s firmware

**Easy to control these functions and more!**

- Speed Control
- Measuring Probe
- Positioning
- Cam Disc
- Synchronization
- Cam/Cam Track
- Saw (flying shears)
- Gripper Feed
- Print Mark Correction
- Double Misfire
Motion Control Solution Benefits: 10 axis example

**SIMATIC S7-1500 Controller**
- Feature: Standard, safety and motion control functions on one controller
  - Value: Faster time to market with less hardware to program
- Feature: Extended motion control tasks such as gearing or camming are seamlessly integrated into one programming tool
  - Value: Cost savings in engineering, training and downtime due to easy operation
- Feature: A high degree of engineering efficiency due to graphic and tabular configuration and optimization ofcams – integrated into one programming tool
  - Value: Less complexity results in reduced engineering time and training expenses

**SIMATIC S120 Drive**
- Feature: One drive line for high performance induction and servo applications
  - Value: Reduced variances across multiple application ranges
- Feature: Plug & Play configuration with electronic nameplates
  - Value: Cost savings in engineering, training and downtime due to easy operation
- Feature: The modular and flexible S120 design allows the right fit for all requirements
  - Value: Energy efficiency with power regeneration and common DC bus

**HMI Comfort Panel**
- Feature: Integrated SD card for automatic backups
  - Value: Increase productivity for fast, easy device replacement
- Feature: Built in system-wide diagnostics to the I/O channel level enabled with a check of a box to display messages
  - Value: System generated diagnostics for less commissioning and downtime
- Feature: High Resolution –16 million color low glare display; 80,000 hr. backlight; 170 degree viewing angle
  - Value: Easy-to-read system information reduces downtime

**SIMOTICS Rotary Motors**
- Feature: Automatic configuration with DRIVE-CLIQ encoders
  - Value: Faster time to market due to less engineering time
- Feature: Thermally and mechanically isolated encoder which maximizes encoder lifetime with 1FK7 Generation 2 and 1FT7 servo motors
  - Value: Increase productivity with a robust solution
- Feature: 1FK7 servo motors utilize one cable technology (i.e. hybrid cable which combines power and feedback)
  - Value: Reduce wiring and hardware costs with simplified installation

**One Programming Tool – TIA Portal**
- Feature: Memory card provides simple and rapid drive replacement regardless of firmware
  - Value: Increase productivity
- Feature: Modular design with central and decentralized formats to provide the exact fit for every general purpose application
  - Value: Scalable solution for reduced engineering time
- Feature: Extremely robust with drive based safety functions
  - Value: Increase productivity

**Sinamics S120 Drive**
- Feature: The servo package consisting of S210 drive and 1FK7 motor is conveniently integrated into the controller
  - Value: Faster time to less engineering time
- Feature: Cost effective solution with integrated safety functions
  - Value: Reduce hardware costs
- Feature: Perfect fit for mid range servo applications
  - Value: Scalable solution for reduced engineering time
Integrated safety

One system, programming tool and network for standard and fail-safe

The integration of safety technology in standard automation reduces hardware and simplifies engineering to improve plant safety and increase productivity.

- Safety and standard control over one network
- Safety PLC library with certified blocks (utilized via fail-safe PLC)
- Drive based Safety including motion functions
- Safety Acceptance Test integrated in engineering tool

Efficient engineering in the TIA Portal – standard and safety technology in a single system

With the TIA Portal, safety is easily integrated...

... into the existing system as well as into the existing communication.

Built-In diagnostics

Uniform system diagnostics, automatically generated during device configuration

- Faster troubleshooting and streamlined maintenance for less downtime
- Reduced engineering time – no additional programming required for diagnostic information

How does it work?

Easy-to-understand faults and drive messages are automatically displayed in the TIA Portal, HMI, web server and controller system without any engineering.

Support and Consulting Services

- Industry Online Support site is your resource for comprehensive information, FAQs and application examples covering all products, systems and services in the fields of automation and drives, as well as for the process industry. Support requests may also be initiated and tracked on this site.
- Technical and Engineering Support specialists provide 24/7 advice and answers for all inquiries about functionality, handling, and fault clearance of Siemens industrial products and solutions – via phone, email, support request, and remote access.
- Regional Application Engineers provide local assistance.
- Experienced global network of Certified Solution Partners with extensive industry knowledge using Siemens components for the implementation of tailored solutions for your specific applications and timetable.
- Global support – Siemens is active in 190 countries and has an extensive channel and solution partner network. We have 280 members of our global Application Expert Community network in 19 countries, closely affiliated with industry organization such as PMMI and OMAC.

Application and Mentoring Services

Siemens is committed to making your life easier when it comes to your motion control solution. We can help you with:

- Selecting optimum solution packages from our product portfolio
- Proof of concept support for machine innovation
- Development and delivery of customized add-ons
- Providing assistance with testing and commissioning
- And more!

Siemens Basic Technical Support Services provide you with more value, reducing your Total Cost of Ownership (TCO)

- No Charge single, toll-free number with live operators
- No Charge basic technical support until product maturity during normal business hours

Contact us today!

Industry Customer Care Center
800-333-7421

800-333-7421