



# SI6

## Multi-Axis Drive System



# STÖBER

## Booksize? Pocket book!

You save valuable space in the control cabinet as with a width of just 45 mm, the SI6 drive controller is the most compact solution on the market. It provides all the features that an engineer requires.

The relationship between volume and power is unbeatable.



Original width 45 mm



For a system with six axes, an 18 cm width is sufficient for the drive controller and supply module.



## Select your solution

4, 16 or 97 axes?

A single SI6 drive controller can control up to two axes. Thanks to the module system, the number of motors or axes to be controlled can be freely scaled. If required, SI6 drive controllers can be combined with stand-alone units from the STÖBER SD6 series.

For the common energy supply, the drive controllers from the SI6 and SD6 series can be connected to each other via Quick DC-Link modules.

# Optimised energy performance

The SI6 drive controllers are connected to a central supply module. Decentralized supply units as well as fuses and cabling for each axis are dispensed with.

In addition, the usual oversizing of the power supply is avoided.

The sum of the theoretically possible power requirement is no longer decisive, but the actual maximum occurring during operation. And when using double axis modules, unused power reserves of an axis can be used for other axes.

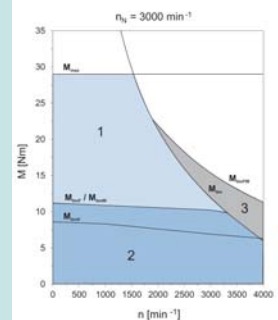
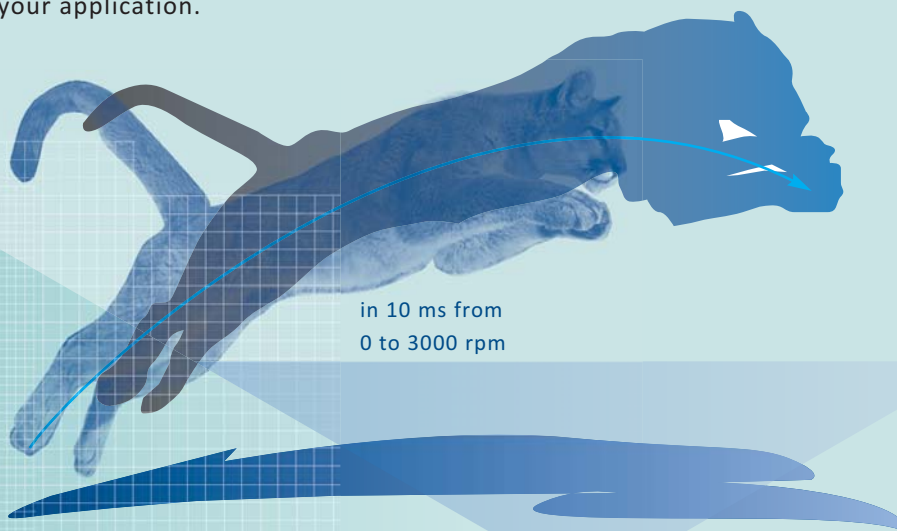
A significant reduction of space and costs!

# Precise dynamics

The SI6 provides acceleration literally as fast as lightning. For example, in combination with the STOBER EZ401 synchronous servo motor: in 10 ms from 0 to 3000 rpm. This can be used to precisely make changes to the speed. Decisive here: the interaction of the drive controller, servo motor and encoder. The SI6 processes encoder information up to 64 bit and calculates them without rounding errors (floating point arithmetic). This means the highest positioning accuracy with more than 33 million encoder resolution positions per revolution. Current encoder systems only resolve 37 bits.

The SI6 is prepared for future developments.

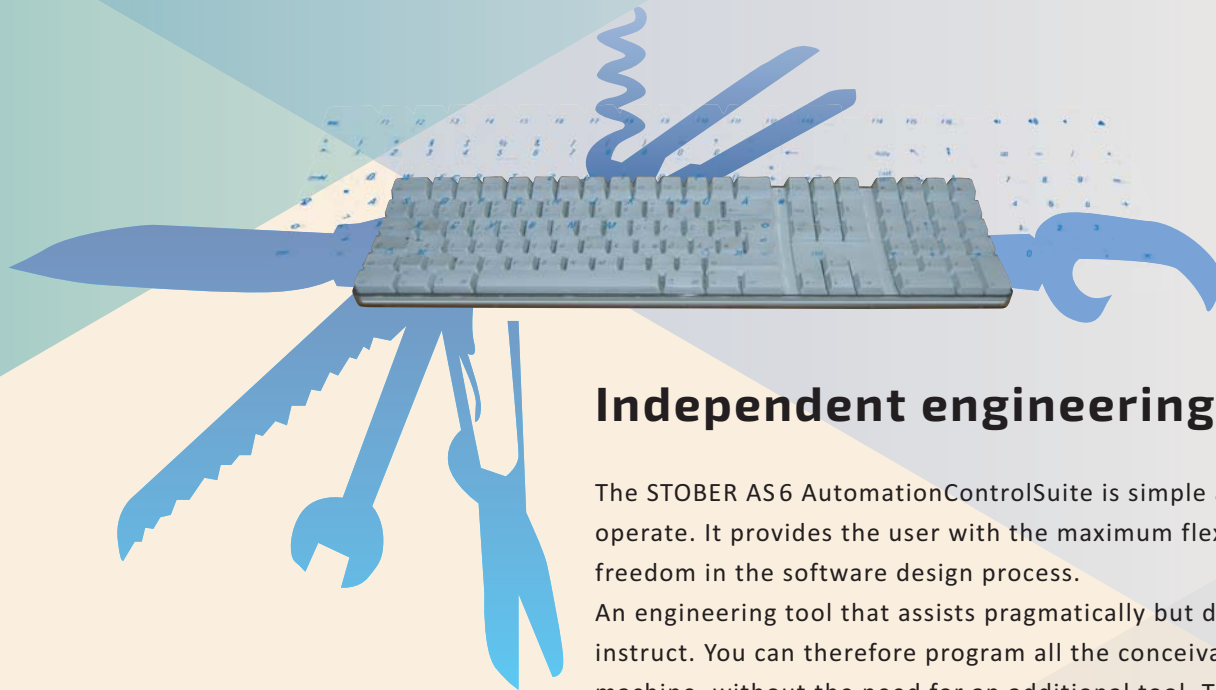
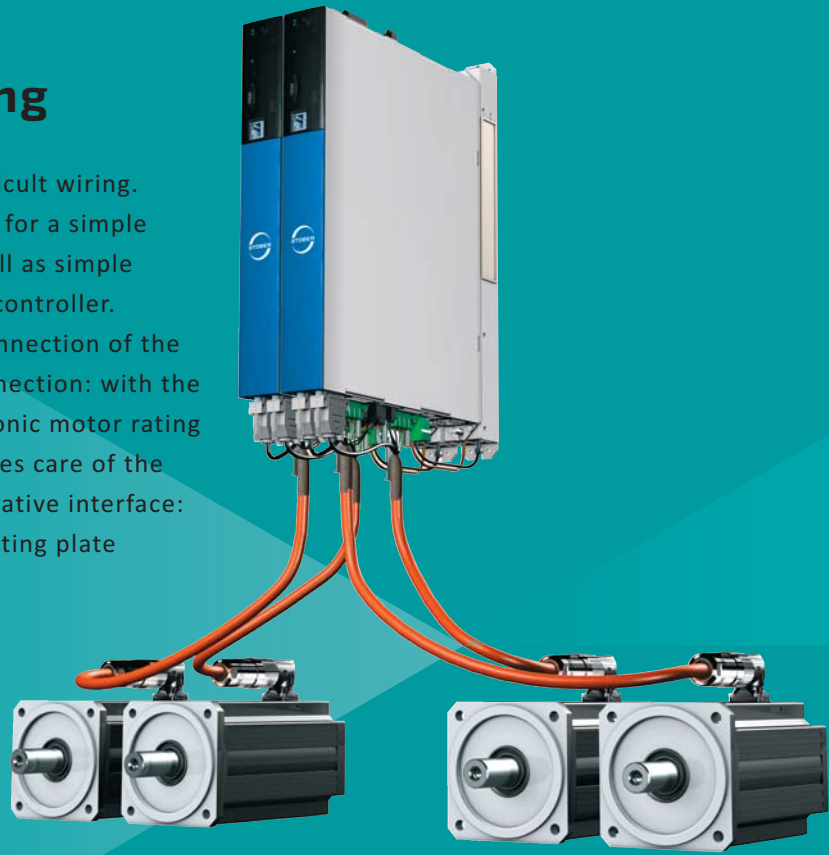
Highest dynamics: The cycle frequency of the power stage is operated at 8 kHz and the control cycle at 16 kHz. Therefore, the SI6 has 100% control of the servo motor at any time just like the different load changes in your application.



**With the STOBER system, you have a significant increase in power available in the field weakening range.**

## Less clicks, less wiring

Installation is exceptionally simple. No difficult wiring. The patented Quick DC-Link modules allow for a simple “click” into the standard copper rails as well as simple mounting and connection of the SI6 drive controller. The encoder communication and power connection of the motor takes place via a common cable connection: with the encoder system HIPERFACE DSL, the electronic motor rating plate is available that simply and safely takes care of the parameterization of motor data. The alternative interface: EnDat 2.2 digital, also with an electronic rating plate function.



## Independent engineering

The STOBAS AS6 AutomationControlSuite is simple and intuitive to operate. It provides the user with the maximum flexibility and freedom in the software design process.

An engineering tool that assists pragmatically but does not restrict or instruct. You can therefore program all the conceivable features of a machine, without the need for an additional tool. This means: less effort for updates and training.

There are no unnecessary interfaces and at the end of the design process, you have a complete backup without additional cost.

The AS6 AutomationControlSuite covers all functions included in CODESYS V3 for Motion Control (PLCopen, G-code according to DIN 66025), programmable logic controllers (PLC) (IEC 61131-3), visualization and simulation. AS6 is modular and built for the future. CODESYS updates are integrated in real-time without adversely affecting compatibility.

## Open communication

The Ethernet-based fieldbus systems EtherCAT and PROFINET are available in the SI6 drive controller as standard. With the device profile CiA 402, the SI6 can be seamlessly integrated in Controller Based and Drive Based Solutions.

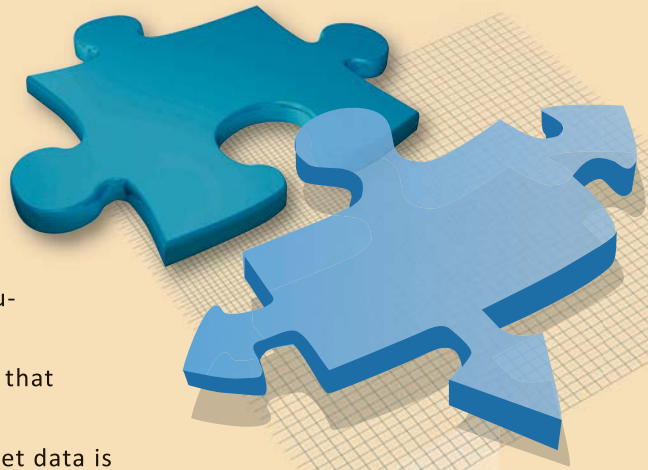
You decide which operation mode that you want to use for the respective axis and can therefore selectively influence the load for the computer and/or bus system.

The smaller dimensioning of the controller performance that is made possible provides additional saving potentials.

Thanks to Ethernet over EtherCAT-protocol (EoE), Ethernet data is transported in the EtherCAT system. This service is also available for the STOBER Engineering Tools DS6 DriveControlSuite and AS6 AutomationControlSuite. This makes it possible to use the EtherCAT infrastructure for communication with the drive controllers.

No question about it: a complete STOBER system including the motion control, drive controller and geared motor is the ideal solution. A well-integrated team, no interface issues, suitable blocks for every task.

At the same time STOBER has traditionally been open for the interaction of components from other manufacturers. There are also no "language barriers" here.



## Safety immediately

The safety concept of the SI6 drive controller is based on the STO ("Safe Torque Off") function that can be controlled via terminals as well as via Fail Safe over EtherCAT (FSoE). Both options are wear-free. Cyclic function tests can be dispensed with. And as the system responds extremely quickly, the distances to the safety fences of your system can be minimized.

The SI6 is categorized in the highest Performance Level (PL e, category 4) according to EN 13849-1.

## Heavy Duty

The SI6 looks elegant.

However, an extremely robust design is concealed behind the delicate exterior. All components – from the stable, well shielded sheet steel housing to the motor connectors – exceed the reference values of industry standards by far.

The inside is also anything but small-scale: generously designed computer capacities, high-quality components, careful workmanship.





# Technical Data

Type	Size	$I_{2N, PU}$ (4 kHz)	$I_{2N, PU}$ (8 kHz)	Dimensions [mm]
SI6A061	0	5 A	4,5 A	373 x 45 x 265
SI6A062	0	2 x 5 A	2 x 4,5 A	373 x 45 x 265
SI6A161	1	12 A	10 A	373 x 65 x 286
SI6A162	1	2 x 12 A	2 x 10 A	373 x 65 x 286
SI6A261	2	22 A	20 A	373 x 65 x 286
SI6A262	2	2 x 25 A	2 x 20 A	373 x 105 x 286
SI6A361	3	50 A	40 A	373 x 105 x 286

## Technical features overview

Connection of several drive controllers via Quick DC-Link modules.

Positioning accuracy (up to 37 bit) in conjunction with Heidenhain encoders EnDat 2.2 digital or HIPERFACE DSL (up to 20 bit) from SICK Stegmann. More than 33 million positions are recorded per revolution.

Simply assembly on the standard busbar 5 x 12 mm with Quick DC-Link.

Electronic motor rating plate thanks to encoder systems HIPERFACE DSL and EnDat 2.2 digital.

Safety: STO ("Safe Torque Off") controlled via terminals or via Fail Safe over EtherCAT (FSoE). Communication via Ethernet-based fieldbus systems such as EtherCAT and PROFINET.

CIA 402 device profile for seamless integration in Controller Based and Drive Based Solutions.

# STOBER is involved

We are known for this: only precise, individual solutions deserve the STOBER label!

We achieve this regularly as we identify the project and personally support it. This includes conceptual suggestions and idea sketches in the initial phase as well as expert advice during the entire development process. And then there is the practical teamwork: manpower for programming, installation and commissioning.

And after completion, you can rely on our 24/7 support from experienced specialists.

**24-hour service hotline: +49 7231 582-3000**

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