

Servo Drive SERVOSTAR® 300



S300 Servo Drive

SERVOSTAR® 300 (S300) Series digital servo drives are compact and easy-to-use drives that offer a maximum range of flexibility to your project design. The small footprint saves space in the switchgear cabinet; the broad connectivity reduces the number of different types of drives.

The S300 models include a tested STO (Safe Torque Off) for SIL2 applications.

Consistent high-performance control electronics are common across the range of S300 servo drives. The fast current controller, speed controller and onboard position controller deliver the highest quality performance, and ensure that all axes are optimally synchronized at all times. Extremely quick and accurate control enable reduced machine cycle times to help facilitate potentially significant productivity increases.

Special application tasks and functions are programmed with the integrated macro language (IEC61131). Extensive processes for individual axes can be implemented with the Macrostar development tool.

Convenient functions such as auto-tuning, Bode Plots and cogging suppression simplify the adjustment to both high-dynamic and high-precision applications.

Benefits

- Increased productivity

- One type for all applications

- Smaller switchgear cabinets

- Faster startup

- Lower system costs

- Easy to use

Key Features

- High-speed current, speed and position control results in higher machine cycle rates
- SIL2 STO (Safe Torque OFF) increases machine availability

- Multi interface
- Multi feedback
- Synchron servomotors
- Direct drives - rotary and linear motors
- Induction machines
- HF motors
- DC motors
- Multiple homeing methods
- 200 motion tasks storable

- EMV-filter on board
- Integrated power supply and brake resistor
- Mains choke is not necessary

- All connections via connectors
- Auto-tuning

- IEC 601131 structured text
- A single device for all application variants
- Flexible interfaces make configuration easy

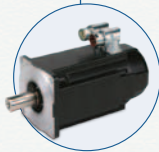
- Setup referring to application type
- SI-unit calculator
- Context sensitive online help
- Wiki system for technical background

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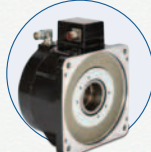
SERVOSTAR® 300 (S300) servo drives can control rotary Synchron servomotors, induction machines, HF motors, DC motors as well as rotary and linear direct drive motors. The S300 offers a function for suppressing cogging torque within defined traverse distances. This function has been specifically designed for applications with the toughest synchronism requirements. Even linear motors can be operated at extremely low speeds with a high degree of synchronous accuracy. For all application options, the setup software provides comprehensive resources and approaches.



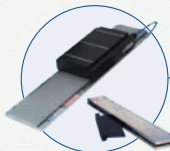
Micron™ Gearheads



AKM™ Servomotors



Cartridge Direct Drive Rotary™ Motors



Direct Drive Linear Motors



Induction Machines*



HF Motors*



DC Motors*

*Third party motor types

Best-in-Class Components

S300 works seamlessly with Kollmorgen motors – well-known for quality, reliability, and performance.



General Specifications

Rated Data	DIM	SERVOSTAR® 300					
		S303	S306*	S310*	S341	S343*	S346*
Rated supply voltage	25	3 x 110 V _{-10%} ... 230 V ^{+10%}			3 x 208 V _{-10%} ... 480 V ^{+10%}		
Rated installed power for S1 operation	kVA	1.2	2.4	4	1.4	3.3	5
Rated DC link voltage	V=	145–360			560–675		
Rated output current (rms value, ± 3 %)/Peak output current (max. 5 s, ± 3 %)							
At 1 x 110 V mains voltage**	Arms	3.5 / 9	8 / 15	10 / 20	–	–	–
At 1 x 230 V/240 V mains voltage	Arms	3 / 9	6 / 15	10 / 20	–	–	–
At 3 x 115 V mains voltage	Arms	3.5 / 9	8 / 15	10 / 20	–	–	–
At 3 x 230 V mains voltage	Arms	3 / 9	6 / 15	10 / 20	2 / 4.5	5 / 7.5	6 / 12
At 3 x 400 V mains voltage	Arms	–	–	–	1.5 / 4.5	4 / 7.5	6 / 12
At 3 x 480 V mains voltage	Arms	–	–	–	1.5 / 4.5	3 / 7.5	6 / 12
Continuous power brake circuit (RBint)	W	20	50	50	20	50	50
Continuous power brake circuit (RBext) max.	kW	0.3	0.3	0.3	0.3	1.0	1.0
Peak power regen brake (RBext) max.	kW	0.75...3	0.75...3	0.75...3	2.1...9	2.1...9	2.1...9

* with fan
** power limit

Dimensions

	SERVOSTAR® 300	
	S303 / S306 / S310	S341 / S343 / S346
(H) Height	246 mm	246 mm
(W) Width	70 mm	70 mm
(D) Depth without connectors	171 mm	171 mm
(D) Depth with connectors	< 200 mm	< 235 mm



STO, Safe Torque Off

A frequently required application task is the protection of personnel against the restarting of drives. The S300 servo drive offers a single channel STO function (Safe Torque Off) that can be used as a personnel safe restart lock. The restart lock concept is certified. The safety circuit concept for realizing the safety function "Safe Torque Off" in the servo drive is suited for SIL2 according to IEC 61508 and PL "d" according to ISO 13849-1.

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Multi Interface

Standard

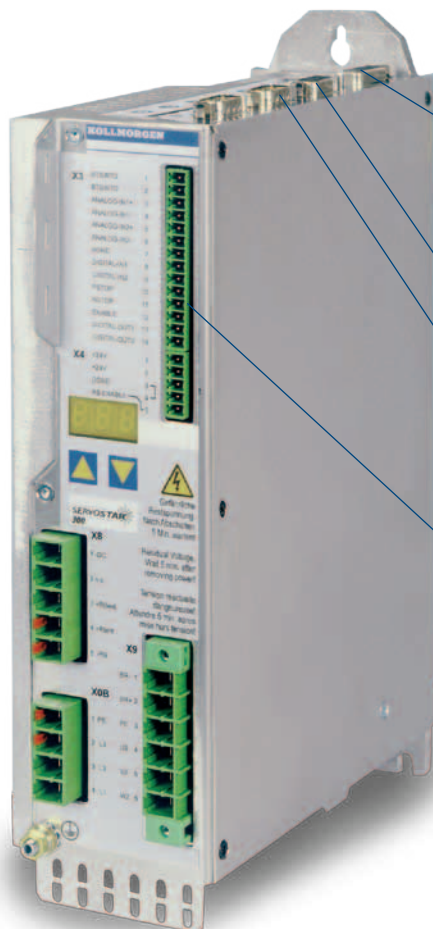


Optional/Expansion Card



Multi Feedback

The S300 can read data from a wide range of feedback systems and evaluate up to three of them in parallel. This feature ensures a high level of flexibility where integration of the S300 into different applications is concerned. Control without a feedback system is also supported, e.g. in the case of asynchronous motors.



SinCos encoder with BiSS

SinCos encoder with ENDAT 2.1

SinCos encoder with HIPERFACE

SinCos encoder without data track

SinCos encoder + Hall-effect sensor

Hall-effect sensor

Incremental encoder (AquadB) 5 V

Incremental encoder (AquadB) 5 V + Hall-effect sensor

2 to 36-pole resolver

SSI absolute encoder

Pulse/direction 5 V

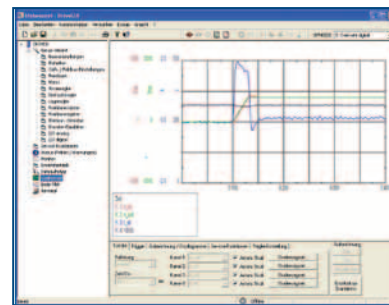
Incremental encoder (AquadB) 24 V

Pulse/direction 24 V

Drive GUI setup software

To facilitate initial setup of the S300, we provide graphics-based Windows® software that offers access to all S300 parameters and functions.

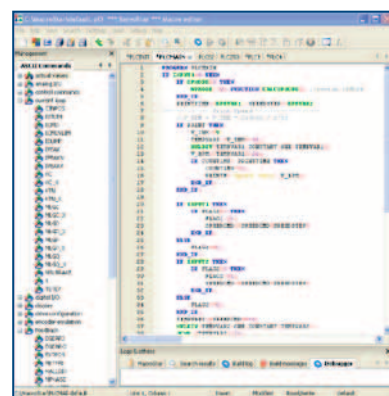
All S300 interfaces can be configured, any connected devices (e.g. motor type, feedback system, fieldbus) can be selected and the Autotuning functions can be launched. A four-channel oscilloscope and Bode plot ensure optimum display of the Autotuning results. Specialists are able to address all existing parameters via an integrated terminal window.



Macro Programming

The Macro Language is a firmware part of the S300 servo drives. It provides stand-alone, single-axis programmable positioning capability. Missed functions in the standard drive firmware can be programmed with IEC 61131 structured text. The development tool MacroStar assists with included variables and commands catalogs the fast programming of functions.

- 62.5 μ s / 250 μ s / 1 ms / 4 ms / 16 ms / IDLE / IRQ
- 128 kByte code memory
- 400 simple instructions every 62.5 μ s
- CAN objects for multi-axis control

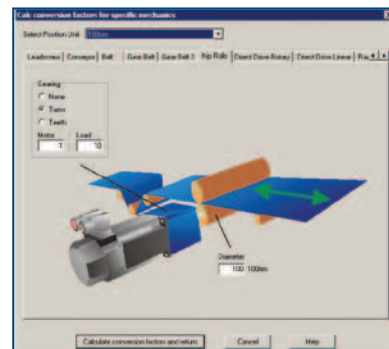


SI unit calculation

Thanks to the convenient, integrated tool for calculating the application parameters in SI units, the preferred SI units can always be used for position, speed and acceleration.

This not only eases operation, it also minimizes commissioning time and limits the amount of rejects at the start of production.

The SI unit calculator can also be easily scaled to deal with complex applications.



About Kollmorgen

Kollmorgen is a leading provider of motion systems and components for machine builders. Through world-class knowledge in motion, industry-leading quality and deep expertise in linking and integrating standard and custom products, Kollmorgen delivers breakthrough solutions that are unmatched in performance, reliability and ease-of-use, giving machine builders an irrefutable marketplace advantage.

For assistance with your application needs visit www.kollmorgen.com for a global contact list.

- Application Centers
- Global Design & Manufacturing
- Global Manufacturing



KOLLMORGEN®

Because Motion Matters™

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