

Digital Servoamplifier **SERVOSTAR[®] 300**



SERVOSTAR® 300

SERVOSTAR® keeps on getting smaller. In this digital servo amplifier, every cubic centimeter is utilized so that the extensive functionality of the SERVOSTAR® series can be made available even in very tight situations. Accessories such as filters or chokes are not needed with cables that are shorter than 25 meters, and the bay for option cards, compatible with the SERVOSTAR® 600, makes the 300 into a really multi-talented series. Combine them with our synchronous servomotors and all the important accessories, such as prefabricated cables, gearboxes, power supplies etc. and get a complete digital drive system from a single source.

Highlights

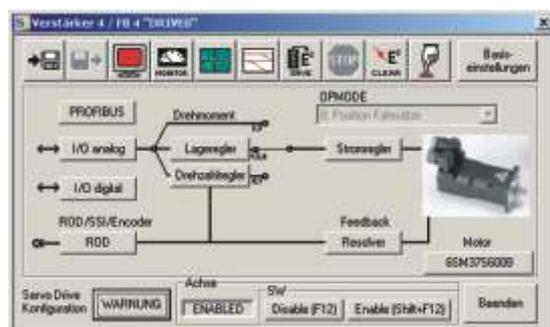
- ◆ Operation directly from mains supply,
 - 230V-Typ (303...310) : 115V_{-10%} ... 230V^{+10%}, 50 Hz
 - 480V-Typ (341...345) : 208V_{-10%} ... 480V^{+10%}, 50 Hz
- ◆ With integral mains filter
- ◆ All shield connections directly at the amplifier
- ◆ DC-link circuits can be connected in parallel
- ◆ Encoder emulation: ROD426- compatible (dec./bin.) or SSI (Gray/binary) selectable
- ◆ Feedback from resolver, high resolution sine-cosine encoder or Hall sensors
- ◆ Fully programmable via RS232 interface
- ◆ Operation from a PC via setup software (with WINDOWS™ 95/98/2000/ME/NT/XP)
- ◆ Operation with 2 keys on the amplifier, status monitoring via LED display
- ◆ 230V type suitable for 200mm switchgear cabinets
- ◆ Interface integrated for stepper controllers, master-slave operation, electr. gear and CANopen
- ◆ Intelligent positioning:
 - speed profiles, register control, jolt limiting,
 - daisy chained tasks, absolute and relative tasks, several types of reference traverses
- ◆ Multi-Interface slot
 - Choose one of these expansion cards additionally to the integrated interfaces:
PROFIBUS DP, SERCOS, DeviceNet, Ethernet, Single Axis Controller or I/O expansion



WINDOWS™ Setup Software

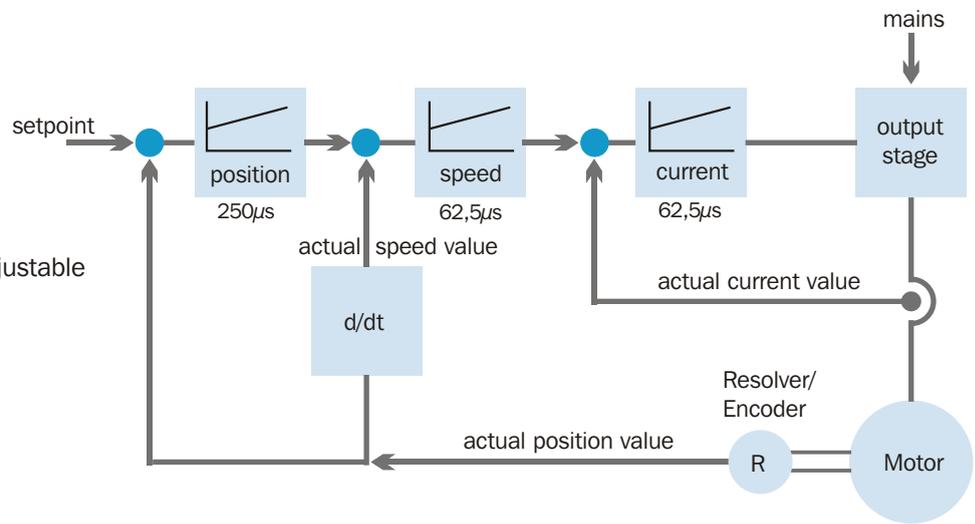
The WINDOWS™ 95/98/NT/2000/ME/XP-compatible operator software offers direct access to all the relevant control parameters of the SERVOSTAR® 300. During commissioning, the control-loop behaviour can be optimized online — while the drive is running.

Windows techniques make it possible to display several servo controllers that are linked through the integrated CANopen bus. Integrated oszilloscop functionality, bode plot, a terminal editor for ASCII channel communication, import/export of data sets and predefined parameter sets for amplifier-motor combinations simplify the drives setup.



Control circuits

- ◆ Control as field coordinates
- ◆ Speed setpoint ramps are adjustable
- ◆ Dead-band is adjustable
- ◆ PLC functionality

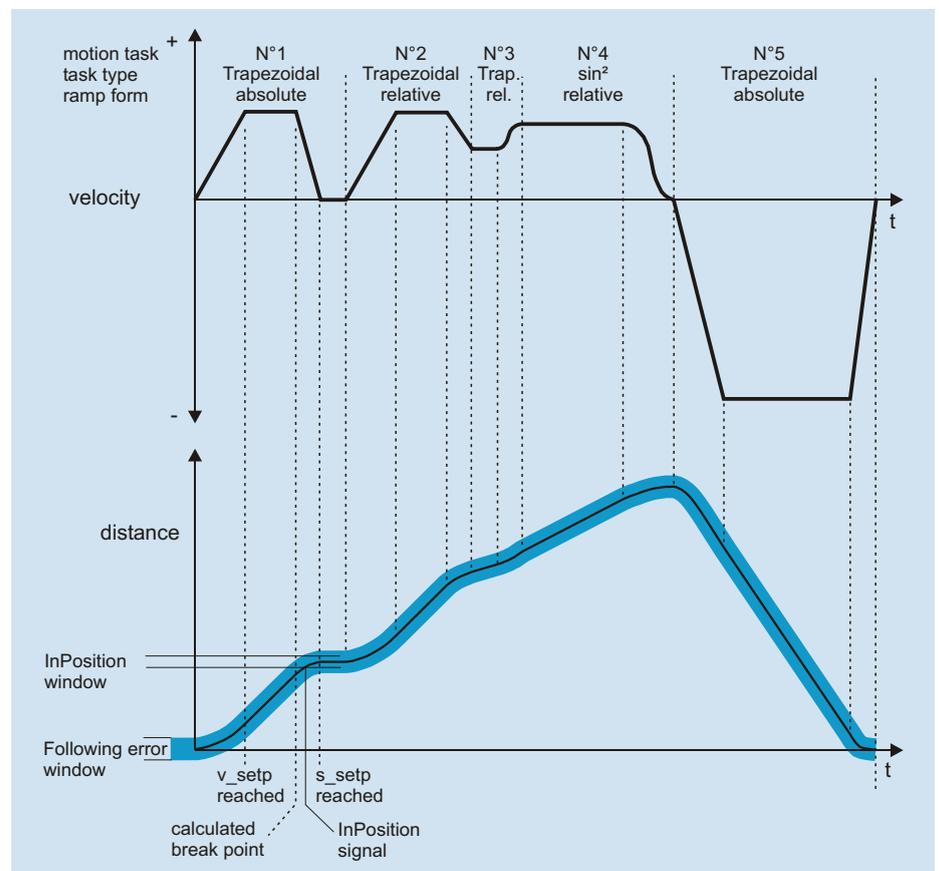


Position controller, 250µs cycle time

example of a motion profile

For many applications, the integrated position controller can save additional CNC functions.

- ◆ 180 motion blocks can be stored in the servo amplifier
- ◆ 16 types of homing
- ◆ 4 position registers
- ◆ Speed profile / register control is possible
- ◆ Linking of motion tasks
- ◆ Absolute and relative movements
- ◆ Adjustable following-error window
- ◆ Adjustable window for the InPosition signal



-AS-, restart lock

An additional digital input (AS-Enable) inhibits the power output stage of the amplifier.

As long as a 24V signal is applied to this input, the output stage is ready to operate. If the AS-Enable input goes open-circuit, then power will no longer be supplied to the motor, the drive will lose all torque and coast down to a stop. A fail-safe brake function for the drive, if one is required, must be ensured through a mechanical brake.

Electrical braking with the aid of the drive is no longer possible, since, in this situation, the output stage has been switched off. You can thus achieve a restart lock-out for personnel safety by using the AS-enable input in conjunction with an external safety circuit.

Technical Data

Rated data	DIM	SERVOSTAR®					
		303	306*	310*	341	343*	346*
Rated supply voltage	V~	3 x 115V _{-10%} ... 230V ^{+10%}			3 x 208V _{-10%} ... 480V ^{+10%}		
Rated installed power for S1 operation	kVA	1,1	2	3,5	1,1	2	3,5
Rated DC link voltage	V=	145 - 360			560 - 675		
Rated output current (rms value, ± 3%)							
at 1 x 110V / 230V / 240V mains voltage	Arms	2	4	5	-	-	-
at 3 x 115V mains voltage	Arms	4	7	10	-	-	-
at 3 x 230V mains voltage	Arms	3	6	10	3	5	8
at 3 x 400V mains voltage	Arms	-	-	-	2	4	7
at 3 x 480V mains voltage	Arms	-	-	-	1,5	3	6
Peak output current (max. 5s, ± 3%)	Arms	9	15	20	4,5	7,5	12
Continuous power regen circuit (RBint)	W	40	40	40	40	40	40
Continuous power regen circuit (RBext) max.	kW	0,25	0,25	0,25...0,75	0,4...1,5	0,4...1,5	0,4...1,5
Peak power regen circuit (RBext) max.	kW	1,5...3	1,5...3	3	7...9,5	7...9,5	7...9,5

* = with fan


The sizes for 200 / 250mm switchgear cabinets

	SERVOSTAR®	
	303 / 306 / 310	341 / 343 / 346
Height	246 mm	246 mm
Width	70 mm	70 mm
Depth without connectors	171 mm	171 mm
Depth with connectors	< 200 mm	< 235 mm

Multi Interface



CANopen Interface
always integrated

A CANopen interface is integrated into the standard instrument. If several SERVOSTAR® 300 are linked together through the CANopen interface, then the entire group can be parameterized and commissioned with the aid of a PC and the WINDOWS™ operator software, without requiring a master.

Transmission procedure:

- CAN standard ISO 11898 (high-speed communication)
- 1MBit/s max. transmission speed
- supports the CANopen standards DS301, DSP402



PROFIBUS DP expansion card

The servo amplifier can be operated through a PROFIBUS DP interface.

Transmission procedure:

- PROFIBUS DP to EN 50170
- baud rates 187.5 kBaud to 12 MBaud
- supports the PROFIBUS drive profile PROFIDRIVE

Ethernet Ethernet expansion card

This expansion card connects your SERVOSTAR® to your LAN and to the Internet. With the standard TCP/IP transmission you can get status information and send parameter values to the amplifier.

I/O expansion card

The I/O-expansion card is an extremely economical way of operating servo controllers under position control for simple automation tasks.

14 additional digital inputs permit the selection and start of the motion tasks that are stored in the motion-task memory of the SERVOSTAR® 300.

8 digital outputs report the status of the drive to the higher-level control.



SERCOS expansion card

The servo amplifier can be operated through a SERCOS Interface. This expansion card makes it possible to transmit setpoint and actual values with different cycle times (1 to 65 ms) with an additional interpolation of the setpoints within the drive. This enables a synchronization that is exact to the μ s, for fast, precise multi-axis control.

Transmission procedure:

- SERCOS standard to IEC 61491
- transmission through interference-proof optical fibres
- baud rate pre-selectable to 2 or 4 MBaud
- optical output power is adjustable

DeviceNet™ DeviceNet expansion card

A DeviceNet Interface can be used as an option.

Transmission procedure:

- CAN-Standard ISO 11898 (high-speed communication)
- 500kBit/s max. transmission speed

Single Axis Controller

The motion controller option card is the solution for complex motion controlling. Features:

- complex programs, interrupts
- advanced error handling
- indexing, I/O processing
- complex Camming
- electronic shaft / CANopen
- 1 ms update time



Rotary direct drive motors



AC synchronous servomotors

Driven by
SERVOSTAR®



Linear direct drive motors



Servo linear actuators

You'll find information to the motor series in the associated product brochures or in the WEB at www.DanaherMotion.net

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MOTION

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