Digital Servoamplifier SERVOSTAR® 300

KOLLMORGEN®

Because Motion Matters™

SERVO**STAR**® 300

The SERVO**STAR**® keeps on getting smaller. In this digital servo amplifier, every cubic centimeter is utilized so that the extensive functionality of the SERVO**STAR**® 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 SERVO**STAR**® 600, makes the 300 into a really multi-talented series.

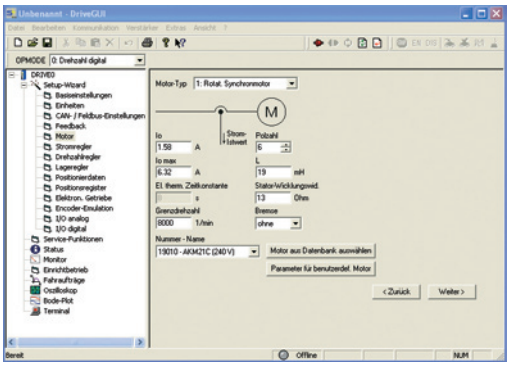
Combine them with our synchronous servomotors and all the important accessories, such as prefabricated cables, gearboxes, power supplies etc. and get a complete digital drive system from a single source.

Highlights

- Operation directly from mains supply,
  230 V-Typ (303...310) : 1 x 110 $V_{-10\%}$ ... 3 x 230 $V^{+10\%}$, 50 Hz
  480 V-Typ (341...346) : 3 x 208 $V_{-10\%}$ ... 3 x 480 $V^{+10\%}$, 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 with resolver, comcoder, high-resolution SinCos encoder, hall sensors or via EnDat, HIPERFACE or BISS.
- Fully programmable via RS232 interface
- Operation from a PC via setup software (with WINDOWS™ NT/2000/XP/Vista)
- Operation with 2 keys on the amplifier, status monitoring via LED display
- 230 V type suitable for 200 mm 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, EtherCAT, I/O expansion

WINDOWS™ Setup Software

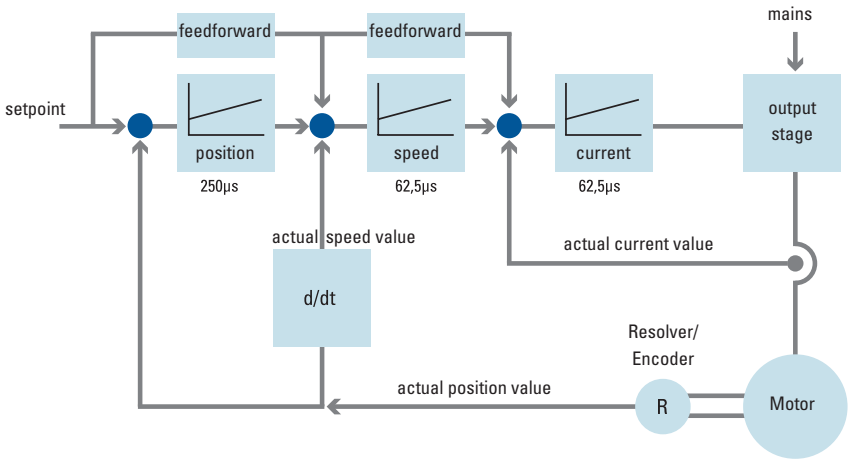
300 series products can be put into operation using the quick start setting in the setup wizard in the WINDOWS™ NT/2000/XP/Vista-compatible setup software. It takes just eight short clicks of the mouse to start up the motor. For access to all control parameters, use the complete setup procedure.



Dynamic performance can be optimised online (i.e. when the drive is running). The windows-based technique means that a number of servo amplifiers connected via the integrated CANopen bus can be displayed at the same time. The integrated oscilloscope function with 4 channels, bode plot, a terminal program for communication via the ASCII channel, import/export functions for data records and predefined parameter sets for amplifier/motor combinations make getting your amplifier started significantly easier.

Control circuits

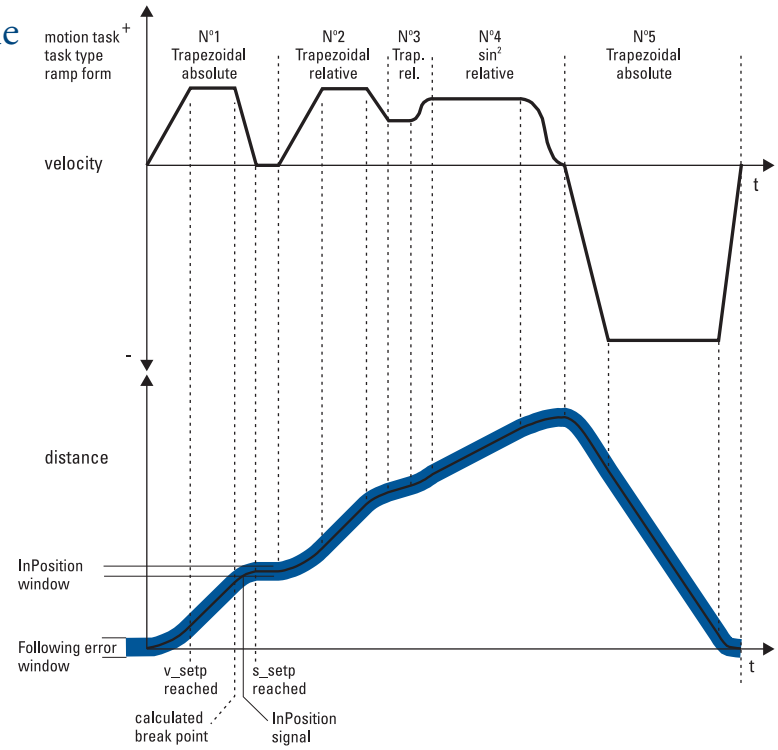
- Control as field coordinates
- Speed setpoint ramps are adjustable
- Dead-band is adjustable
- PLC functionality
- Several filters adjustable
- Autotuning



Position controller, 250 µs cycle time

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

- 200 motion blocks can be stored in the servo amplifier
- 16 types of homing
- 16 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



example of a motion profile

-AS-, restart lock

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

As long as a 24 V 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 a fail-safe for cable break safety circuit.

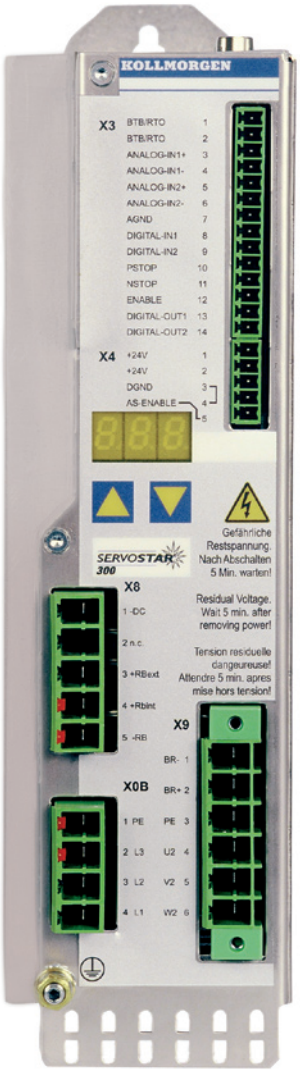
Technical Data

Rated data	DIM	SERVOSTAR® 300					
		303	306*	310*	341	343*	346*
Rated supply voltage	V~	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	3 / 5	3 / 5	-	-	-
at 1 x 230 V/240 V mains voltage	Arms	3 / 9	4 / 9	4 / 9	-	-	-
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 regen circuit (RBint)	W	20	50	50	20	50	50
Continuous power regen circuit (RBext) max.	kW	0.3	0.3	0.3	0.3	1.0	1.0
Peak power regen circuit (RBext) max.	kW	0.75...3	0.75...3	0.75...3	2.1...9	2.1...9	2.1...9

* = with fan

The sizes for 200/250 mm switchgear cabinets

	SERVOSTAR® 300	
	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 SERVO**STAR**® 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)
- max. 1MBit/s Übertragungsgeschwindigkeit
- Unterstützt die CANopen Standards DS301, DSP402

SERCOS expansion card

The servo amplifi er 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 µs, 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

PROFIBUS DP expansion card

The servo amplifi er 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 profi le PROFIDRIVE

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

SynqNet expansion card

- Industry standard „100baseT physical layer" (IEEE802.3)
- Redundant „self-healing network" (fault tolerance)
- Setpoint value update with up to 48 kHz
- Control of 32 co-ordinated axes
- Cable length per segment up to 100 m
- Drive parameter downloadable via SynQnet

EtherCAT expansion card

- EtherCAT supports cycle times of less than 100 µs on the bus
- CAN application layer over EtherCAT
- No need for address settings
- Baud rate is set automatically
- Plug & Play

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 SERVO**STAR**® 300.
8 digital outputs report the status of the drive to the higher-level control.

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EU200507-11 04Mar09 EN