



KOLLMORGEN

Digital Servoamplifier SERVOSTAR® 400



Helping you build a better machine, faster.

SERVOSTAR® 400

Intensive observation of the market and precise analysis of customers wishes is the foundation of all development. The new, digital multi-axis system SERVOSTAR® 400 is the result of this research.

Thanks to years of experience in digital servo technology and fieldbus systems, we are able to offer a servo system that delivers maximum performance in minimum space at minimum cost.

We give you a complete servo system: servo amplifiers, motors, and installation-ready cabling. SERVOSTAR® 400 is completely softwarecompatible with the well-known and established SERVOSTAR® 600.

The internal bus connection between the modules makes system wiring very much simpler. For a system with 8 axes, this means

- **1 power line connection**
- **1 enable connection**
- **1 BTB contact**
- **1 PC connection**

WINDOWS™ Setup Software

The WINDOWS™ 98/NT/2000/ME/XP-compatible operator software offers direct access to all the relevant control parameters of the SERVOSTAR® 400. 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, Bodeplot, a terminal editor for ASCII channel communication, import/export of data sets and predefined parameter sets for amplifier-motor combinations simplify the drives setup.

Features

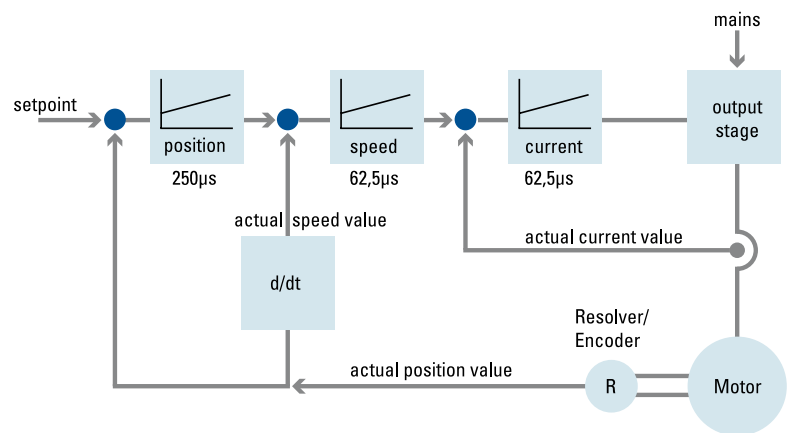
- Two current classes: 3 A and 6 A* rated current at up to 400 V mains voltage
* = additional fan required
- Operation directly from mains supply, integral mains filter
1 x 115 V AC, 1 x 230 V AC,
3 x 115 V AC, 3 x 230 V AC (SERVOSTAR® 40x-M)
3 x 230 V AC, 3 x 400 V AC (SERVOSTAR® 44x-M)
- Power supply and regen circuit integrated in the master (first axis) – stand-alone operation
- Up to 7 extension axes at one master, axis modules are identical for all voltages
- Mounting on hat rail: suitable for 300 mm switchgear cabinets
- All shield connections directly at the amplifier, integral mains filter
- Resolver and high resolution sine-cosine encoder feedback
- Current controller, speed controller, position controller, electrical gearing, RS232, CANopen
- LED-Display and keyboard in the front panel of the master module
- PROFIBUS or SERCOS optional
- Encoder emulation: ROD426-compatible (dec./bin.) or SSI (Gray/bin.) selectable
- Controls for the motor brake
- Fully programmable via RS232 interface



SERVOSTAR® 400 M

Control circuits

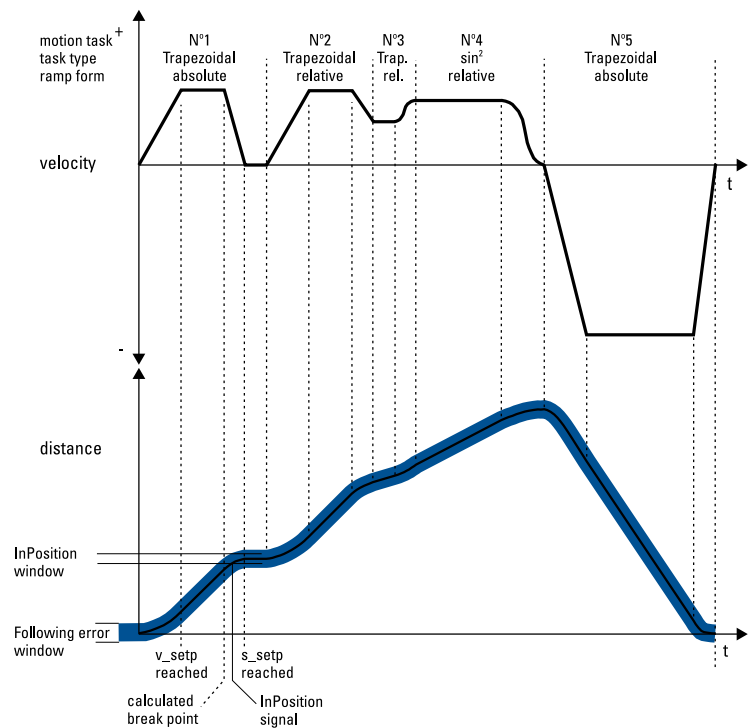
- Control as field coordinates
- Speed setpoint ramps are adjustable
- Dead-band is adjustable
- PLC functionality



Position controller, 250µs cycle time

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



Ein mögliches Fahrprofil

Technical Data

Rated data	DIM	SERVOSTAR® M=master, A=axis							
		403-M	406-M	403-A	406-A	443-M	446-M	403-A	406-A
Rated supply voltage	V~	1 x 115 V _{-10%} ... 3 x 230 V ^{+10%}				3 x 230 V _{-10%} ... 3 x 400 V ^{+10%}			
Rated installed power for S1 operation	kVA	7	7	-	-	12	12	-	-
Rated DC link voltage	V=	160–310				310–560			
Rated output current (rms value, ± 3 %)	Arms	3	6*	3	6*	3	6*	3	6*
Peak output current (max. 5 s, ± 3 %)	Arms	9	12*	9	12*	9	12*	9	12*
Continuous power regen circuit (RBint)	W	40	40	-	-	40	40	-	-
Continuous power regen circuit (RBext) max.	W	250	250	-	-	400	400	-	-
Peak power regen circuit (RBext) max.	kW	4.8	4.8	-	-	16	16	-	-

* = with fan

The sizes for 300 mm switchgear cabinets

		SERVOSTAR®	
Type		Master	Axis
Height		245 mm	245 mm
Width		100 mm	50 mm
Depth		225 mm	225 mm
Depth with connectors		245 mm	245 mm



SERVOSTAR® 400 8 Axis

Multi-Interface



CANopen Interface always integrated

If several SERVOSTAR® 400 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



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



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

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