

# Digital Servoamplifier SERVOSTAR® 400



**KOLLMORGEN**

*Because Motion Matters™*

# SERVOSTAR® 400

Intensive observation of the market and precise analysis of customers wishes is the foundation of all development. The 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/Vista/Win7-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 oscilloscope 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
- EtherCAT, 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

## Technical Data

Rated data	DIM	SERVOSTAR® 400							
		403-M	406-M	403-A	406-A	443-M	446-M	403-A	406-A
Rated supply voltage	V~	1 x 115 V <sub>-10%</sub> ... 3 x 230 V <sub>+10%</sub>				3 x 230 V <sub>-10%</sub> ... 3 x 400 V <sub>+10%</sub>			
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® 400	
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



8 Axis SERVOSTAR® 400

## 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 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



### 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

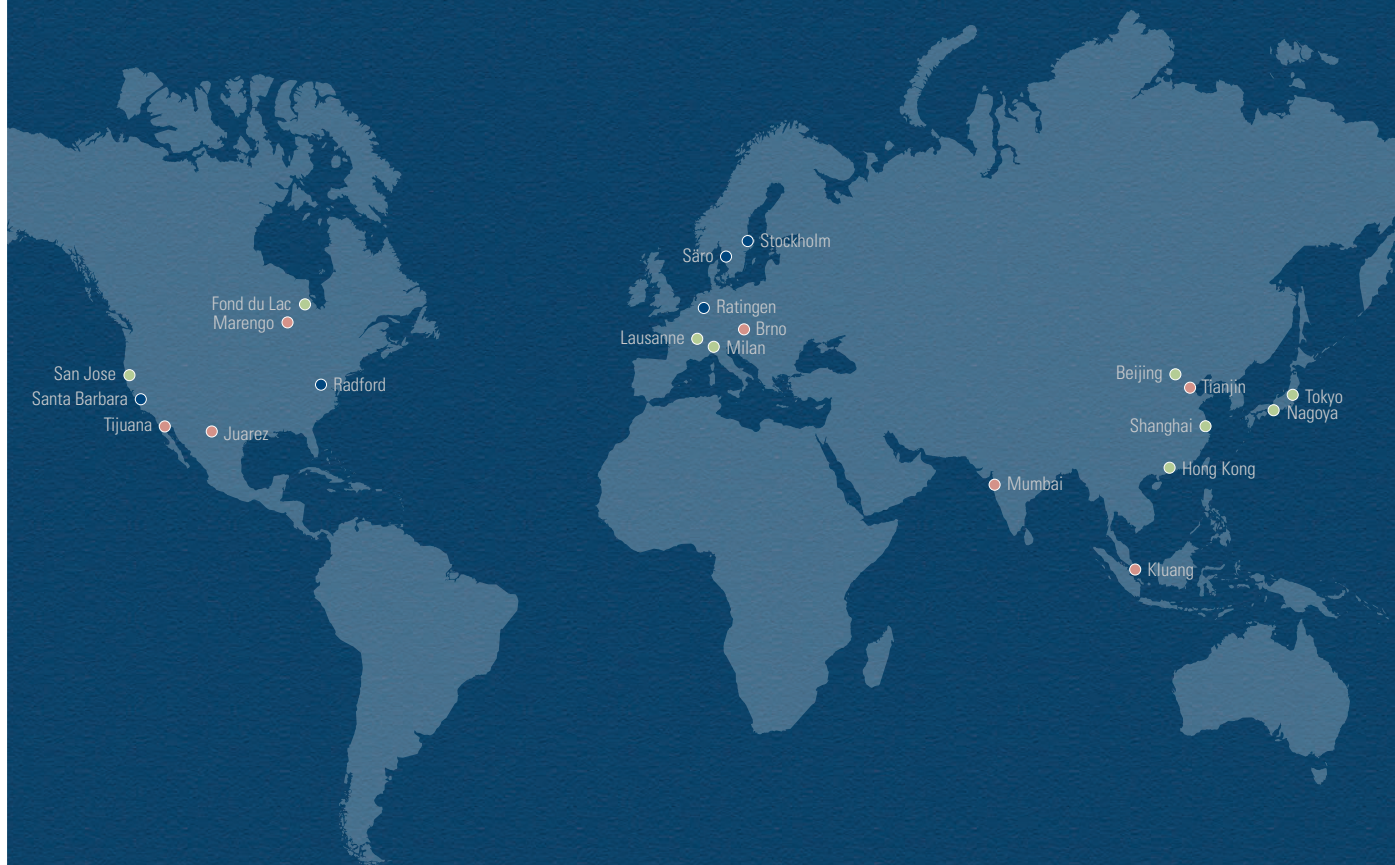


## About Kollmorgen

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](http://www.kollmorgen.com) for a global contact list.

- Application Centers
- Global Design & Manufacturing
- Global Manufacturing



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