

IA 501

Programming a servo drive



Learning objectives/experiments

- programming the motor controller
- adjusting the control parameters
- testing the software

Develop digital skills

- retrieve information from digital networks
- use digital learning media

Specification

- [1] servo drive of a worm gear screw jack
- [2] supplement to IA 500, process automation
- [3] part of the GUNT DigiSkills programme
- [4] programming the motor controller (stepper motor)
- [5] manufacturer software for the motor: Plug&Drive Studio from Nanotec
- [6] path measurement via linear potentiometer
- [7] can be operated manually via crank
- [8] GUNT software for communication with the experimental unit
- [9] multimedia instructional materials online in GUNT Media Center

Technical data

Stepper motor

- holding torque: 2,3Nm
- resolution: 1,8°/step
- encoder: 16384 pulse/revolution
- manufacturer software
 - ▶ Plug&Drive Studio from Nanotec
 - ▶ programming language: NanoJ

Worm gear screw jack, 5kN

- stroke: 0...100mm; 1mm/revolution

Compression spring, 2,5kN, spring travel: 75mm

Measuring ranges

- displacement: 100mm

230V, 50Hz, 1 phase
 230V, 60Hz, 1 phase
 120V, 60Hz, 1 phase
 LxWxH: 430x600x300mm
 Weight: approx. 20kg

Required for operation

PC with Windows recommended

Scope of delivery

experimental unit, hand crank, manufacturer software, online access to the GUNT Media Center

Description

- programming the motor controller
- functional program included in the scope of delivery
- supplement to IA 500
- safe operation

The IA 501 device is used to develop software programs that are tested directly on the device. The experimental unit is a supplement to the IA 500 device and uses the same drive motor in both units.

The experimental unit is an independent teaching system for analysing, implementing and testing a work step of the automation process from IA 500. Programs can be safely developed and tested with this device. The manufacturer's Plug&Drive Studio software from Nanotec uses the NanoJ programming language, which is close to C/C++.

The experimental unit shows a servo drive of a worm gear screw jack. The encoder belonging to the motor (stepper motor) supplies a speed signal to control the speed.

The primary content of the experimental unit is the programming of the motor controller, which uses the manufacturer's software. You can create and test your own programs. GUNT provides a functional program that students can use as a guide.

A hand crank enables manual operation when there is no power supplied to the machine.

Digital multimedia teaching material is available in the GUNT Media Center. The teaching material is supplemented by a selection of different worksheets with solutions.

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Optional accessories

IA 500 Automated process with cobot