Drive controller
for servo motors

iMD 10/20/40

iMD 10 iMD 20 iMD 40

General

The **iMD10/20** series of drive controllers are economical final stages for DC motors (iMD10) and EC servomotors (iMD20).

The fully digital **iMD40** drive controller is an economical final stage, powered directly from the mains, for EC servomotors (synchronous motors, such as linear or torque motors) up to 2 kW.

Typical applications are CNC machines and automation systems. The final stage casings are optimised for cabinet installation. The extensive configuration options allow flexible adaptation to a wide range of applications and all required settings can be made with a user-friendly commissioning software package.

There are various user interfaces available for integration with proprietary applications. Here, the CAN open interface must be emphasized. In addition to synchronous point-to-point positioning (S-PTP) and speed control, track control (CP -Continuous Path) and synchronised multiple axis applications are feasible using the implemented CANopen protocol DS402. Additional interfaces include a ±10V interface (nominal speed) and a RS232 interface. Fast inputs for 3D measuring devices as well as the handwheel operation are implemented.

Short controller cycle times (current, speed, position controller) ensure optimum performance for highly dynamic drives. The drive controllers are suitable both for rotary drives and for the corresponding linear direct drives and torque motors (iMD20 and iMD40). A redundant rest monitoring system has been integrated in the drive controller. It reduces work by the controller in external assemblies to a minimum and allows for convenient operation or use of the machine.

The drive modules iMD series including the predecessor UVE 8012 are still sold over 30,000 times worldwide.

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Technical specification

Features	iMD 10	iMD 20	iMD 40
Motor type	Brush servomotors (DC)	Brushless servomotors (EC)	Brushless servomotors (EC)
Power supply	40-95 V DC		230V AC, mains, single phase
Motor current	Constant current 12 A, peak current 25 A		Constant current 6.5 A Peak current 8 A
CAN bus interface	CANopen DS301 V4.0 and DS402 V1.0 der CiA (CAN in automation)		CANopen DS301 V4.0 and DS402 V1.0 of CiA (CAN in automation)
RS-232 interface (asynchronous, 19.2 or 57.6 kbits/s).	For commissioning (DcSetup.exe) or e.g. PLC connection; effective data transfer protocol	For commissioning (AcSetup.exe) or e.g. PLC connection; effective data transfer protocol	For commissioning (AcSetup.exe) or, e.g. PLC connection; effective data transfer protocol
Measuring system	Incremental encoder (RS422); max. input frequency: 1.25 MHz		Incremental encoder (RS422); max. input frequency: 1.25 MHz
Commutation	--	Hall sensor signals	Hall sensor signals
Analogue input (±10V)	11 bit resolution		11 bit resolution
PWM switching frequency	max. 12.5 kHz	max. 16.4 kHz	max. 16.4 kHz
Inputs for limit and reference switches	✓	✓	✓
Digital current, speed and position control	Scanning times: min. 80 µs/244 µs/ 488 µs for current/speed/position controllers	Scanning times: min. 61 µs/244 µs/ 488 µs for current/speed/position controllers	Scanning times: min. 61µs/ 244 µs/488 µs for current/ speed/position controllers
Brake controller	✓	✓	✓
Gantry mode or synchronous control	of 2 modules, Master-Slave via CAN bus		
Monitoring of the motor current	Short circuit, I^2t	Short circuit, I^2t, Pulse-by-pulse	Short circuit, I^2t, Pulse-by-pulse
Monitoring of the encoder signals	✓	✓	✓
Monitoring of the software by internal Watchdog timer	✓	✓	✓
Simple update of the firmware over RS-232	Possible locally by customer or service engineer		
Rest state monitoring	Redundancy to ISO standard		
Dimensions	180 x 35 x 110 mm	180 x 35 x 120 mm	180 x 50 x 150 mm
Part no. Drive controllers	314 020	314 030	314 040

Motor and encoder connecting leads are NOT included in delivery.

Technical specifications subject to change.