

## EPOS4 positioning controller

□ The maxon motor EPOS4 products are small-sized, full digital, smart positioning control units. Their high power density allows flexible use for brushed DC and brushless EC (BLDC) motors up to approximately 750 Watts with various feedback options, such as Hall sensors, incremental encoders as well as absolute sensors in a multitude of drive applications. EPOS4 controllers are specially designed to be commanded and controlled as a slave node in the CANopen network. In addition, the units can be operated via any USB or RS232 communication port of a Windows or Linux workstation. Moreover, the integrated extension interface allows optional communication interfaces, such as EtherCAT or other additional functionalities.

Latest technology, such as field-oriented control (FOC) and acceleration/velocity feed forward in combination with highest control cycle rates allow sophisticated, ease-of-use motion control.

### Product features

- Maximum power density
- Suitable for brushed DC motors and brushless DC motors (maxon EC motor)
- Configuration and Communication via CANopen (CiA 301, 402, 305), RS232 and USB 2.0
- CANopen profile position- (PPM), profile velocity- (PVM) and homing mode
- CoE (CAN Application Layer over EtherCAT) according CANopen Standard CiA 402 Device Profile Drives and Motion Control with Cyclic Synchronous Position (CSP), Velocity (CSV) and Torque (CST)
- Position and velocity control with feed forward
- Dual loop control
- Field-oriented Control (FOC)
- Velocity observer
- Touch Probe and Position Compare
- Control of holding brake
- Windows-based graphical user interface "EPOS Studio" for configuration, firmware download, auto-tuning, I/O configuration and data recording free of charge
- Libraries and programming examples for Windows DLL (32-/64-bit), Linux shared object library (X86 32-/64-bit, ARMv7 for Raspberry Pi and BeagleBone)
- Inputs: 8 digital; 2 analog (differential)
- Outputs: 3 digital; 1 analog
- Comprehensive feedback options: Hall sensors, digital and analog (sin/cos) incremental encoders, SSI absolute encoders, modular expandable
- Extensive safety functions including STO (Safe Torque Off)
- Easy to use

### Product family

- EPOS4 Module 24/1.5: 10 V to 24 V, 1.5 A / 4.5 A (continuous / peak)
- EPOS4 Compact 24/1.5: 10 V to 24 V, 1.5 A / 4.5 A (continuous / peak)
- EPOS4 Micro 24/5: 10 V to 24 V, 5 A / 15 A (continuous / peak)
- EPOS4 Compact 24/5 3-axes: 10 V...24 V, 5 A / 15 A (continuous / peak) per axis
- EPOS4 50/5: 10 V to 50 V, 5 A / 15 A (continuous / peak)
- EPOS4 Module 50/5: 10 V to 50 V, 5 A / 15 A (continuous / peak)
- EPOS4 Compact 50/5: 10 V to 50 V, 5 A / 15 A (continuous / peak)
- EPOS4 Module 50/8: 10 V to 50 V, 8 A / 30 A (continuous / peak)
- EPOS4 Compact 50/8: 10 V to 50 V, 8 A / 30 A (continuous / peak)
- EPOS4 Module 50/15: 10 V to 50 V, 15 A / 30 A (continuous / peak)
- EPOS4 Compact 50/15: 10 V to 50 V, 15 A / 30 A (continuous / peak)
- EPOS4 Disk 60/8: 12 V to 60 V, 8 A / 24 A (continuous / peak)
- EPOS4 Disk 60/12: 12 V to 60 V, 12 A / 36 A (continuous / peak)
- EPOS4 70/15: 10 V to 70 V, 15 A / 30 A (continuous / peak)

### Applications

- Automation and robotics
- Medical equipment
- Electronic production
- Packing equipment
- Materials handling
- Machine tools

## Contact

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## Features

<b>NMT</b>	NMT slave
<b>Error control</b>	Node guarding Heartbeat producer
<b>Boot-up</b>	Yes
<b>Node ID range</b>	From 1 to 127

<b>Node ID</b>	Hardware switch Software switch Proprietary
<b>CANopen bit-rates</b>	20 kbit/s 50 kbit/s 125 kbit/s 250 kbit/s 500 kbit/s 800 kbit/s 1 000 kbit/s
<b>Type of bit-rate adjustment</b>	Software switch Proprietary
<b>RPDOs</b>	4
<b>TPDOs</b>	4
<b>PDO modes</b>	Event-triggered Remotely-requested Synchronous (cyclic)
<b>PDO linking</b>	Yes
<b>PDO mapping</b>	Variable
<b>SDO server</b>	1
<b>SDO client</b>	No
<b>Emergency producer</b>	Yes
<b>Emergency consumer</b>	No
<b>Sync producer</b>	No
<b>Sync counter</b>	No
<b>Time stamp</b>	No
<b>Additional functions</b>	No
<b>CANopen version</b>	CiA 301 V 4.2
<b>Frameworks</b>	No
<b>Device profiles</b>	CiA 402: CANopen drives and motion control device profile
<b>Certified</b>	No
<b>Availability</b>	In stock