








Feature	EPOS2 24/2			EPOS2 Module 36/2	EPOS2 24/5	EPOS2 50/5	EPOS2 70/10
	DC (390438)	EC (380264)	DC/EC (390003)	(360665)	(367676)	(347717)	(375711)
							

Motors							
DC motors up to	48 W	—	48 W	72 W	120 W	250 W	700 W
EC motors up to	—	48 W	48 W	72 W	120 W	250 W	700 W

Sensors							
Digital Incremental Encoder (2 or 3 channel with Line Driver)	✓	✓	✓	✓	✓	✓	✓
Digital Hall Sensors (EC motors)	—	✓	✓	✓	✓	✓	✓
SSI Absolute Encoder (single/multiturn configurable, gray or binary coded)	—	—	—	—	—	✓	✓
Analog Incremental Encoder (sin/cos, differential, 2 channel without index)	—	—	—	—	—	✓	✓
Digital Incremental Encoder 2 (2 or 3 channel with Line Driver)	—	—	—	(✓)A	—	✓	✓

(✓)A only available with 2 channel encoder

Communication Interfaces	
CAN	✓
CANopen	Slave
CANopen application layer	DS-301
CANopen frameworks	DSP-305
CANopen profiles motion control	DSP-402
USB 2.0 / USB 3.0 (full speed)	✓
RS232	✓
Gateway function RS232-to-CAN	✓
Gateway function USB-to-CAN	✓

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Electrical Data							
Operating voltage +V _{cc}	9...24 VDC			11...36 VDC	11...24 VDC	11...50 VDC	11...70 VDC
Logic supply voltage +V _c (optional)	—			11...36 VDC	11...24 VDC	11...50 VDC	11...70 VDC
Max. output voltage				0.90 x V _{cc}			
Max. output current	4 A			4 A	10 A	10 A	25 A
Continuous output current	2 A			2 A	5 A	5 A	10 A
Efficiency	90%			93%	92%	94%	94%
Switching frequency output stage	100 kHz			50 kHz	50 kHz	50 kHz	50 kHz
Sampling rate PI current controller				10 kHz			
Sampling rate PI speed controller				1 kHz			
Sampling rate PID position controller				1 kHz			
Maximal speed (DC)				25 000 rpm			
Maximal speed (EC/block commutation)				100 000 rpm			
Maximal speed (EC/sinusoidal commutation)				25 000 rpm			
Built-in motor choke per phase	47 µH / 2 A			10 µH / 2 A	15 µH / 5 A	22 µH / 5 A	25 µH / 10 A

Inputs							
Hall sensor signals	—			H1,H2,H3			
Encoder signals				A,A _i ,B,B _i ,I,I _i			
Max. encoder input frequency				5 MHz			
Max. encoder counts per turn				2 500 000 Imp.			
Digital inputs (thereof "high speed" up to 5 MHz)	6	6	6	6 (2)	6	11 (4)	10 (3)
Analog inputs	2	2	2	2	2	2	2
Resolution	12-bit			11-bit	12-bit	12-bit	12-bit
Range	0...+5 V			0...+5 V	0...+5 V	-10...+10 V	0...+5 V
CAN ID	1...15 (up to 127 by software setting)			1...127			

Outputs							
Digital outputs (thereof "high speed" up to 5 MHz)	2	2	2	3 (1)	4	5 (1)	5 (1)
Analog outputs	—			—			
Encoder voltage output				+5VDC@100 mA			
Hall sensor voltage output	—			+5VDC@30 mA			
Auxiliary voltage output	+5 VDC@10 mA			—	+V _{cc} @1300 mA	+5 VDC@150 mA	+5 VDC@150 mA
Reference voltage output	—			—	—	—	+5 VDC (R _i = 1kΩ)

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Mechanical Data							
Weight (approximate)	27 g	30 g	28 g	10 g	170 g	240 g	330 g
Dimensions (LxWxH)	55 x 40 x 15.6 mm	55 x 40 x 19.6 mm	55 x 40 x 18.2 mm	54.5 x 28.2 x 9 mm	105 x 83 x 24 mm	120 x 93.5 x 27 mm	150 x 93 x 27 mm
Mounting	M2.5 screws	M2.5 screws	M2.5 screws	Card edge connector	M3 screws	M3 screws	M3 screws
Environmental Conditions							
Operation temperature range	-10...+45°C						
Storage temperature range	-40...+85°C						
Humidity range (condensation not permitted)	20...80%						
Functionalities							
Profile Position Mode (point-to-point)				✓			
Path generator with sinusoidal/trapezoidal profiles				✓			
Position Mode (POM)				✓			
Interpolated Position Mode (PVT)				✓			
Profile Velocity Mode (PVM)				✓			
Velocity Mode (VEM)				✓			
Current (Torque) Mode (CUM)				✓			
Homing Mode				✓			
Master Encoder Mode (Electronic gearhead)				✓			
Step/Direction Mode				✓			
Analog set value commands (CUM,VEM,POM)				✓			
Position Marker				✓			
Quickstop				✓			
Enable				✓			
Position Compare				✓			
Control of holding brakes	(✓)B	(✓)B	(✓)B	(✓)B	✓	✓	✓
Advanced automatic control settings				✓			
Position control with Feed Forward				✓			
Speed control with Feed Forward				✓			
Dual Loop Position and Speed Control	—	—	—	✓	—	✓	✓

(✓)B separate power supply for holding brake is required

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Software							
Graphical user interface	EPOS Studio						
32-bit Windows DLL for PC Master	IXXAT, Vector, National Instruments						
Programming Examples	MS Visual C#, MS Visual C++, MS Visual Basic, MS Visual Basic.NET, Borland C++, Borland Delphi, NI LabView, NI LabWindows/CVI						
IEC 61131-3 Library	Beckhof, Siemens/Helmholz, VIPA						

Accessories (Order #)							
CAN-CAN Cable (275926)	—	—	✓	(✓)C	✓	✓	✓
CAN-COM Cable (275908)	—	—	✓	(✓)C	✓	✓	✓
CAN-Y Cable (319471)	—	—	✓	—	—	—	—
DC Motor Cable (303490)	—	—	✓	—	—	—	—
DSR 50/5 Shunt Regulator (309687)	✓	✓	✓	✓	✓	✓	—
DSR 70/30 Shunt Regulator (235811)	—	—	—	—	—	—	✓
Encoder Cable (275934)	✓	✓	✓	(✓)C	✓	✓	✓
EPOS Connector Set (303807)	—	—	✓	—	—	—	—
EPOS2 24/5 Connector Set (384915)	—	—	—	—	✓	—	—
EPOS2 50/5 Connector Set (351061)	—	—	—	—	—	✓	—
EPOS2 70/10 Connector Set (381405)	—	—	—	—	—	—	✓
EPOS2 Module Evaluation Board (361435)	—	—	—	✓	—	—	—
EPOS2 Module Starter Kit (363407)	—	—	—	✓	—	—	—
Hall Sensor Cable (275878)	—	—	—	(✓)C	✓	✓	✓
Motor Cable (275851)	—	—	—	(✓)C	✓	✓	✓
Motor/Hall Sensor Cable (302948)	—	—	✓	—	—	—	—
Power Cable (275829)	—	—	—	(✓)C	✓	✓	✓
RS232-COM Cable (275900)	—	—	✓	(✓)C	✓	✓	✓
Signal Cable 16core (275932)	—	—	✓	(✓)C	✓	✓	✓
Signal Cable 3x2core (378173)	—	—	—	—	—	—	✓
Signal Cable 4x2core (350390)	—	—	—	—	—	✓	—
Signal Cable 6x2core (300586)	—	—	—	—	—	✓	✓
USB Type A - B Cable (350392)	—	—	—	(✓)C	—	✓	—
USB Type A - mini B Cable (370513)	✓	✓	✓	—	✓	—	✓

(✓)C in conjunction with EPOS2 Module Evaluation Board