

DSA-E₄ Slim Size CANopen Servo Amplifier !

An amplifier for (almost) every application.

The optimized new version of the well established DSA product line offers the best cost-performance ratio ever. The **DSA-E₄** covers a wide power range of brush and brushless drives. A supply voltage of 8.5 V up to 60 V and up to 30 A peak gives maximum flexibility according to the application needs.



Application Range

- ◆ **Pumps**
Speed and volume control
- ◆ **Electric Screwdrivers**
Torque control
- ◆ **Conveyers**
Velocity control
- ◆ **Storage**
Cart positioning
- ◆ **Rigging**
Mechanical stop adjustment
- ◆ **Feeding**
Synchronous component feeding
- ◆ **Winding**
Velocity / torque control of the hub
- ◆ **Dosing**
Injection plunger control
- ◆ **Labeling**
Synchronous label ejection

Did we miss your application?
Please, call us!

We can also offer solutions for multi-axis or complex synchronization applications. zub machine control AG is not just a vendor. We are also your engineering and development partner on demand.

Standardized

Modern bus interfaces and standardized protocols guarantee a maximum of compatibility and long-term investment protection. CANopen is the standard interface. But there are also **DSA-E₄** versions with EtherCAT, Ethernet TCP/IP, Profibus, Modbus, RS485, and RS232 available on request.

Digital

Full digital configuration means 100% reproducibility of all settings and high transparency of all process data. In practice, this means: Quick configuration of series machines and exact control at runtime.

Compact and light-weight

The slim module housing (HxWxD: 75 x 22.5 x 110 mm) enables a space-saving integration in an electrical cabinet. The low weight and the low minimum supply voltage are best prerequisites, particularly for mobile applications.

Product Highlights

- ◆ 8.5 - 60 V DC
- ◆ 8 A / 14 A continuous current
30 A peak current
- ◆ Brush and brushless motors
- ◆ Current / torque, speed and position control
- ◆ CANopen DS402
Optional: EtherCAT, Profibus, Modbus, RS485, RS232

Powerful

The latest MOS-FET technology provides a continuous current of up to 8 A or even 14 A for the version including a heat sink. A peak current of 30 A enables quick motor response and high dynamics.

Optimized for series

The DSA servo amplifier line is designed for usage in machines and devices produced in series:

Pluggable tension spring clamps fit best for low-cost assembly using preconfigured cables, but also for quick service tasks without special tools.

Due to the wide supply range of 8.5 up to 60 V DC and the high continuous and peak current, the DSA can be used for different motor power levels. Such a single component strategy lowers your costs for stock holding and increases your flexibility, especially for special demands.

Please ask for the best priced 12-month contract on a defined number of DSAs.

**Small sized
Servo Amplifier Module**

DSA-E4-6o/8
(Part No. 001340)

Modes of Operation

Torque control	yes	☞ Profile Torque Mode
Velocity control (encoder or hall)	yes	☞ Velocity Mode
Position control (encoder or hall)	yes	☞ Profile Position Mode
OEM custom modes	on request	

Electrical Data

Supply voltage: Logic & I/O	U_B	24 VDC \pm 25 %
Supply voltage: Power stage	U_L	10 ... 60 VDC
Continuous output current	I_{Cont}	DSA-E4-6o/8: 8 A DSA-E4-6o/14: 14 A
Peak output current	I_{Max}	30 A
Efficiency	η_{Max}	95 %
Min. required inductance	L_{Motor}	400 μ H
PWM frequency	f_{PWM}	25 kHz
Current control frequency	f_{CurReg}	5 kHz
Velocity / position control frequency	f_{VelReg}	0.5 ... 2.5 kHz

Position and Velocity Feedback

Encoder signals: A, /A, B, /B, I, /I	Signal type	RS422, 5 V, differential max. 500 kHz
Hall sensors: H1, /H1, H2, /H2, H3, /H3	Signal type	5 V single-ended or differential

Inputs & Outputs

Digital inputs 0 ... 3	U_{In} R_i	Low: 0 ... 5 V / High: 15 ... 30 V 5 k Ω
Analogue input 0	$U_{InAnalog}$ R_i	-10 ... +10 V (10 Bit) 100 k Ω
Digital output 0	U_{Out} I_{Max}	U_B -1 V, high-switching 0,5 A, short-circuit proof

Auxiliary Supply

Encoder / Hall power supply	U_{5V} I_{5Vmax}	5 VDC \pm 5 % 200 mA
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Bus Interfaces

CAN (Standard)	Baud rate Protocol, Profile	up to 1 Mbit/s DS301 V3.0, DSP402 V2.0
Optional interfaces (on request)	EtherCAT, Ethernet TCP-IP, UDP, Profibus, Modbus, RS485, RS232	

Protective Functions

Overtoltage	yes
Overtemperature	yes
Galvanic isolation: CPU - CAN	no
Galvanic isolation: CPU - IO	no

Mechanical Data

Type of housing	Hat rail module (IP20)	
Connector type	Pluggable tension spring clamps	
Dimensions and weight (without connectors)	H x W x D	DSA-E4-6o/8: 75 x 22.5 x 110 mm, approx. 110 g DSA-E4-6o/14: 75 x 40 x 110 mm, approx 260 g

Temperature Range

Operation / Storage	0 ... +50 °C / -20 ... +85 °C
Humidity (noncondensing)	20 ... 80 %

**Auxiliary modules
for drive positioning and synchronization**

Low-cost motion-control modules	MACS3: 1-Axis control unit MACS4: 3-Axis control unit
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Front view:

