

DSA-E2

The High-Power Line of Servo Amplifiers

Standardized, Digital, Compact, Powerful

The **DSA-E2** is the most powerful servo amplifier of the DSA product line. It is the best choice for all high power, low voltage brush and brushless drives.

The **DSA-E2** is the link to more efficiency, more dynamics and more performance of your applications. Up to 50 or 75 A peak current enables maximum acceleration of 24 V and 48 V servo motors, making your mechanics react more quickly.



Product Highlights

- ◆ 10 - 60 V DC
- ◆ 25 A / 35 A continuous current, 50 A / 75 A peak current
- ◆ Brush and brushless motors
- ◆ Current / torque, speed and position control
- ◆ CANopen DS402
Optional: EtherCAT, Profibus, Modbus, RS485, RS232

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-E2** 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

The compact full metal housing (HxWxD: 30 x 100 x 112 mm) optimizes heat flow without an additional cooling system.

The small front side is very space saving in a cabinet. An easy mounting near to the motor is also possible on the flat side of the module.

Powerful

The latest MOS-FET technology provides up to 1.2 kW continuous and 2.4 kW peak at 48 V for the standard **DSA-E2** without an additional heat sink. OEM versions offer up to 4.5 kW peak (at 60 V).

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 and high current ratings, the DSA can be used for different motor power levels, even in battery powered devices. 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.

High-Power Servo Amplifier Module

DSA-E2-60/25
(Part No. 001328)

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}	25 A (on request: 35 A)
Peak output current	I_{Max}	50 A (on request: 75 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 f_{Max} max. 500 kHz
Hall sensors: H1, /H1, H2, /H2, H3, /H3	Signal type	5 V single-ended or differential
Absolute encoders (Optional):	Protocol	Hyperface, SSI

Inputs & Outputs

Digital inputs 0 ... 3	U_{In} R_i	Low: 0 ... 5 V / High: 15 ... 30 V 5 k Ω
Analog inputs 0	$U_{InAnalog}$ R_i	-10 ... +10 V (10 Bit) 100 k Ω
Digital outputs 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
-----------------------------	-------------------------	---------------------------

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

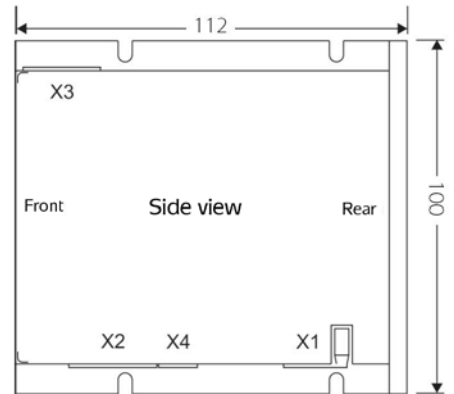
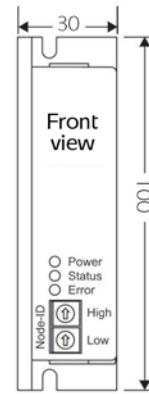
Type of housing	Compact full metal module
Connector type	Pluggable tension spring clamps and Tyco power connector
Dimensions and weight (without connectors)	H x W x D 100 x 30 x 112 mm, 360 g

Temperature Range

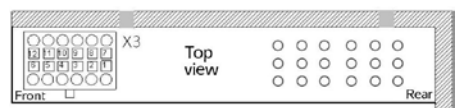
Operation / Storage	0 ... +50 °C / -20 ... +85 °C
Humidity (noncondensing)	20 ... 80 %

Auxiliary modules for drive positioning and synchronization

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



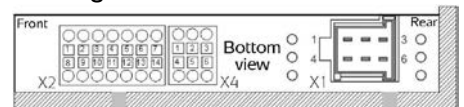
Pin assignment top view:



res. 7	1	+Ue 24V
-AIN0 8	2	+AIN0
DOU/TO 9	3	DIN0
CAN-High 10	4	DIN1
CAN-Low 11	5	DIN2
CAN-GND 12	6	DIN3

X3:
CAN
I/O
24V

Pin assignment bottom view:



+U 5V/ 7	14	GND	CLK 3	6	/CLK	GND 3	6	Mc
INX 6	13	/INX	res. 2	5	res.	+Up 2	5	Mb
B 5	12	/B	Data 1	4	/Data	PE 1	4	Ma
A 4	11	/A						
H3 3	10	/H3						
H2 2	9	/H2						
H1 1	8	/H1						