

DSA-C CANOPEN SERVO AMPLIFIER MODULES

Standardized, Compact, Digital, Powerful

The full digital servo amplifier modules of the **DSA-C** product line are the optimized power link in between the motor and the supervisor system.

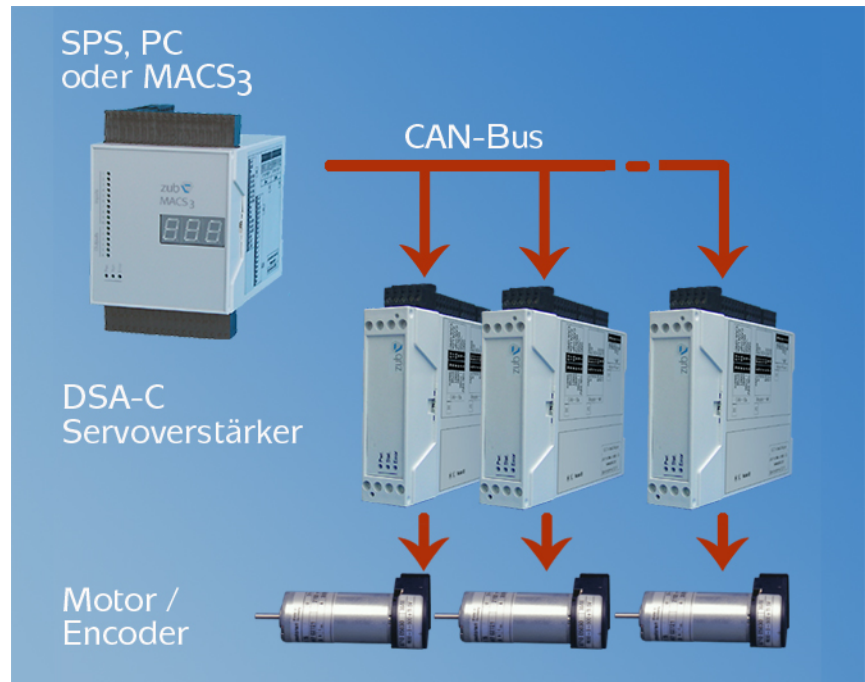
DSA servo amplifiers provide the drives with the efficiency and performance needed to go one step ahead with your application.

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 coil solenoid and electronic servo traversing gears
- ◆ **Dosing**
Injection plunger control
- ◆ **Labeling**
Synchronous label ejection

Did we miss your application?
Please, call us!

zub machine control AG will offer you a complete solution based on the **DSA** product.



Standardized

The communication interface is based on the standardized and well-known CANopen protocol. Commanding can be done according to the CANopen DS402 device specification. This guarantees a maximum of multivendor compatibility and long-term investment protection.

PLCs as well PCs can be used as supervisor systems. Multi-axis tasks can be easily solved using our specialized **MACS3** control until as the supervisor.

Compact

All **DSA** servo amplifiers are integrated in a compact narrow housing for top hat rail mounting. All connectors are on top. Maximum utilization of your electrical control cabinet becomes an easy job.

Digital

Digital commanding and processing right from the input up to the output is the base for a high level of system transparency. This offers the chance for detailed diagnostics and optimization during development, precise reproducibility and quality control in production, as well as plug-and-play in the service field.

Powerful

Latest MOS-FET technology goes up to 500 W continuous and 1000 W peak. This gives the torque and dynamics to the motor required by your application. The choice of the best motor technology for your needs still belongs to you. Each **DSA** servo amplifiers can handle different types of brush and brushless motors.

Digital CANopen Servo Amplifier Modules

DSA-C3-35/6 & C3-35/9
Versions: 35V/6A, 35V/9A

DSA-C4-60/5 & C4-60/7
Versions: 60V/5A, 60V/7A

Modes of Operation

Torque control	● (Profile Torque Mode)	● (Profile Torque Mode)
Velocity control (encoder or Hall)	● (Velocity Mode)	● (Velocity Mode)
Position control (encoder or Hall)	● (Profile Position Mode)	● (Profile Position Mode)
OEM custom modes	■ (on request)	■ (on request)

Electrical Data

Supply voltage: Logic & I/O	U_B	24 VDC \pm 25 %	48 VDC \pm 25 %
Supply voltage: Power stage	U_L	10 ... 35 VDC	10 ... 60 VDC
Continuous output current	I_{Cont}	C3-35/6 6 A C3-35/9 9 A	C4-60/5 5 A C4-60/7 7 A
Peak output current	I_{Max}	15 A	15 A
Efficiency	η_{Max}	95 %	95 %
Min. required inductance	L_{Motor}	400 μ H	400 μ H
PWM frequency	f_{PWM}	25 kHz	25 kHz
Current control frequency	f_{CurReg}	5 kHz	5 kHz
Velocity / position control frequency	f_{VelReg}	0,5 ... 2,5 kHz (depending on mode)	0,5 ... 2,5 kHz (depending on mode)

Position & Velocity Feedback

Encoder signals A, /A, B, /B, I, /I	Signal type f_{Max}	RS422, 5 V, differential max. 500 kHz	RS422, 5 V, differential max. 500 kHz
Hall sensors H1, /H1, H2, /H2, H3, /H3	Signal type	5 V single-ended or differential	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	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	-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	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	5 VDC \pm 5 % 200 mA
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CAN Interface

Baud rate	Up to 1 Mbit/s	Up to 1 Mbit/s
Protocol	DS301 V3.0	DS301 V3.0
Device specification	DSP402 V2.0	DSP402 V2.0

Protective Functions

Overvoltage	●	●
Overtemperature	●	●
Galvanic Isolation: CPU - CAN	-	-
Galvanic Isolation: CPU - IO	-	-

Mechanical Data

Type of housing		Hat rail module (IP20)	Hat rail module (IP20)
Size (without connectors) and Weight	B x H x T	C3-35/6 22,5 x 75 x 110 mm ca. 110 g C3-35/9 40 x 75 x 110 mm ca. 260 g	C4-60/5 22,5 x 75 x 110 mm ca. 110 g C4-60/7 40 x 75 x 110 mm ca. 260 g

Temperature Range

Operation / Storage	0 ... +50 C / -20 ... +85 C	0 ... +50 C / -20 ... +85 C
Humidity (not condensing)	20 ... 80 %	20 ... 80 %

Auxiliary Modules

Supervisor control	Recommendation	■ MACS3 Multi-axis positioning & synchronization	■ MACS3 Multi-axis positioning & synchronization
Brake chopper	Option	■ zub BRAKECHOPPER	■ zub BRAKECHOPPER