

Servo Amplifier / Stepper Motor Amplifier ECOMODUL

Modular and scalable for up to 8 axes



CANopen
EtherCAT 



Application-specific configuration

Modular design
Slots for axis-, I/O- and customized modules



Minimum footprint in the cabinet

Dimensions 39 x 212 x 145 mm (W x H x D) for 4 axes
Dimensions 79 x 212 x 145 mm (W x H x D) for 8 axes



Cost-efficient solution

Reduced installation effort
Implemented sequences replace smaller controllers



Easy commissioning

Intuitive parameterization and commissioning via JAT engineering software ECOSTUDIO®



Diverse drive applications

Numerous technology functions for application-specific drive solutions, no time-consuming programming



NEW: Sensorless motion

Servo operation without encoder: closed control loop, load-optimized, energy and cost-saving



Appropriate JAT Switching Power Supply: SN60V/8A

Power supply:

20 ... 60 V_{DC}

Output current:

9 A_{eff} per axis

Control of:

2- and 3-phase synchronous servo motors, DC motors, stepper motors

Safety integrated:

Safety function STO*

Encoder:

Position feedback via incremental encoder or absolute value encoder (BISS®)

Fast current controller:

approx. 61 μs

Interpolating operation via CANopen

I/O functionality (per axis):

2 digital inputs
1 digital output
1 analog input
additional I/O with separate module*

Micro-USB parameterization interface

Customer specific modules possible

*) under preparation

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→ Technical data

DC Supply		
Rated voltage supply	[V _{DC}]	20 ... 60
Max. installed load	[W]	400 / 800*
*) Specified power at 60 V for 4-/8-axis device		

Data of Power Output Stage (Per Axis)		
Peak output current	[A _{RMS}]	9 (5 s)
Rated output current	[A _{RMS}]	4
Max. output power	[W]	300
Rated output power	[W]	120
Brake connection	[A]	max. 1 (0.5 s) rated 0.5

Ambient conditions		
Class	Operation: 3K3 according to EN 61800-2 Storage, transport: 1K4 according to EN 61800-2	
Storage temperature	[°C]	-25 ... +55
Ambient temperature during operation	[°C]	+5 ... +40
Degree of humidity, non-condensing	[% rel. F.]	85 (maximum)
Installation altitude above sea level	[m]	< 1500
Mounting position	The technical data refer to a vertical position.	
Protection class	IP20	
Pollution degree	2	
Cooling	In a closed cabinet, sufficient circulating air movement must be provided.	

Standards	
Ambient conditions	according to EN 61800-2
Applied standards for CE	EMC according to EN IEC 61800-3, Electrical safety according to EN 61800-5-1, RoHS according to EN IEC 63000 Devices with the safety function STO: Functional safety according to EN 61800-5-2

Logic Supply		
Logic supply	[V]	24 (18 ... 30)
Max. input current at 24 V _{DC}	[A]	0.2 / 0.4*
*) without external loads (e.g. digital I/O or encoder), applies to 4-/8-axis device		

Digital Inputs and Outputs		
2 digital control signal inputs per axis	[V]	24 (18 ... 30)
1 digital control signal output per axis*	[A]	max. 1 (0.5 s) rated 0.5
*) only available for motor with holding brake		

All digital inputs available in the ECOMODUL can be assigned across different axes.
Additional digital inputs and outputs are available when using a separate module (under preparation).

Analog Inputs		
1 analog input per axis	[V]	±10
Resolution	[Bit]	11

Safety function STO (under preparation, comprises all axes)	
2 STO inputs	
1 STO feedback signal (output)	
SIL-3 (according to EN 61800-5-2); PL e (according to ISO EN 13849-1)	

Dimensions and weight ECOMODUL max. 4 axes		
Dimensions (H x W x D)	[mm]	212 x 39 x 145
Weight	[kg]	1,2

Dimensions and weight ECOMODUL max. 8 axes		
Dimensions (H x W x D)	[mm]	212 x 79 x 145
Weight	[kg]	2,5

Customs tariff number	
Customs tariff number	85371091

Basic functions

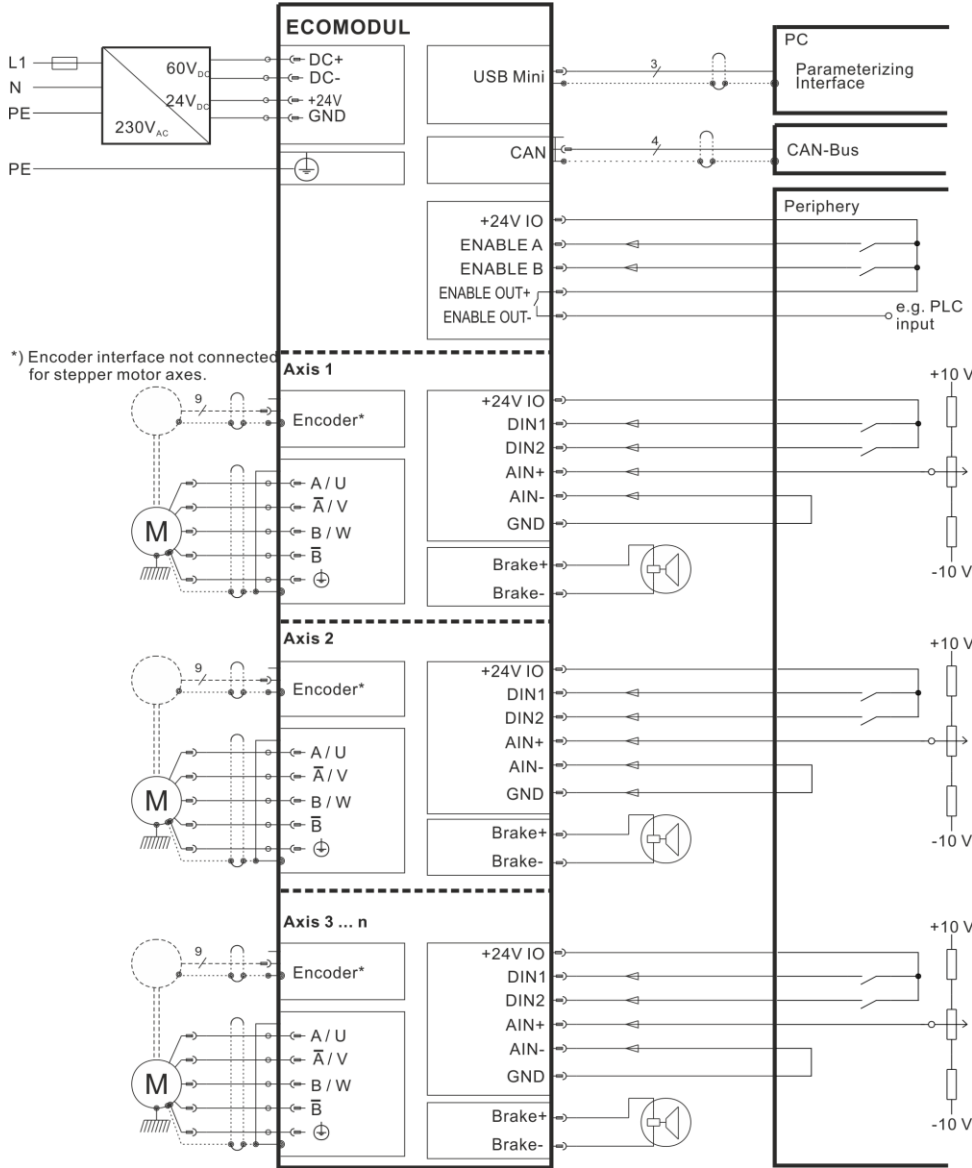
- ✓ Digital current, speed and position control for up to 8 axes
- ✓ Digital filtering functions to dampen vibrations in the overall system
- ✓ Parameterizable jerk filters optimize the motion profiles and improve the machine's longevity
- ✓ Short circuit, voltage, temperature, encoder, following error and i²t monitoring
- ✓ Intelligent holding brake control with current reduction
- ✓ Evaluation of limit switches and reference sensor, multiple homing modes
- ✓ Motion Control, interpolation via CANopen
- ✓ Two-colour LED status display per basic module and axis module
- ✓ Connectors: Molex Ultra-Fit, Molex Nano-Fit, Molex Mega Fit (power supply)

ECOSTUDIO® - Easy commissioning

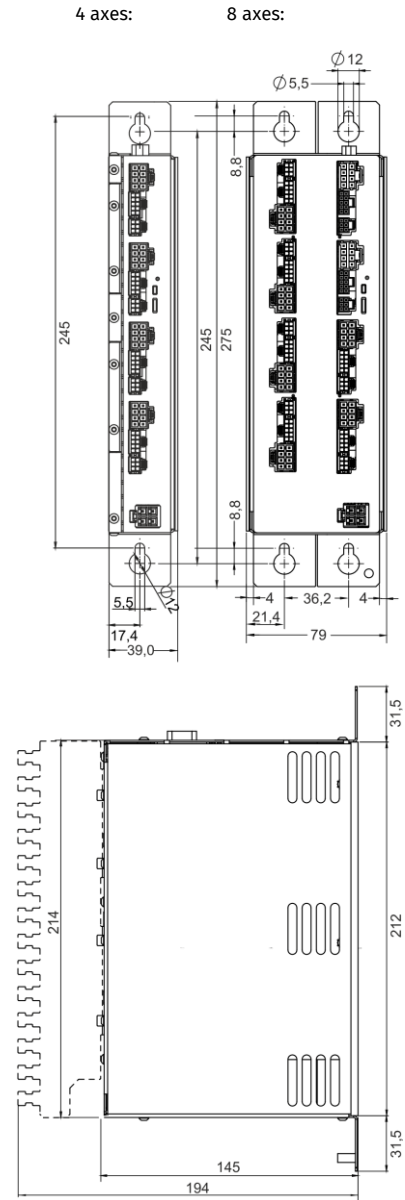
- ✓ Intuitive user interface, parameter setting via wizards
- ✓ Displays actual performance parameters
- ✓ Integrated motor, encoder and axis database
- ✓ Extensive oscilloscope function for analysis and diagnosis
- ✓ Easy graphical sequence programming

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→ Connection diagram

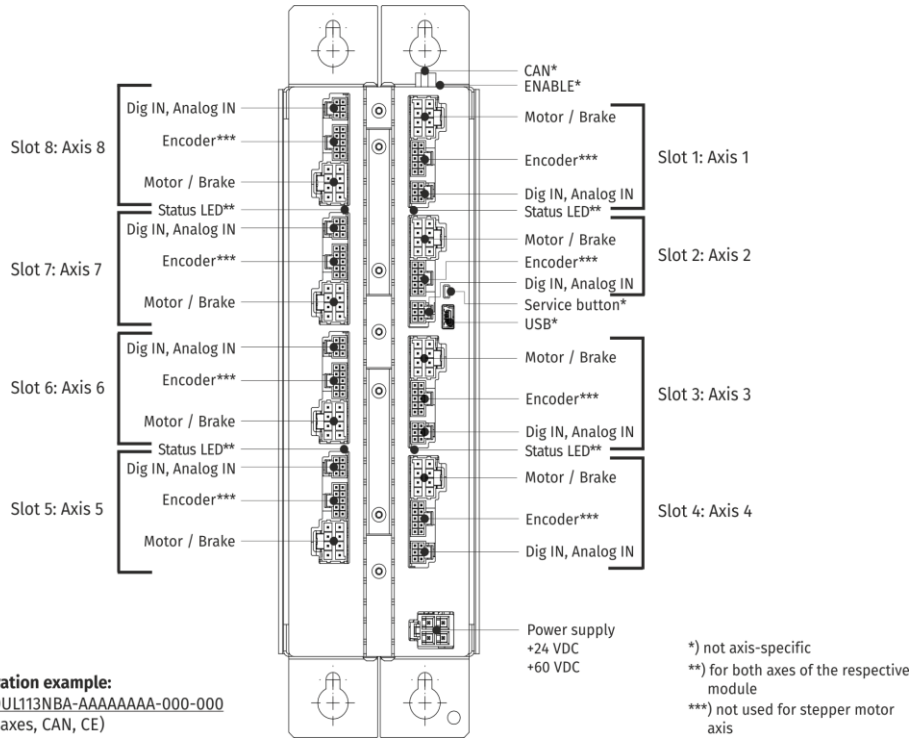


→ Dimensions



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→ Interfaces



→ Ordering key

4-axis housing: ECOMODUL 107uvw - xxxxxxxx - yyy - zzz 8-axis housing: ECOMODUL 113uvw - xxxxxxxx - yyy - zzz

uv	w	xxxxxxx	yyy-zzz
u: Options	Approvals	Configuration (see figure)	yyy: Number of firmware (three digits)
N no option	A CE, standard design	Slot 1 2 3 4 5 6 7 8	zzz: Number of parameter set (three digits)
R STO (in preparation)	B-I CE, special design	A Servo axis 4 A (always in pairs)	
v: Field bus	J CE, UL, standard design	C Stepper motor axis (always in pairs)	
B CAN	K-Z CE, UL, special design	1 Slot free	
Q EtherCAT (in preparation)		0 Slot not available	

→ Accessories

Supplementary parts

EMK40	Mating connector set for ECOMODUL 4-axis	EMK41	Strain relief set for ECOMODUL 4-axis
EMK80	Mating connector set for ECOMODUL 8-axis	EMK81	Strain relief set for ECOMODUL 8-axis

ECOMODUL pre-assembled cables (Molex plug connectors) *) xx = length in m, standard 3 m, 5 m, 10 m

MOT43-853-721-0xx-000 *	Motor cable extension e.g. for ECOSTEP® motor 17H, 23S	Ø 6,4 mm; bending radius > 35 mm	motor side: RSV1.6, 6-pin
MOT40-854-722-0xx-000 *	Motor/brake cable extension e.g. for 17H, 23S	Ø 8,1 mm; bending radius > 45 mm	motor side: RSV1.6, 9-pin
ENC47-861-495-0xx-000 *	Incremental encoder extension e.g. for 17H, 23S	Ø 6,2 mm; bending radius > 35 mm	motor side: D-Sub, 9-pin
ABS47-862-301-0xx-000 *	Absolute value encoder extension e.g. for 17H, 23S	Ø 6,2 mm; bending radius > 35 mm	motor side: HD-Sub, 15-pin
SNS99-866-000-001-000	Digital and analog inputs		customer side: single wires
SNS99-867-000-001-000	Enable		customer side: single wires
NET99-870-000-001-000	Power supply, logic supply		customer side: single wires

If you need cables specially tailored to your application, please do not hesitate to contact us.