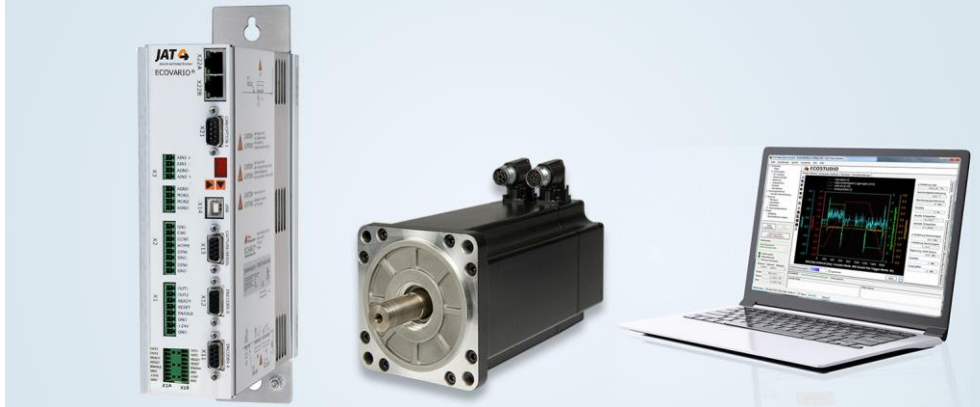


Servo Amplifier ECOVARIO® 616A

Powerful for highly dynamic positioning



CANopen
EtherCAT
PROFI BUS **PROFI NET**

UL US
LISTED



High connectivity

Multiple interfaces - CANopen, EtherCAT, PROFIBUS, PROFINET, Ethernet, RS485, RS232



Integrated safety

Safety function STO (Safe Torque Off) according to EN 61800-5-2



Cost-efficient solution

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

Power supply:

200 ... 528 V_{AC} 3-phase

Control of:

3-phase brushless synchronous motors or synchronous linear motors

2 encoder interfaces:

Position feedback via incremental encoder: RS422, SINCOS

Position feedback via absolute encoder: BISS® or HIPERFACE® interface

Encoder output for master-slave operation

Concurrent processing of multiple feedback signals

Fast current control

approx. 62,5 µs

Interpolating operation via EtherCAT or CANopen

I/O:

7 digital inputs

3 digital outputs

2 high speed capture inputs (RS422) for fast event capturing

Servo Amplifier ECOVARIO® 616A

→ Technical data

3-phase AC supply		
Rated supply voltage	[V _{AC}]	400
Mains frequency	[Hz]	50 ... 60
Rated installed load	[kVA]	8,2
Rated power loss	[W]	280
Rated output voltage	[V _{AC}]	390

Data of the power stage		
Peak output current (3~)	[A _{RMS}]	16
Max. phase current	[A _{DC}]	22,5
Rated output current (3~)	[A _{RMS}]	8
	[A _{DC}]	11,25
Max. DC link voltage	[V _{DC}]	850
Rated DC link voltage	[V _{DC}]	560
Overvoltage trip	[V _{DC}]	850
Max. output power	[kW]	10
Rated output power	[kW]	5,4
DC link capacity	[µF]	470
Regenerated capacity	[Ws]	96

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.	

Logic Supply		
Logic supply	[V]	24 ± 10 %
Input current (maximum) @ 24 V _{DC}	[A]	0,8*
*) without external loads, e.g. I/O or encoder		

Digital inputs/outputs		
7 digital control signal inputs	[V]	LOW 0...5, HIGH 15...30
	[mA]	5 (@ 24 V)
3 digital control signal outputs	[V]	24
	[A]	0,5
2 fast capture inputs		RS422
	[ns]	40

Safety function STO		
2 STO inputs		
1 STO feedback signal (output)		
SIL-2 (acc. to EN 61800-5-2); PL d (ISO EN 13849-1)		

Dimensions and weights		
Dimensions W x H x D	[mm]	82 x 330 x 225
Weight	[kg]	4,0

Standards		
Applied standards for CE certification	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	
Standards UL	UL61800-5-1	

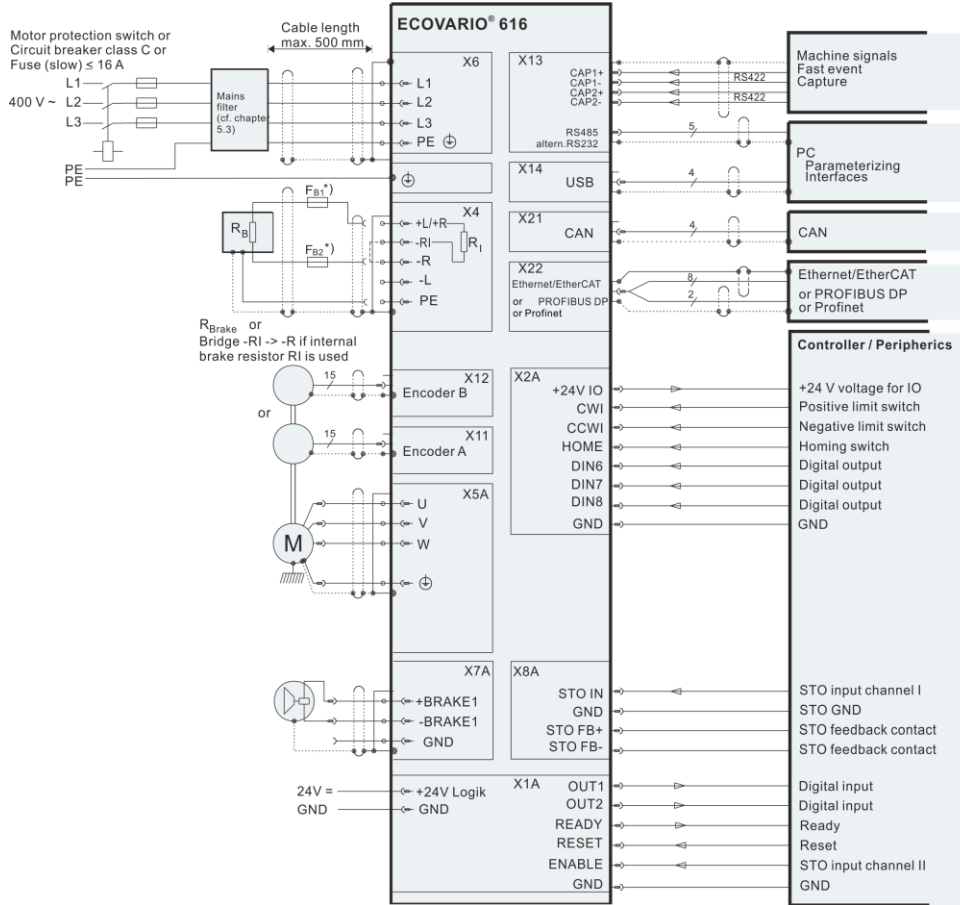
Customs tariff number	
Customs tariff number	85371091

Basic functions

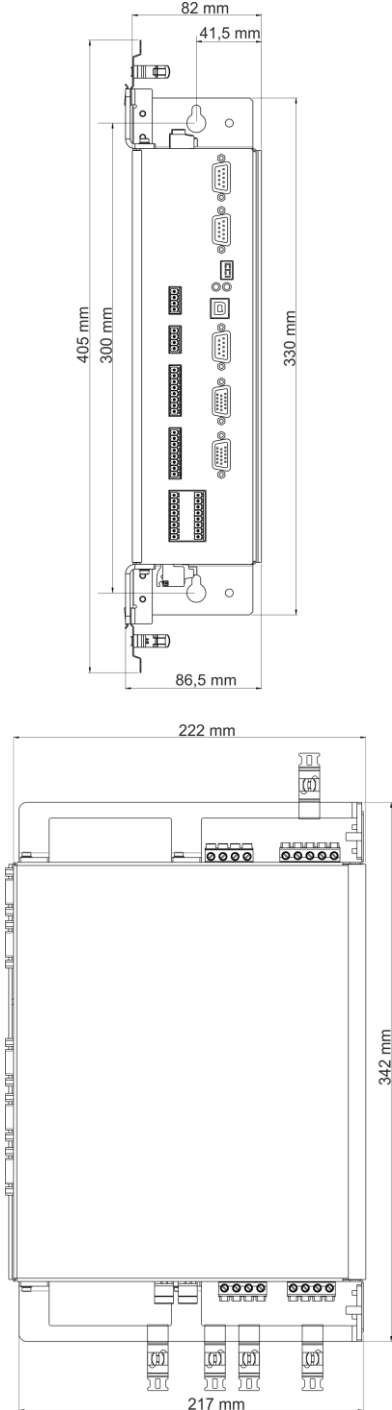
- ✓ Digital current, speed and position control with position, speed and torque limits
 - ✓ Digital filtering functions to dampen vibrations in the overall system
 - ✓ Parametrizable velocity profiles with jerk limiting
 - ✓ Short circuit, voltage, temperature, encoder, following error and i²t monitoring
 - ✓ Intelligent holding brake control with automatic voltage reduction
 - ✓ Evaluation of limit switches and reference sensor, multiple homing modes
 - ✓ Status display and configuration of fieldbus node address and baud rate via 7 segment display and 2 keys on the device's front side
 - ✓ Internal ballast resistor (continuous power: 30 W), connector for external ballast resistor
- ## 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

Servo Amplifier ECOVARIO® 616A

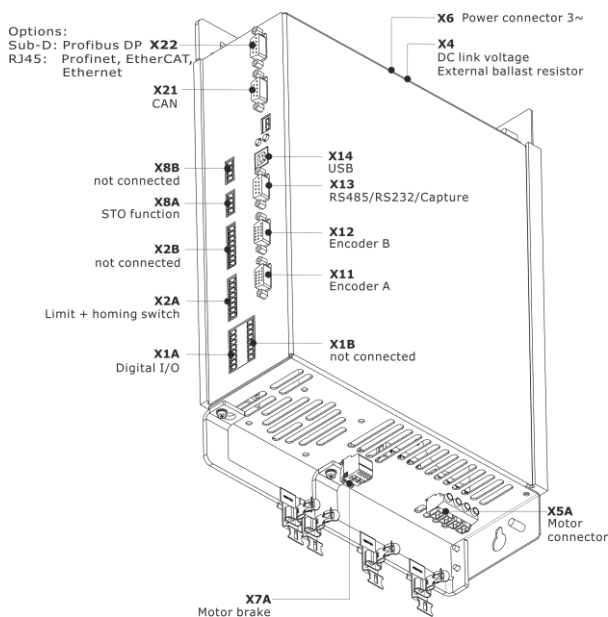
→ Connection diagram



→ Dimensions



→ Interfaces



Servo Amplifier ECOVARIO® 616A

→ Ordering key

ECOVARIO® 616 Av - wx - yyy - zzz

v		w		x		yyy	zzz
Option		Field bus		Approval		Firmware number (three digits)	Parameter set number (three digits)
R	Safety function "Safe Torque Off" (STO)	A	CAN + RS485 + encoder emulation	A	CE, standard design		
N	No option	B	CAN + RS232 + encoder emulation	B-I	CE, custom design		
		F	CAN + RS485 + PROFIBus® DP-V0	J	CE, UL, standard design (UL approval)		
		G	CAN + RS232 + PROFIBus® DP-V0	K-Z	CE, UL, custom design (UL approval)		
		H	CAN* + PROFINet® + RS485*				
		I	CAN* + PROFINet® + RS232*				
		K	CAN + Ethernet + RS485				
		L	CAN + Ethernet + RS232				
		P	CAN + EtherCAT® + RS485				
		Q	CAN + EtherCAT® + RS232				

*) CAN/RSxxx as service interface for ECOSTUDIO® only; no object dictionary acc. to CANopen DS402

→ Accessories

Accessories

DHZ21	Shield set ECOVARIO® 616 AR
DHK11	Mating connector set ECOVARIO® 616 AR
DDK21	Encoder splitter 1x INK, 1x ABS an X11 / X12
DDK22	Encoder splitter 2x INK an X11 / X12

External ballast resistor

DPR40-200	Ballast resistor 40 Ω/200 W (500 W cooled)
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Power supply

SV24	1-phase power supply 24 V _{DC} / 5 A
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Further details regarding the power supplies can be found in the separate data sheet *Power supplies*.

Mains filter

HLD 110-500/12	3-phase mains filter 500 V _{AC} / 12 A
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