

Servo Amplifier ECOVARIO® 616D

Powerful for 2 axes up to 10 kW



CANopen
EtherCAT
PROFI **PROFI**
BUS **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 per axis

3 digital outputs per axis

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

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→ 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

*) Sum of the currents or powers of both axes. Ratio parameterizable.

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 per axis	V	LOW 0...5, HIGH 15...30
	mA	5 (@ 24 V)
3 digital control signal outputs per axis	V	24
	A	0,5
2 fast capture inputs	RS422	
	ns	40

Safety function STO		
2 STO inputs per axis		
1 STO feedback signal (output) per axis		
SIL-3 (according to EN 61800-5-2); PL e (according to ISO EN 13849-1)		

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

Standards	
Ambient conditions	according to EN 61800-2
Applied standards for CE cert.	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

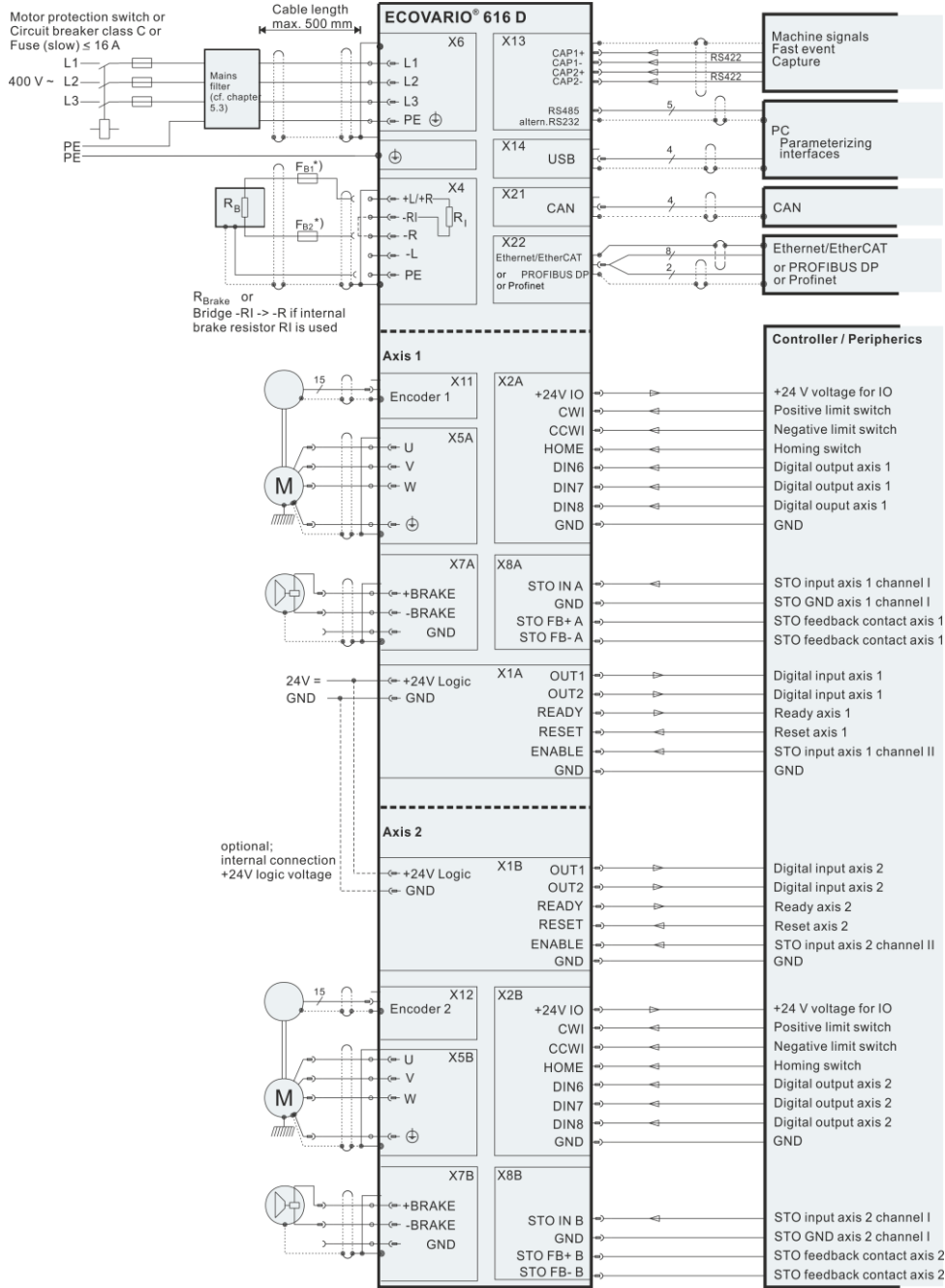
Customs tariff number	
Customs tariff number	85371091

Basic functions

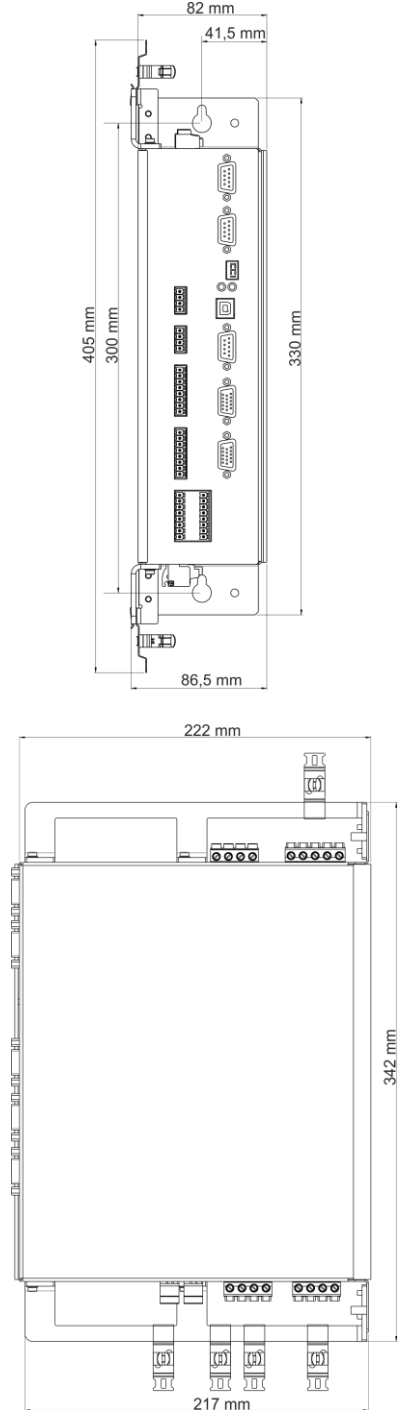
- ✓ Digital current, speed and position control with position, speed and torque limits
 - ✓ Digital filtering functions to dampen vibrations in the overall system
 - ✓ Parametrizable velocity profiles with jerk limiting
 - ✓ Short circuit, voltage, temperature, encoder, following error and i²t monitoring
 - ✓ 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

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→ Connection diagram

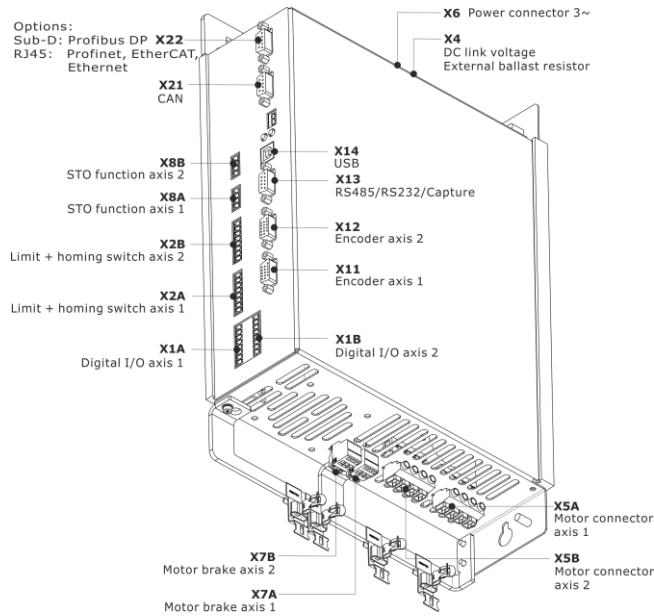


→ Dimensions



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→ Interfaces



→ Ordering key

ECOVARIO® 616 Dv - wx - yyy - zzz				
v	w	x	yyy	zzz
Option	Field bus	Approval	Firmware number (three digits)	Parameter set number (three digits)
R	A	J		
	B	K-Z		
	F			
	G			
	H			
	I			
	K			
	L			
	P			
	Q			

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

→ Accessories

External ballast resistor		Accessories	
DPR40-200	Ballast resistor 40 Ω/200 W (500 W cooled)	DHZ20	Shield set ECOVARIO® 616D
Power supply		DHK10	Mating connector set ECOVARIO® 616D
SV24	1-phase power supply 24 V _{DC} / 5 A	DDK21	Encoder splitter 1x INK, 1x ABS an X11 / X12
Further details regarding the power supplies can be found in the separate data sheet <i>Power supplies</i> .		DDK22	Encoder splitter 2x INK an X11 / X12
Mains filter			
HLD 110-500/12	3-phase mains filter 500 V _{AC} / 12 A		