

Servo Amplifier ECOVARIO® 214

The all-rounder in the power range up to 3,4 kW



CANopen
EtherCAT
PROFIBUS

UL US
LISTED



High connectivity

Multiple interfaces - CANopen, EtherCAT, PROFIBUS, 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:

24 ... 150 V_{DC} OR

20 ... 105 V_{AC}

Control of:

2- and 3-phase brushless synchronous motors or synchronous linear motors

DC servo motors with brushes

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

Interpolating operation via EtherCAT or CANopen

I/O

6 digital inputs

3 digital outputs

2 analog inputs

2 analog monitor outputs

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→ Technical data

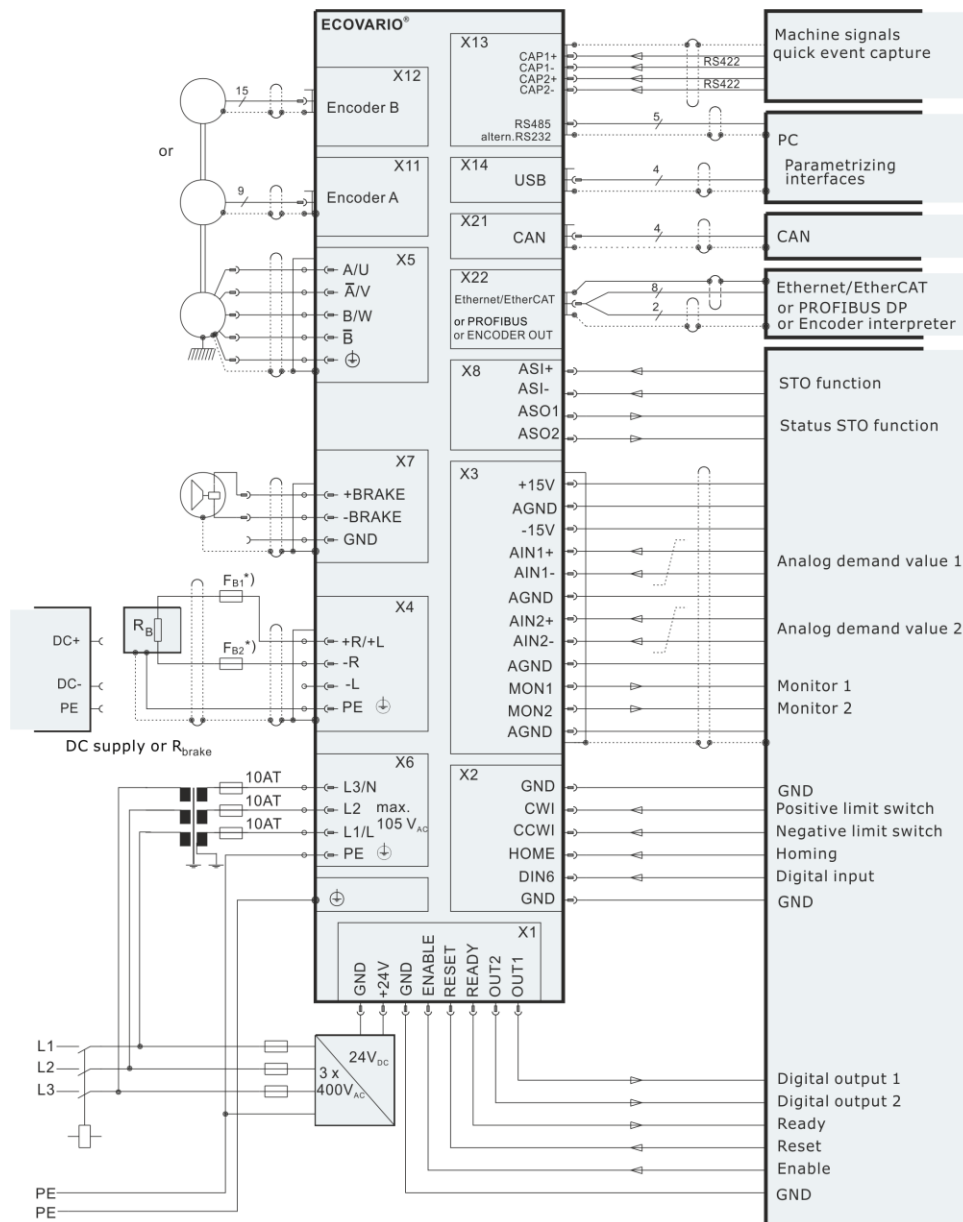
1-phase AC supply		
Rated supply voltage	[V _{AC}]	105
Mains frequency	[Hz]	50 ... 60
Rated installed load	[kVA]	1,0
Rated power loss	[W]	62
Rated output voltage (AC)	[V _{AC}]	85
3-phase AC supply		
Rated supply voltage	[V _{AC}]	105
Mains frequency	[Hz]	50 ... 60
Rated installed load	[kVA]	1,4
Rated power loss	[W]	89
Rated output voltage (AC)	[V _{AC}]	95
DC supply		
Rated supply voltage	[V _{DC}]	150
Rated installed load	[W]	1500
Rated power loss	[W]	75
Power output stage		
Effective phase current (maximum)	[A _{eff}]	14
Phase current (maximum)	[A _{DC}]	20
Rated output current 2-phase motor	[A _{eff}]	5,3
Rated output current 3-phase motor	[A _{eff}]	7,1
Output voltage (maximum)	[V _{DC}]	170
Rated output voltage	[V _{DC}]	150
Oversvoltage shutdown	[V _{DC}]	200
Output (< 5 s)	[kW]	3,4
Rated installed load	[kW]	1,2
AC / DC link capacity	[μF]	2000 / 1000
AC / DC energy feedback	[Ws]	10 / 5
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	
UL	UL508C	
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		
6 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
Analog inputs/outputs		
2 analog inputs	[V]	-10 ... +10
2 analog monitor output	[V]	-10 ... +10, 10 Bit
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 weight		
Dimensions W x H x D	[mm]	62 x 279 x 167
Weight	[kg]	2,1
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.	
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
 - ✓ Parameterizable jerk filters optimize the motion profiles and improve the machine's longevity
 - ✓ Short circuit, voltage, temperature, encoder, following error and i²t monitoring
 - ✓ Scalable analog inputs for arbitrary target values
 - ✓ Scalable analog monitor outputs for arbitrary actual values
 - ✓ 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
 - ✓ 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

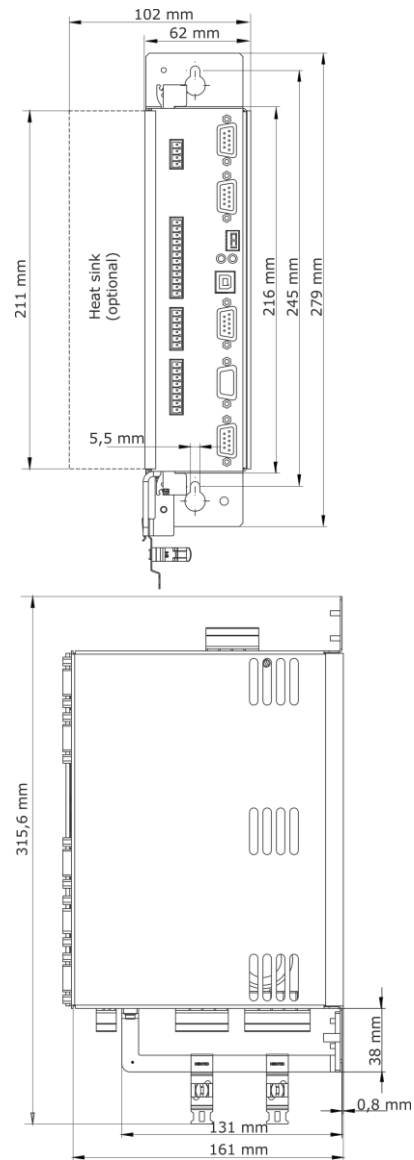
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→ Connection diagram



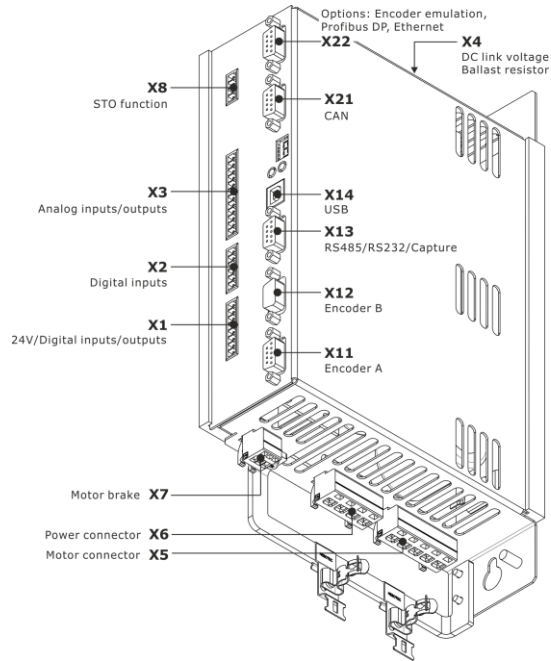
*) not necessary if ballast resistor DPRxx is used

→ Dimensions



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→ Interfaces



→ Ordering key

ECOVARIO® 214 uv - wx - yyy - zzz

u	v	w	x	yyy	zzz
Supply	Option	Field bus	Approval	Firmware number (three digits)	Parameter set number (three digits)
A 1- or 3-phase, AC or DC	R Safety function "Safe Torque Off" (STO)	A CAN + RS485 + encoder emulation	A CE, standard design		
B DC	N No option	B CAN + RS232 + encoder emulation	B-I CE, custom design		
		F CAN + RS485 + PROFibus®	J CE, UL, standard design		
		G CAN + RS232 + PROFibus®	K-Z CE, UL, custom design		
		K CAN + Ethernet + RS485			
		L CAN + Ethernet + RS232			
		P CAN + EtherCAT® + RS485			
		Q CAN + EtherCAT® + RS232			

→ Accessories

Accessories

DPZ20	Standard shield set (1 shield bracket, 2 cable clamps, mounting parts)
DPK10	Mating connector set ECOVARIO® 214/414

External ballast resistors

DPR10-100	Ballast resistor 10 Ω/100 W (250 W cooled)
DPR10-200	Ballast resistor 10 Ω/200 W (500 W cooled)

Power supply

SV24	1-phase power supply 24 V _{DC} / 5 A	TE500-85/105	1-phase transformer 85/105 V _{AC} / 500 VA
SV24/85/105	1-phase power supply 24 V _{DC} / 4 A, 85 V _{AC} or 105 V _{AC} / 650 VA	TD1000-42/85/105	3-phase transformer 42/85/105 V _{AC} / 1000 VA
		TD1500-42/85/105	3-phase transformer 42/85/105 V _{AC} / 1500 VA

Further details regarding the power supplies can be found in the separate data sheet *Power supplies*.