



# SCJ\*

## SERVO-CONTROLLERS

### SERIES 10

#### INTERFACES

- EtherCAT/Ethernet interface
- CANopen
- Prof bus DP
- RS232 interface for parameterisation via PC
- 2 encoder interfaces
- Encoder output for master-slave operation
- „STO“ function according to EN 61800-5-2

#### FUNCTIONS

- Operation of 2- and 3- phase brushless synchronous motors
- Operation of 2-and 3-phase synchronous linear motors
- Operation of brushed DC servo motors
- Torque / force, speed, and positioning control
- Position feedback via incremental encoder: RS422, SINCOS
- Position feedback via absolute value encoder: BISS® or HIPERFACE® interface
- Simultaneous use of several feedback systems possible
- Interpolation via EtherCAT or CANopen

#### TECHNICAL CHARACTERISTICS

24V supply (current consumption without output)	V DC A	24 ±10% 0.8
8 digital control signal inputs (depending on controller type)	V mA	LOW 0-7, HIGH 12-36 10 (at 24 V)
3 digital control signal outputs (depending on controller type)	V A	24 0.5

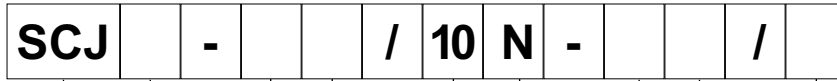
#### AMBIENT CHARACTERISTICS

Class	3K3 acc. to EN 50178
Ambient temperature during operation with rated load	5 °C ÷ 40 °C (storage temperature: - 10 ÷ 70°C)
Degree of humidity (non-condensing)	max. 95% rel. humidity
Cooling	In a closed cabinet, sufficient circulating air movement must be provided
Installation altitude	max. 1500 m above mean sea level without power reduction
Mounting position	The technical data refer to a vertical mounting position
Protection class	IP20, pollution degree 2
Applied standards for CE	EMC acc. to EN61800-3, safety acc. to EN61800-5-1



**1 - IDENTIFICATION CODE**

**1.1 - SINGLE AXIS IDENTIFICATION CODE**



Servocontroller  
J type, single axis

Max power (W/100)  
**14** = 1400 W  
**33** = 3300 W  
**71** = 7100 W  
**100** = 10000 W

Current (Arms x 10)  
**C70** = 7 Arms  
**C80** = 8 Arms (only for SCJ100)

Power supply:  
**A48** = 1-phase AC, 48V (for SCJ14)  
**T105** = 3-phase AC, 105V (for SCJ33)  
**T230** = 3-phase AC, 230V (for SCJ71)  
**T400** = 3-phase AC, 400V (for SCJ100)

Series No.

Project No.:  
(when needed)  
Jxxx

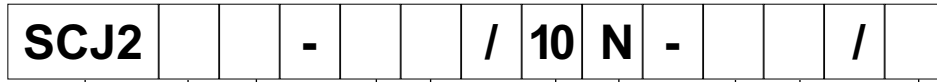
Fieldbus:  
**NN** = none (only encoder emulation)  
**EC** = Ethercat  
**EN** = Ethernet  
**PD** = PROFIBUS DP-V0

Interface:  
**C2** = CanOpen + RS232  
**C4** = CanOpen + RS485

Versions:  
**N** = Standard



**1.2 - DOUBLE AXES IDENTIFICATION CODE**



Servocontroller  
J type, double axes

Project No.:  
(when needed)  
Jxxx

Two axes  
**P** = same power on both axis  
(only for SCJ2\*04 and SCJ2\*14)  
**D** = power splitted on the two axes  
(only for SCJ2\*100)

Fieldbus:  
**NN** = none (only encoder emulation)

Max power (W/100)  
**04** = 400 W  
**14** = 1400 W  
**100** = 10000 W

**EC** = Ethercat  
**PN** = Profinet  
**EN** = Ethernet  
**PD** = PROFIBUS DP-V0

Current (Arms x 10)  
**C25** = 2,5 Arms (only for SCJ2\*04)  
**C70** = 7 Arms (only for SCJ2\*14)  
**C80** = 8 Arms (only for SCJ2\*100)

Interface:  
**C2** = CanOpen + RS232  
**C4** = CanOpen + RS485

Power supply:  
**D60** = direct 60V  
**T400** = 3-phase AC, 400V (for SCJ2\*100)

Versions:  
**N** = Standard

Series No.



**2- ELECTRICAL CHARACTERISTICS**

**2.1 - SINGLE AXIS ELECTRICAL CHARACTERISTICS**

<b>SCJ14</b>		
<b>1-phase AC Supply</b>		
Rated supply voltage	V AC	48
Line frequency	Hz	50 ÷60
Rated installed load	VA	480
Rated power loss	W	40
Rated output voltage (AC)	V AC	42
Rated output current	Arms	7.1
<b>DC supply</b>		
Rated supply voltage	V DC	48
Rated installed load	W	700
Rated power loss	W	50
<b>Data of Power Output Stage</b>		
Peak output current	Arms	14
Max. phase current	A DC	20
Rated output current	Arms	7.1
Rated DC link voltage	V DC	60
Max. DC link voltage	V DC	70
Overvoltage switch-off	V DC	90
DC link capacity	µF	1760
Returnable energy	Ws	2.8

<b>SCJ33</b>		
<b>1-phase AC Supply</b>		
Rated supply voltage	V AC	105
Line frequency	Hz	50 ÷60
Rated installed load	kVA	1
Rated power loss	W	62
Rated output voltage (AC)	V AC	85
Rated output current	Arms	3.5
<b>3-phase AC Supply</b>		
Rated supply voltage	V AC	105
Line frequency	Hz	50 ÷60
Rated installed load	kVA	1.4
Rated power loss	W	89
Rated output voltage	V AC	95
Rated output current	Arms	7.1
<b>DC supply</b>		
Rated supply voltage	V DC	150
Rated installed load	W	1500
Rated power loss	W	75
<b>Data of Power Output Stage</b>		
Peak output current	Arms	14
Max. phase current	A DC	20
Rated output current	Arms	7.1
Rated DC link voltage	V DC	150
Max. DC link voltage	V DC	170
Overvoltage switch-off	V DC	200
DC link capacity (AC/DC supply)	µF	2000/1000
Returnable energy (AC/DC supply)	Ws	10/5

<b>SCJ71</b>		
<b>1-phase AC Supply</b>		
Rated supply voltage	V AC	230
Line frequency	Hz	50 ÷60
Rated installed load	kVA	2.2
Rated power loss	W	70
Rated output voltage (AC)	V AC	205
Rated output current	Arms	3.5
<b>3-phase AC Supply</b>		
Rated supply voltage	V AC	230
Line frequency	Hz	50 ÷60
Rated installed load	kVA	3.5
Rated power loss	W	106
Rated output voltage	V AC	205
Rated output current	Arms	7.1
<b>DC supply</b>		
Rated supply voltage	V DC	325
Rated installed load	W	3250
Rated power loss	W	92
<b>Data of Power Output Stage</b>		
Peak output current	Arms	14
Max. phase current	A DC	20
Rated output current	Arms	7.1
Rated DC link voltage	V DC	325
Max. DC link voltage	V DC	360
Overvoltage switch-off	V DC	400
DC link capacity (AC/DC supply)	µF	660/330
Returnable energy (AC/DC supply)	Ws	13/6.5

<b>SCJ100</b>		
<b>3-phase AC Supply</b>		
Rated supply voltage	V AC	400
Line frequency	Hz	50 ÷60
Rated installed load	kVA	8.2
Rated power loss	W	280
Rated output voltage (AC)	V AC	390
Rated current	Arms	12
<b>Data of Power Output Stage</b>		
Peak output current	Arms	16
Max. phase current	A DC	22.5
Rated output current	Arms	8
Rated output voltage	V DC	560
Max. output voltage	V DC	850
Overvoltage switch-off	V DC	850
DC link capacity	µF	470
Returnable energy	Ws	96
Ballast resistor circuit	internal	



## 2.2 - DOUBLE AXES ELECTRICAL CHARACTERISTICS

<b>SCJ2*04</b>		
<b>DC supply</b>		
Rated supply voltage	V DC	60
Rated installed load	W	260
Rated power loss	W	45
<b>Data of Power Output Stage for each axis</b>		
Peak output current	Arms	7,5
Rated output current	Arms	2,5
Rated DC link voltage	V DC	48
Max. DC link voltage	V DC	60
Overvoltage switch-off	V DC	75
DC link capacity	µF	220
Returnable energy	Ws	0,2
Ballast resistor circuit	external	

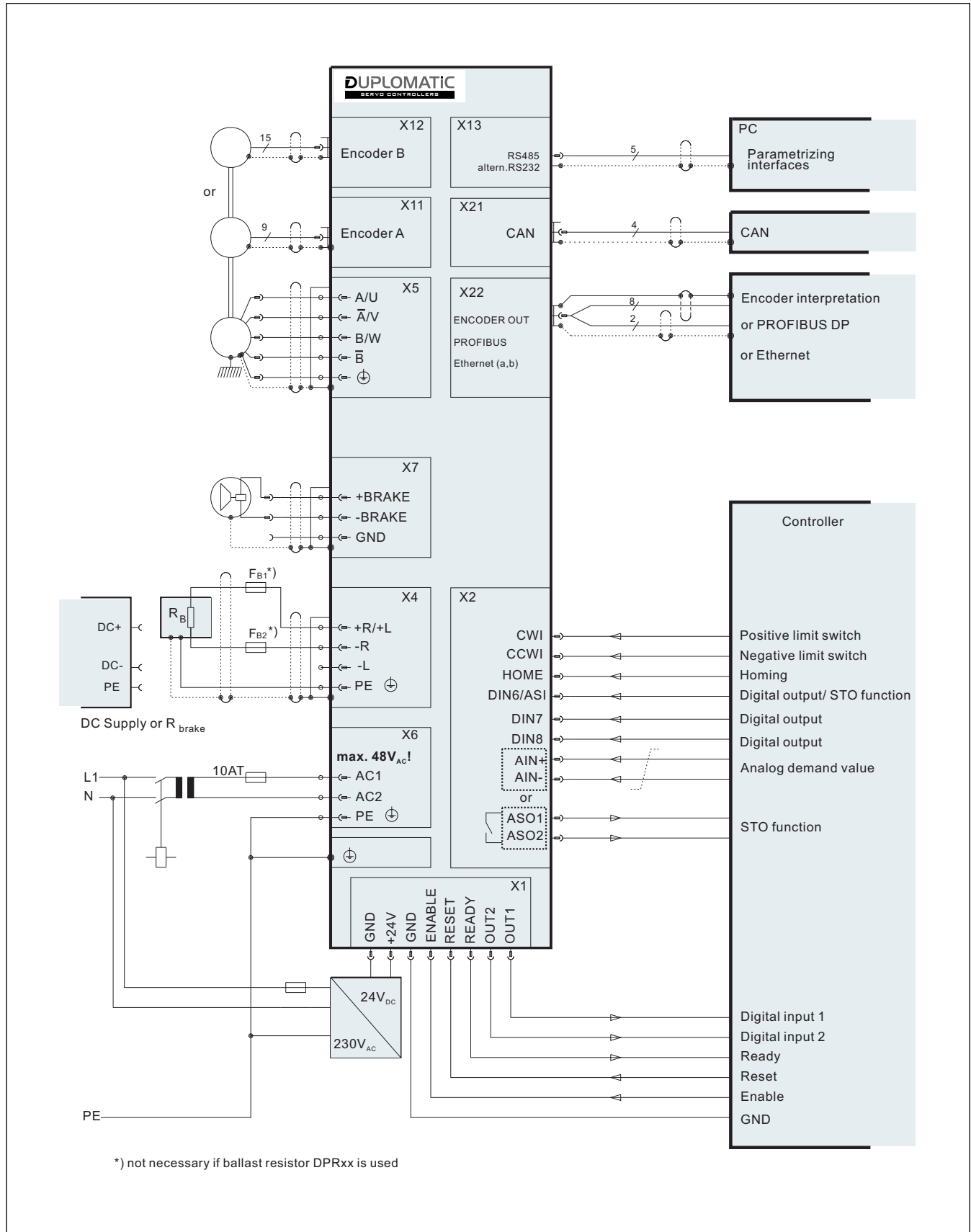
<b>SCJ2*14</b>		
<b>DC supply</b>		
Rated supply voltage	V DC	70
Rated installed load	W	960
Rated power loss	W	45
<b>Data of Power Output Stage for each axis</b>		
Peak output current	Arms	14
Rated output current	Arms	7.1
Rated DC link voltage	V DC	60
Max. DC link voltage	V DC	70
Overvoltage switch-off	V DC	90
DC link capacity	µF	660
Returnable energy	Ws	0,5
Ballast resistor circuit	external	

<b>SCJ2*100</b>		
<b>3-phase AC Supply</b>		
Rated supply voltage	V AC	400
Line frequency	Hz	50 ÷60
Rated installed load	kVA	8.2
Rated power loss	W	280
Rated output voltage (AC)	V AC	390
Rated current	Arms	12
<b>Data of Power Output Stage combined for both axes</b>		
Peak output current	Arms	16
Max. phase current	A DC	22.5
Rated output current	Arms	8
Rated output voltage	V DC	560
Max. output voltage	V DC	850
Overvoltage switch-off	V DC	850
DC link capacity	µF	470
Returnable energy	Ws	96
Ballast resistor circuit	internal	

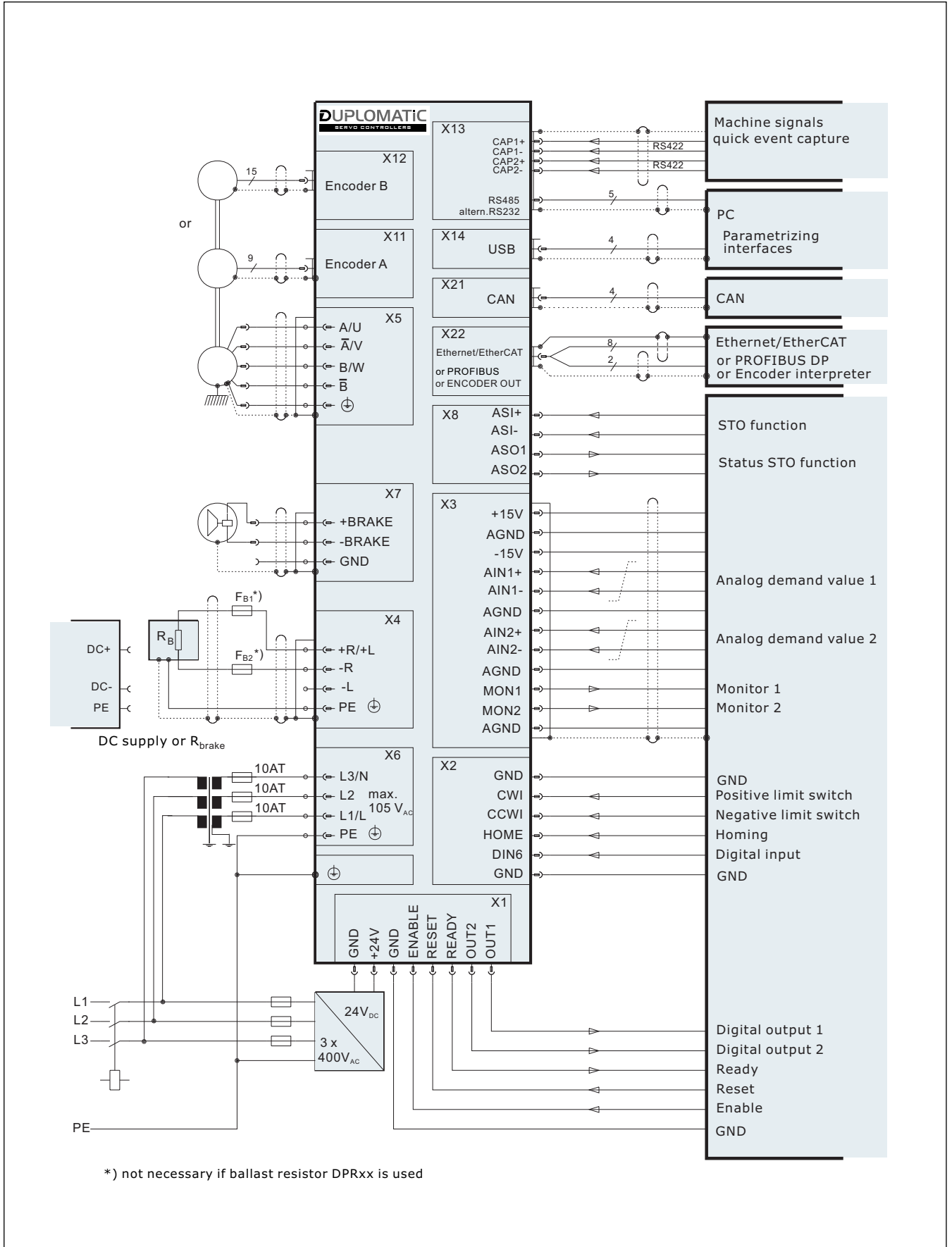
## 3 - WIRING DIAGRAM

### 3.1 - SINGLE AXIS WIRING DIAGRAM

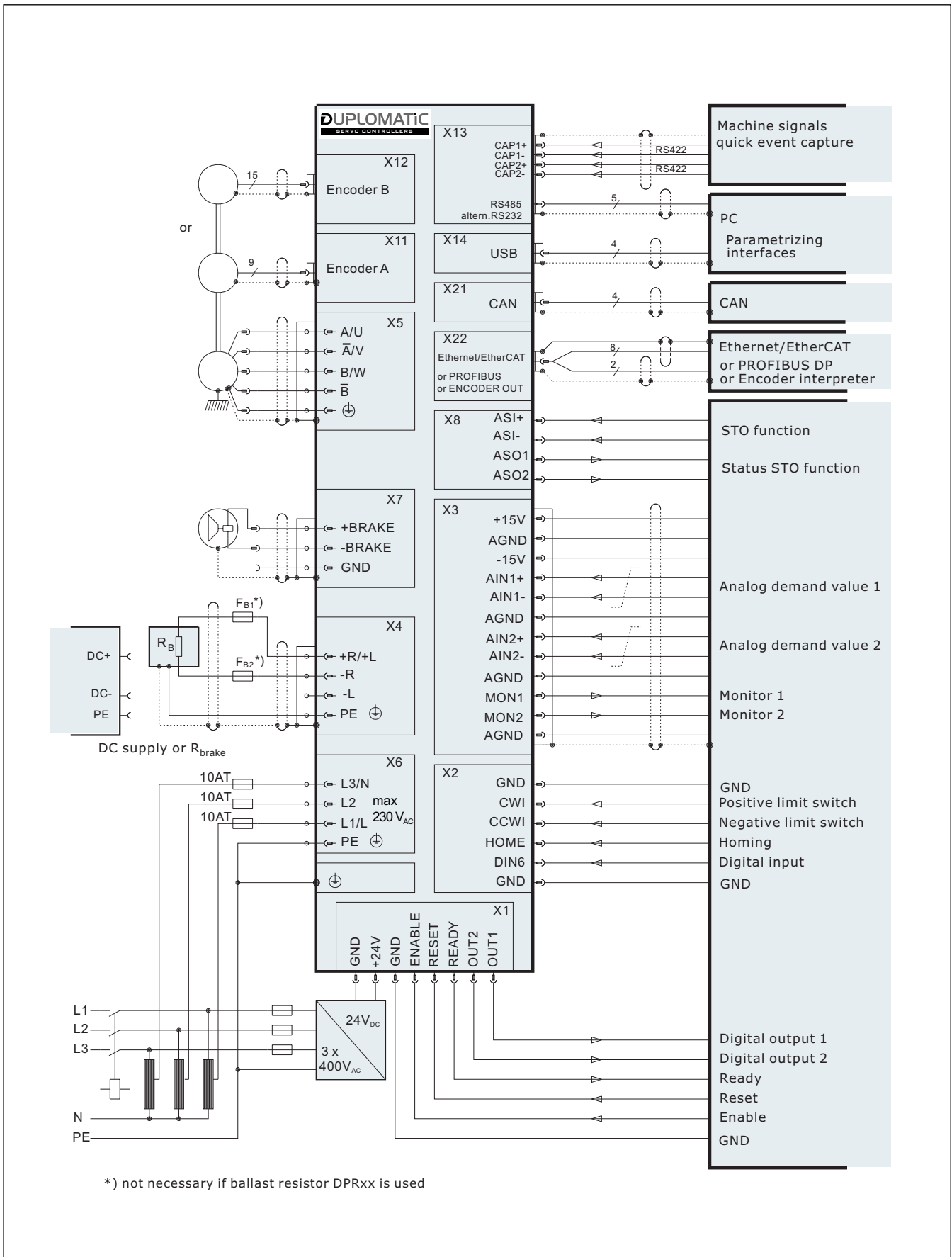
#### 3.1.1 - WIRING DIAGRAM SCJ14



**3.1.2 - WIRING DIAGRAM SCJ33**



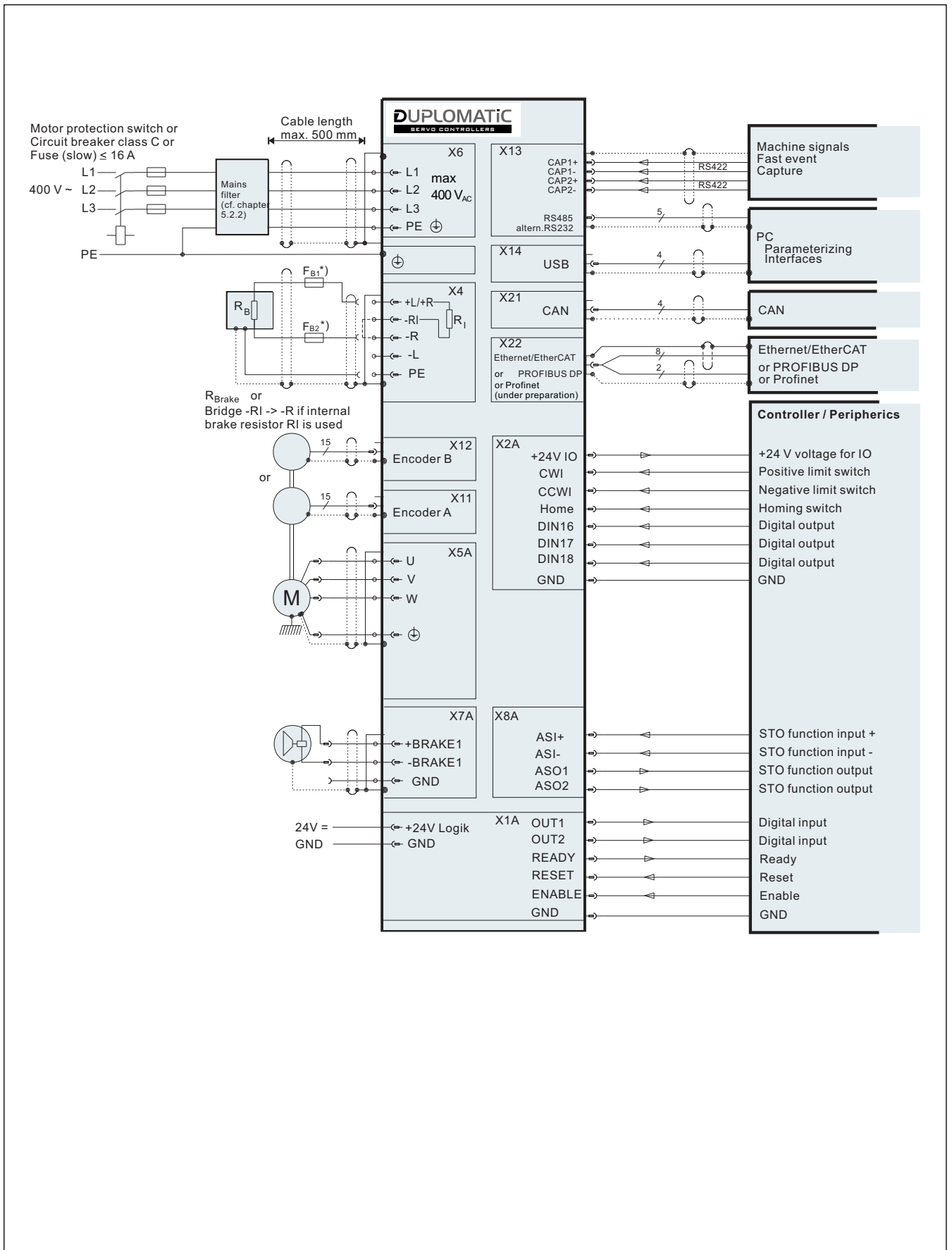
### 3.1.3 - WIRING DIAGRAM SCJ71



\*) not necessary if ballast resistor DPRxx is used

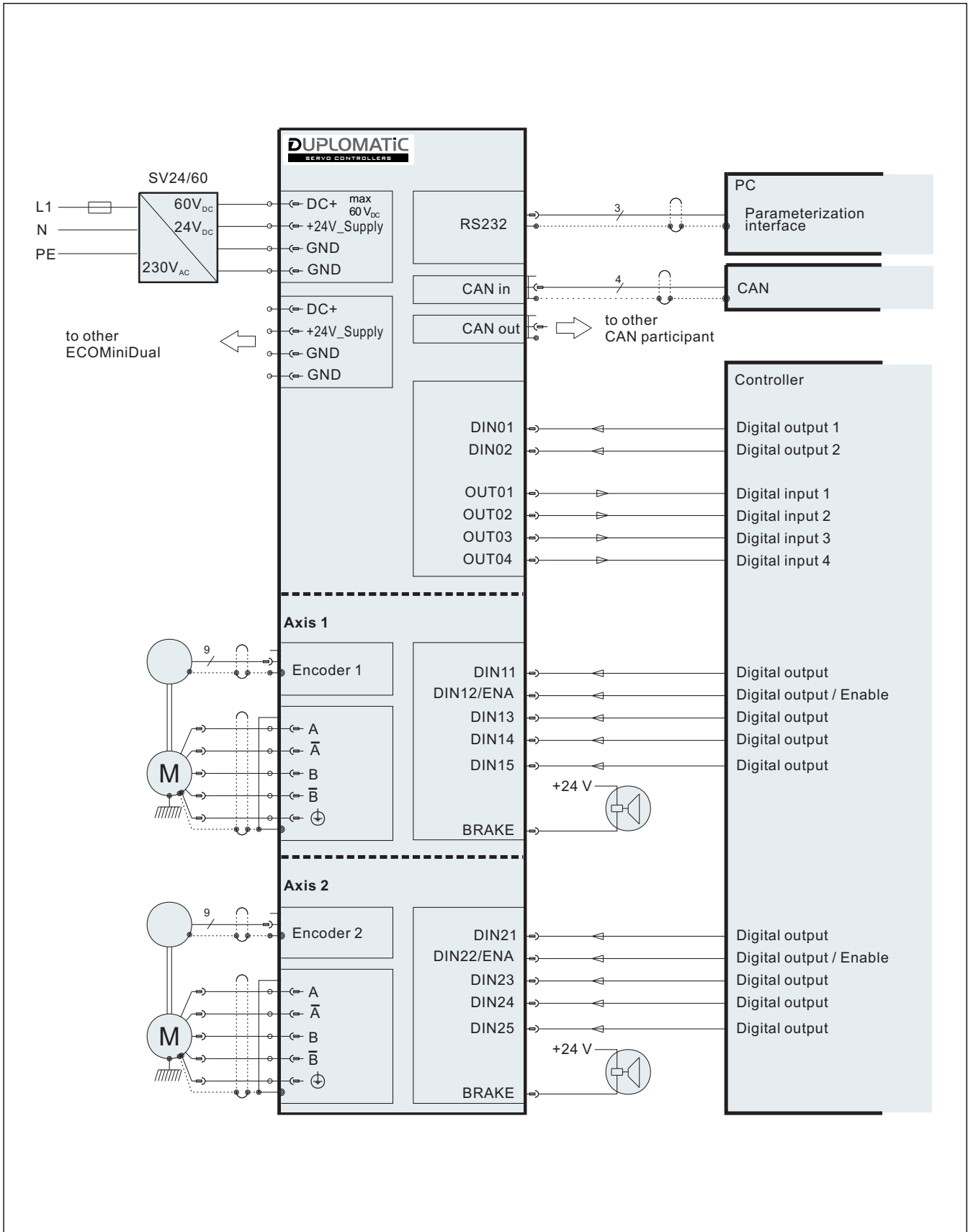


**3.1.4 - WIRING DIAGRAM SCJ100**

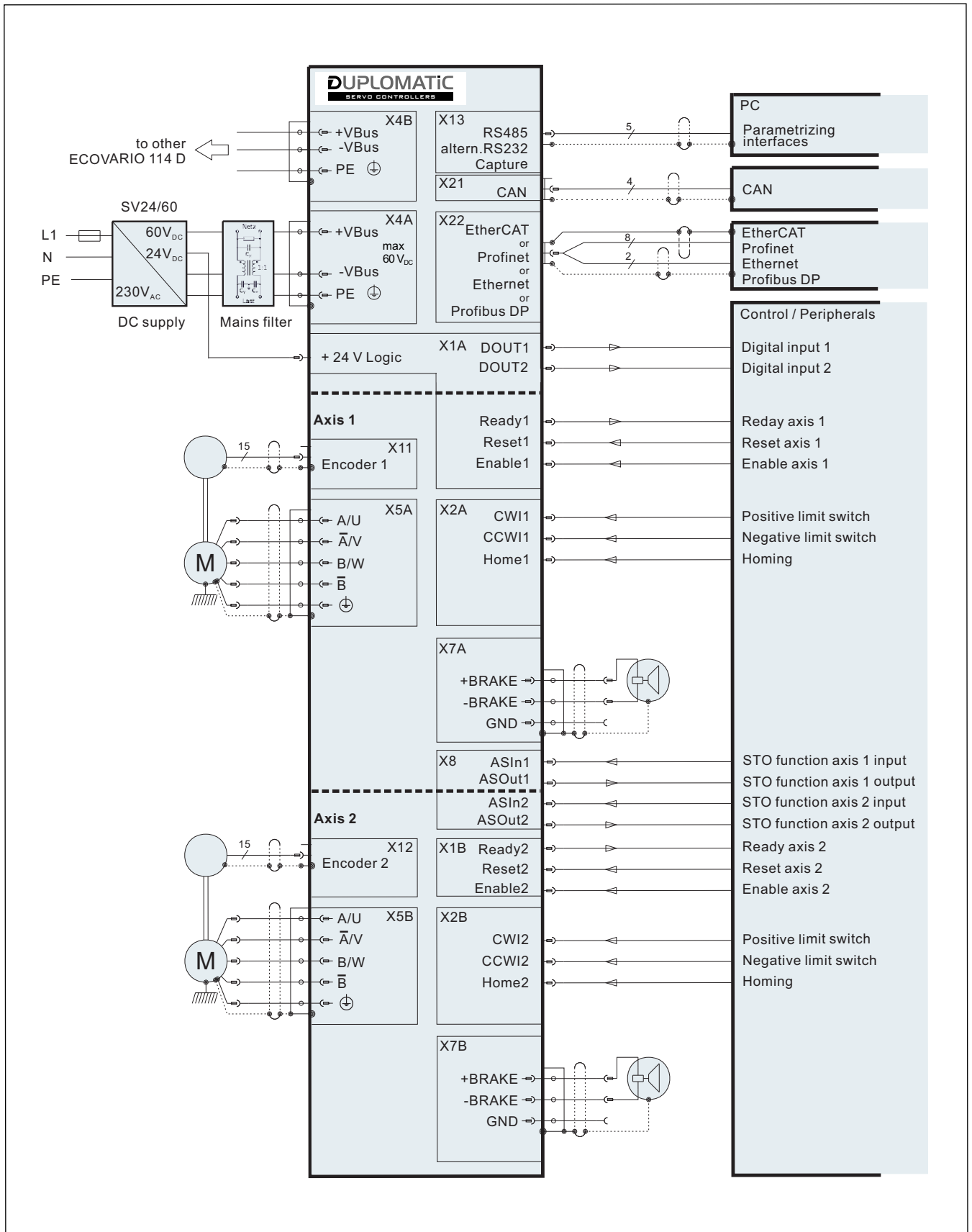


**3.2 - DOUBLE AXES WIRING DIAGRAMS**

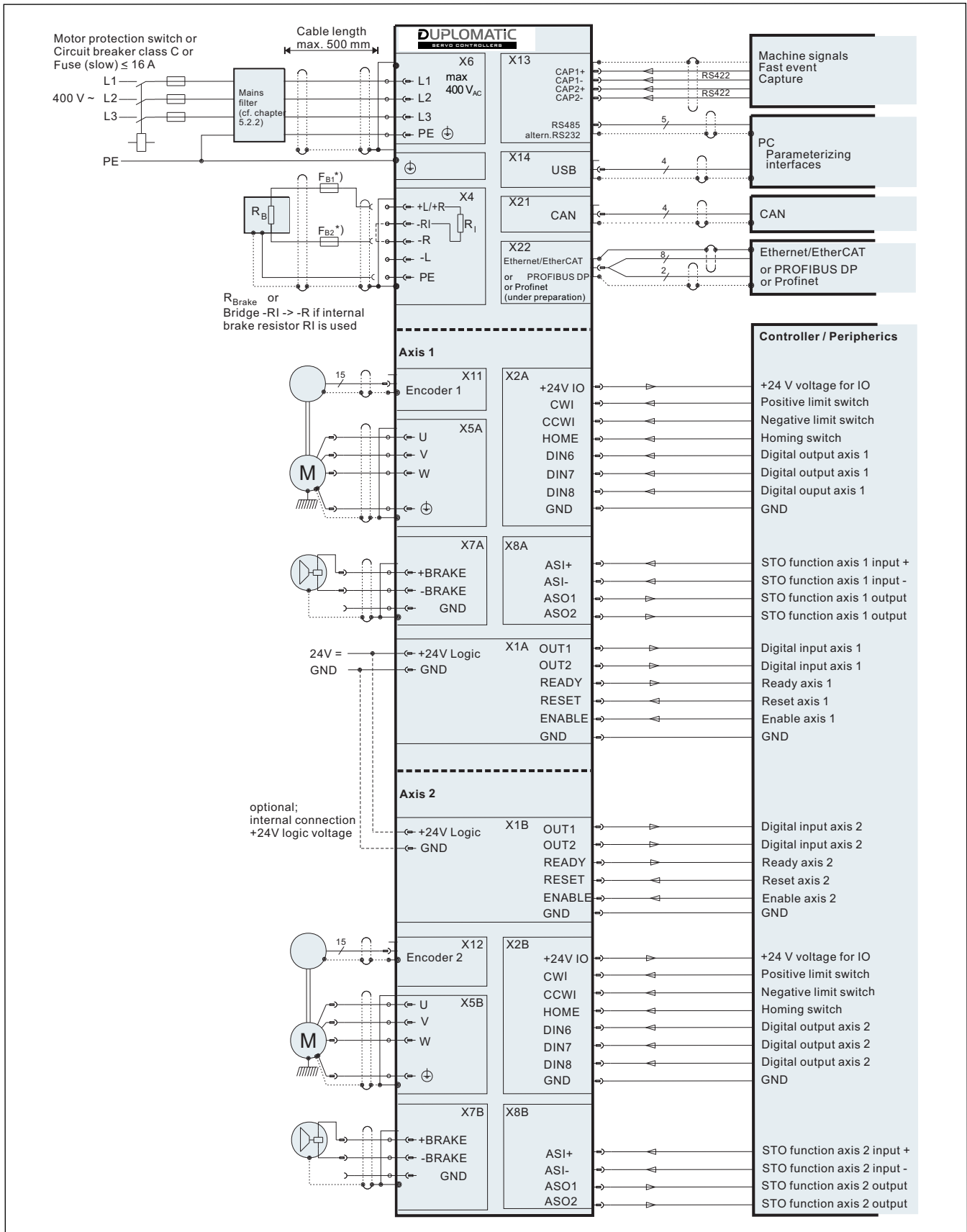
**3.2.1 - WIRING DIAGRAM SCJ2\*04**



3.2.2 - WIRING DIAGRAM SCJ2\*14



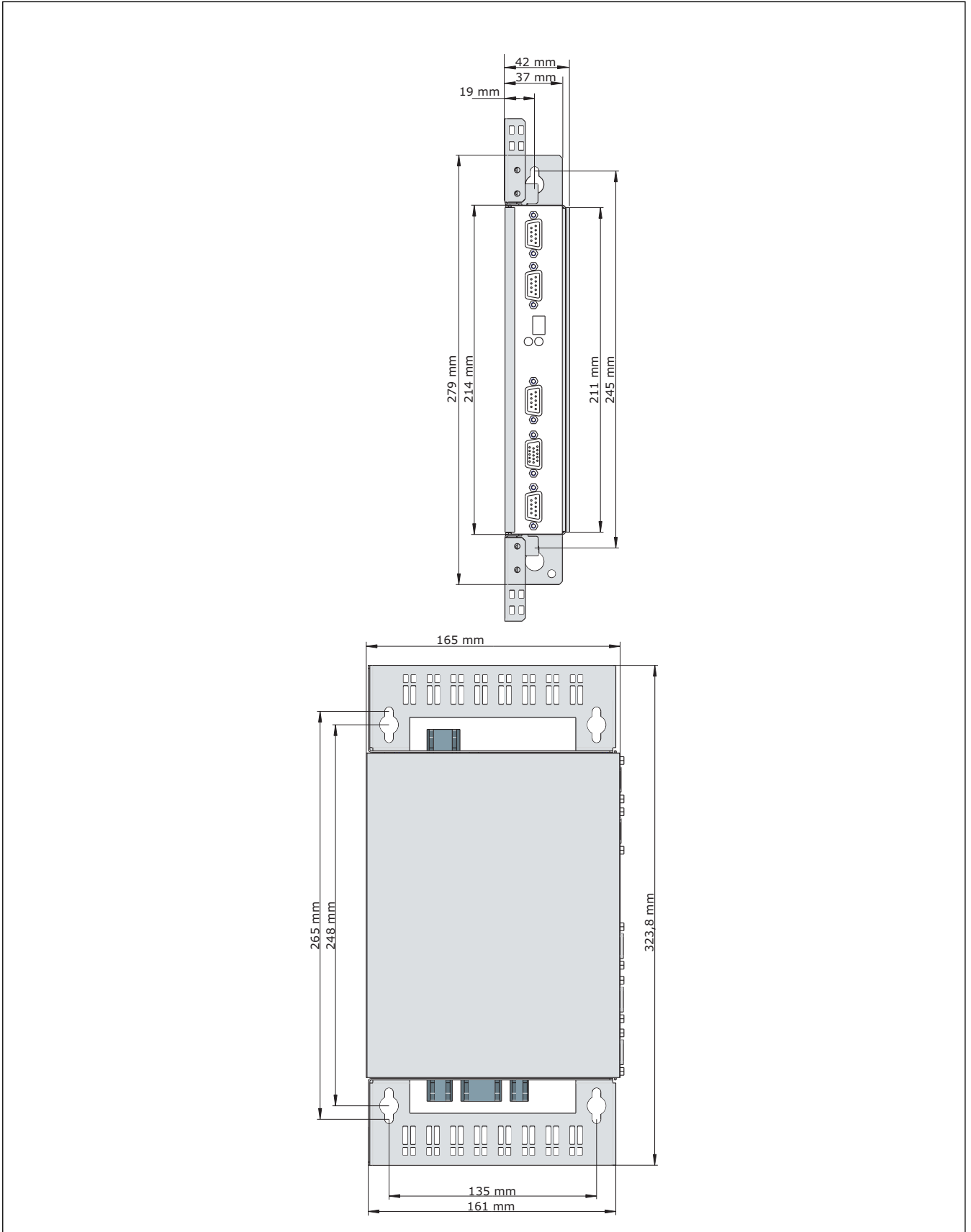
### 3.2.3 - WIRING DIAGRAM SCJ2\*100



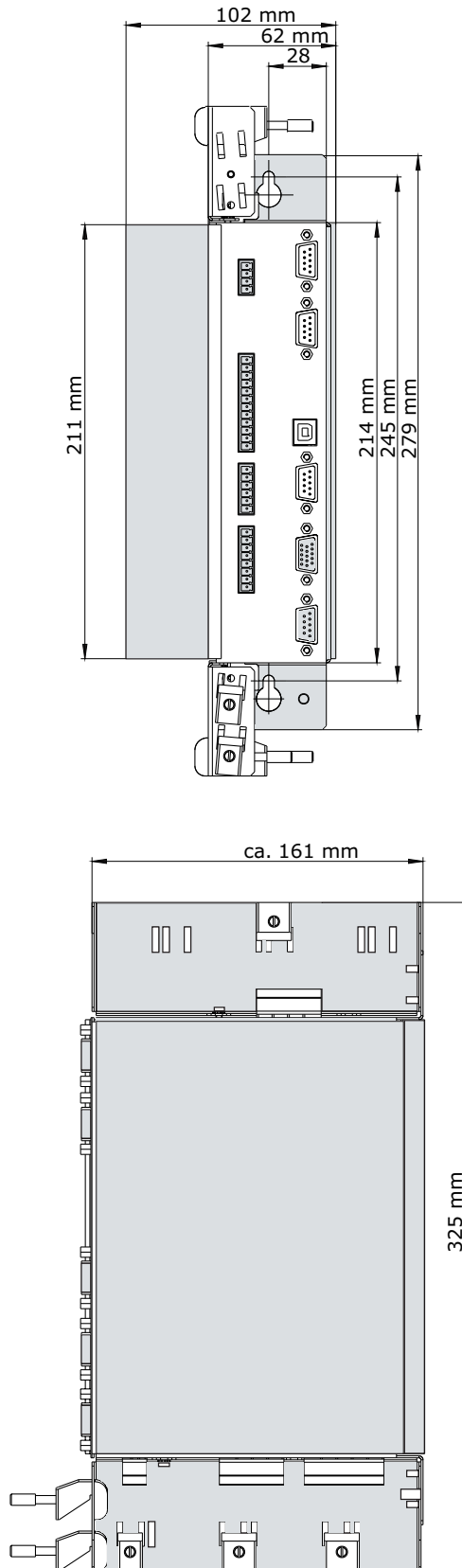
**4 - OVERALL AND MOUNTING DIMENSIONS**

**4.1 - SINGLE AXIS OVERALL DIMENSIONS**

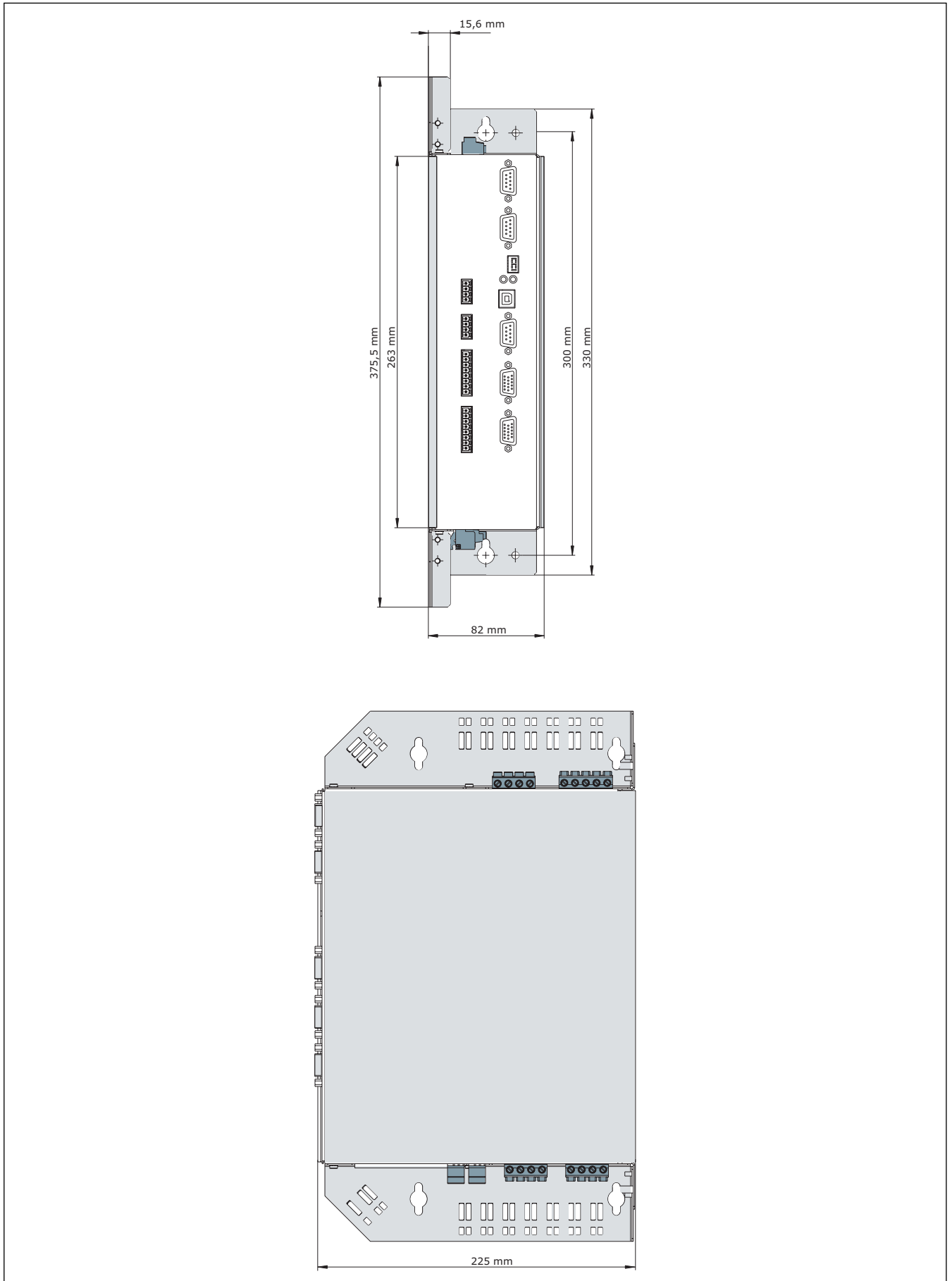
**4.1.1 - OVERALL DIMENSIONS SCJ14**



4.1.2 - OVERALL DIMENSIONS SCJ33 and SCJ71

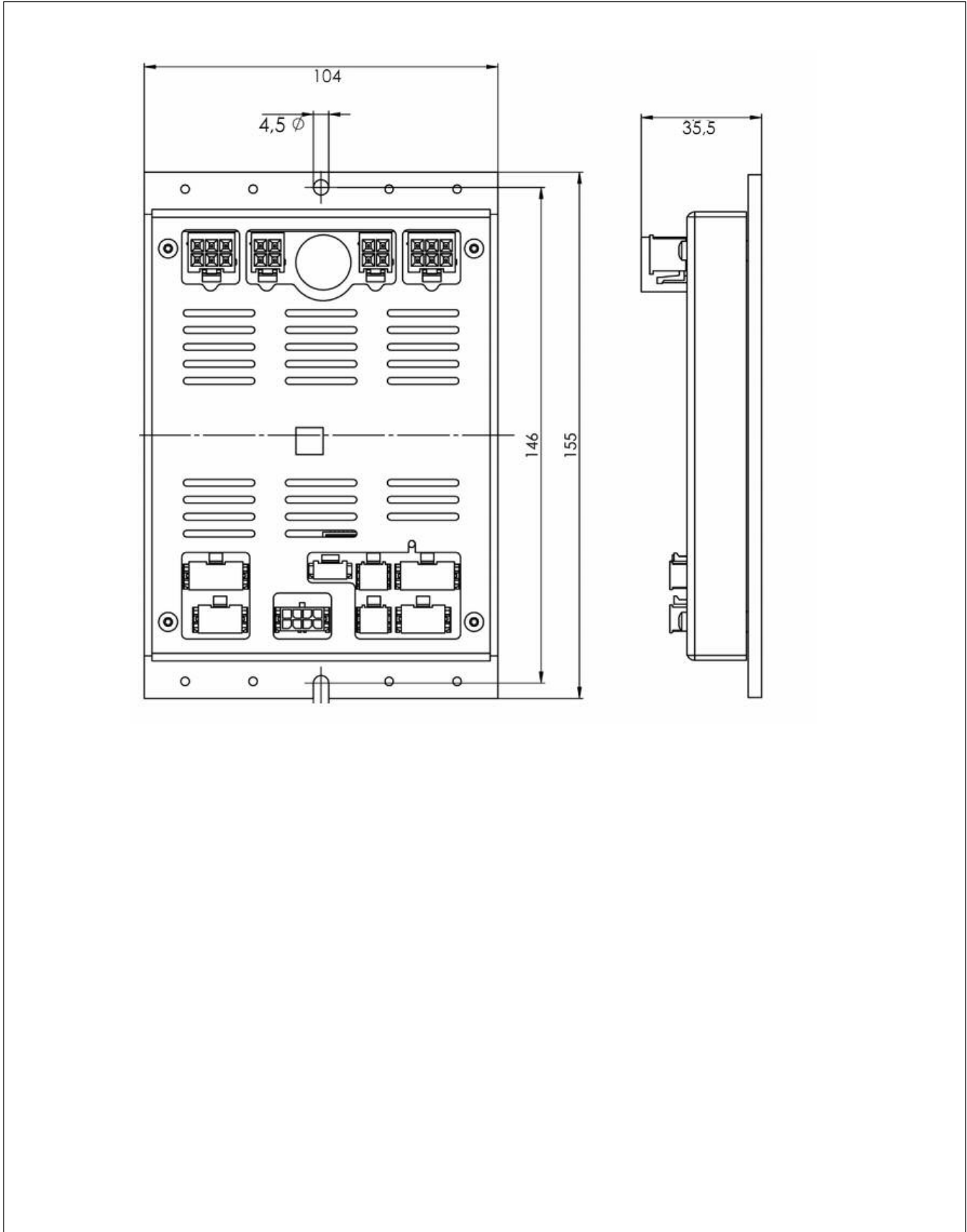


**4.1.3 - OVERALL DIMENSIONS SCJ100**



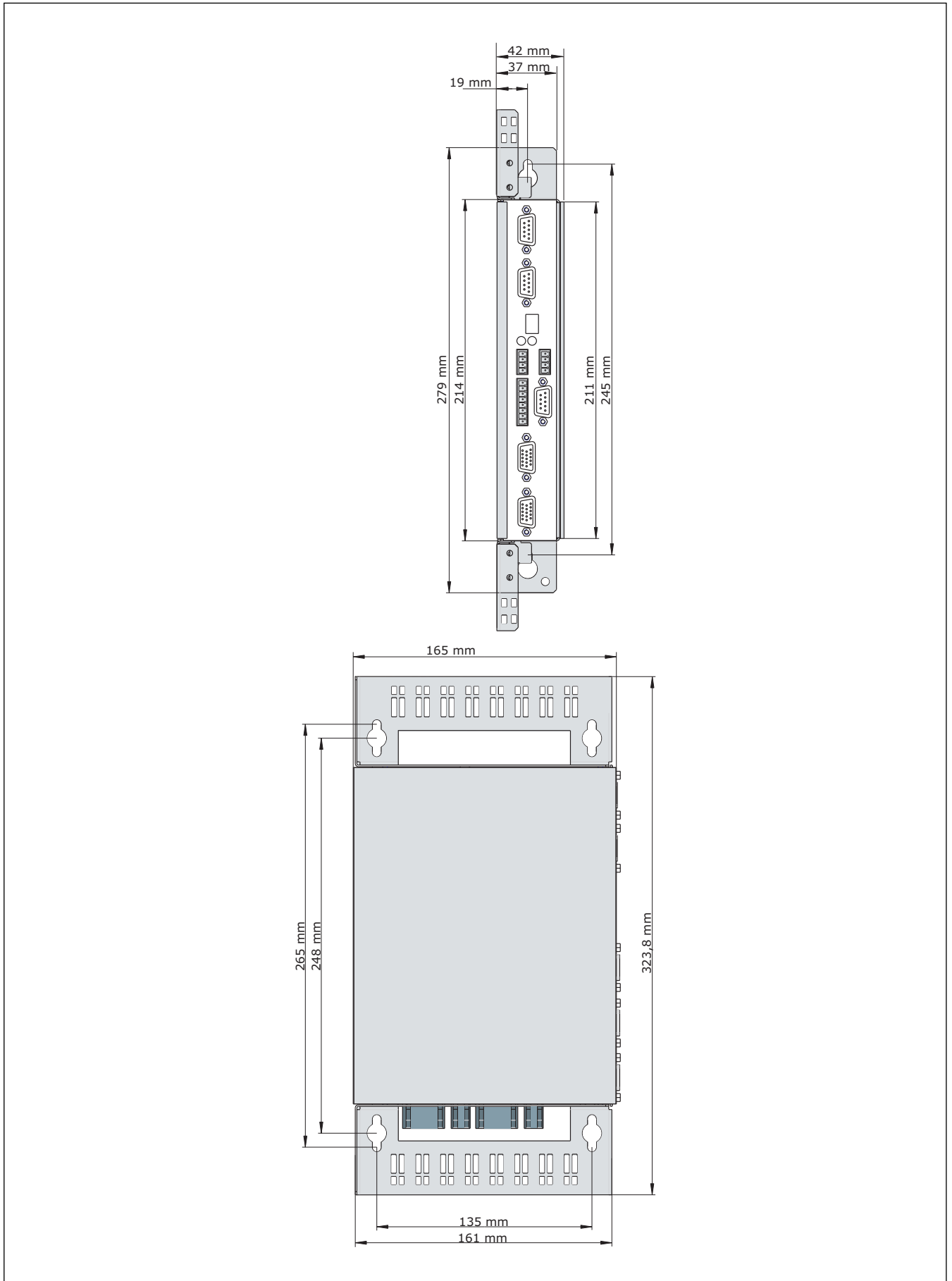
**4.2 - DOUBLE AXIS OVERALL DIMENSIONS**

**4.2.1 - OVERALL DIMENSIONS SCJ2\*04**

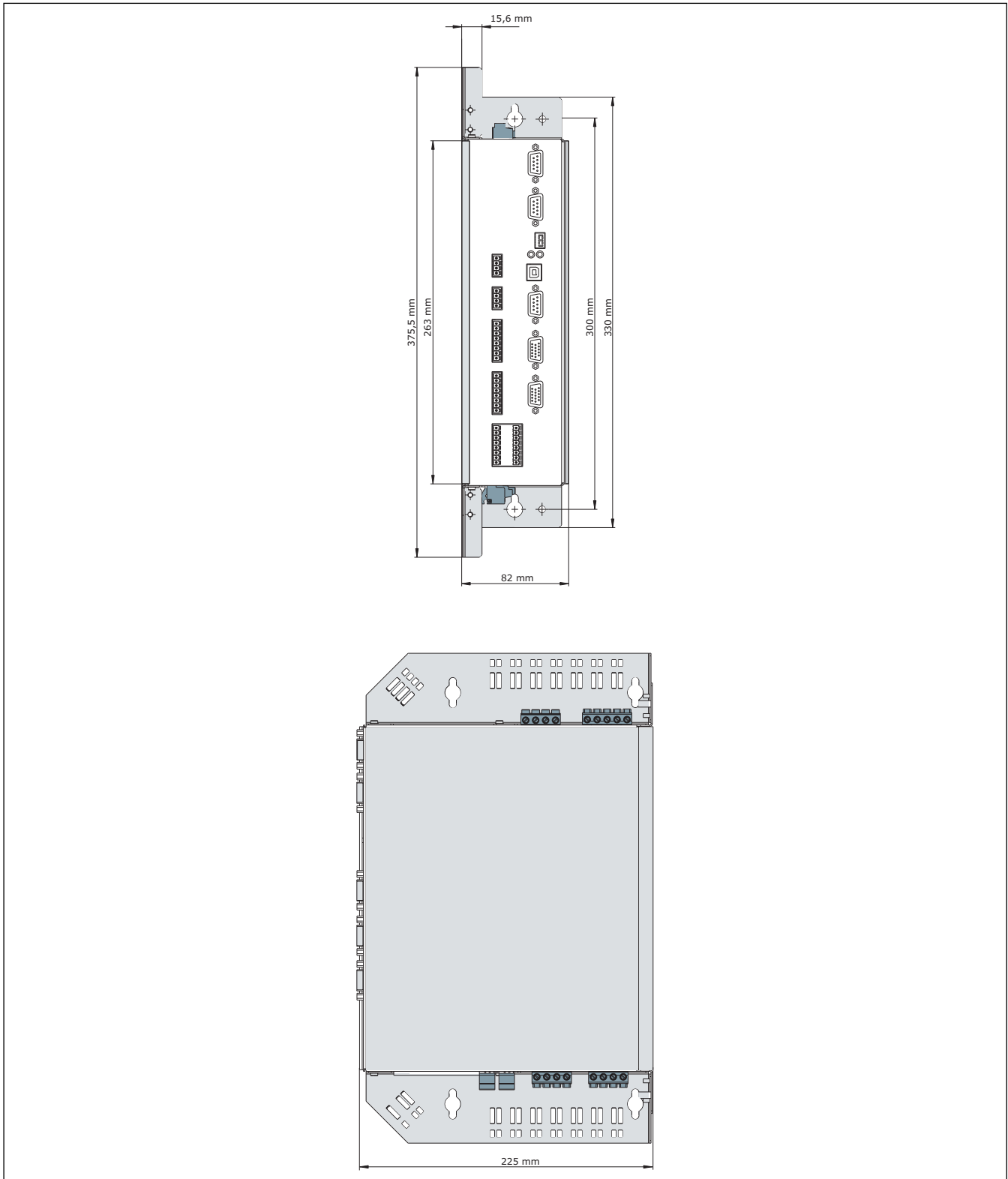




4.2.2 - OVERALL DIMENSIONS SCJ2\*14



**4.2.3 - OVERALL DIMENSIONS SCJ2\*100**



**DIPLOMATIC**  
SERVO CONTROLLERS

**DIPLOMATIC OLEODINAMICA S.p.A.**  
20015 PARABIAGO (MI) • Via M. Re Depaolini 24  
Tel. +39 0331.895.111  
Fax +39 0331.895.339  
www.diplomatic.com • e-mail: sales.exp@diplomatic.com

