

POWER SUPPLY

nominal 160 Vdc
range from 65 to 180 Vdc
(ONLY DC VOLTAGE)

CONTROL SUPPLY

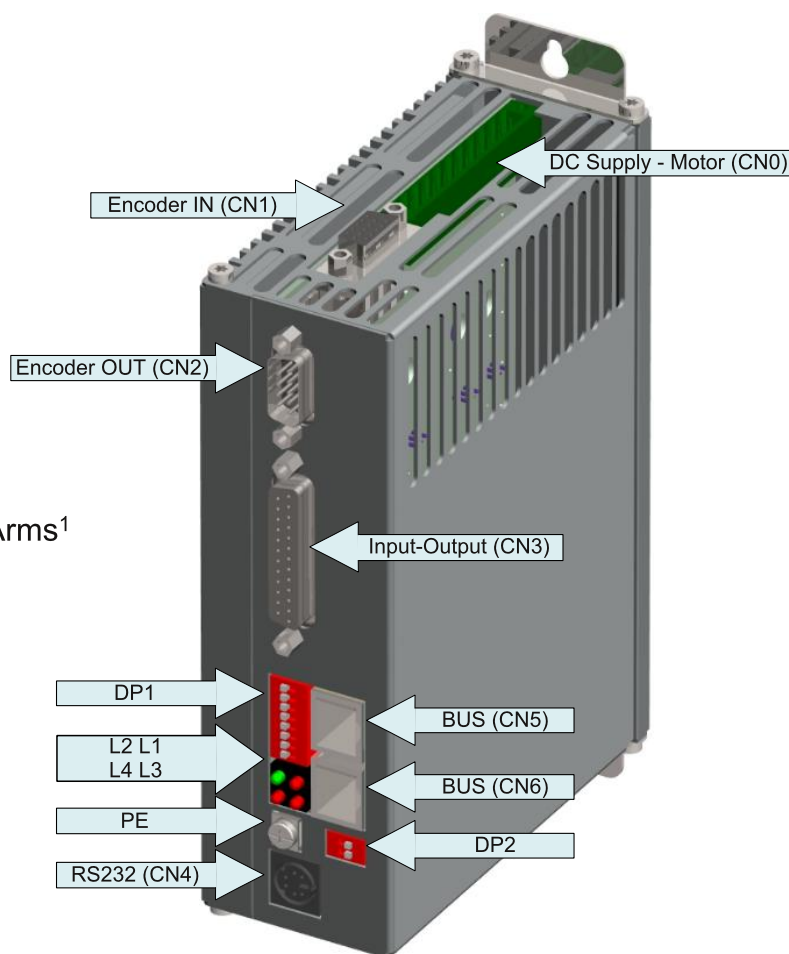
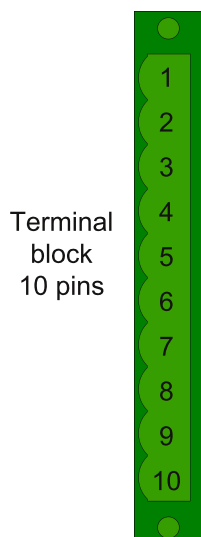
nominal 24 Vdc
range from 20 to 180 Vdc

MOTOR CURRENT OUTPUT

Maximum rated motor current output: 8.5 Arms¹
Peak motor current output: 12 Arms

CONNECTORS:

CN0 → DC Supply + Motor
CN1 → Encoder Input
CN2 → Encoder Output
CN3 → Digital Input/Output
CN4 → RS232 serial port (for debug and configuration)
CN5 → CAN BUS
CN6 → CAN BUS

**CN0: DC supply + Motor**

CN0 Pin	Signal	Description
1	+VLOG	DC Logic Supply
2	+VPOW	DC Power Supply
3	GND	GND Power/Logic Supply
4	PE	Protection Earth
5	SHIELD	Supply Shield
6	PE/SHIELD	Protection Earth and Shield
7	A	Motor Phase A
8	A-	Motor Phase A-
9	B	Motor Phase B
10	B-	Motor Phase B-

NOTE:**Motor cable maximum length**

The maximum admitted length of the motor cable is 20 m.
For longer cables 4 coils shall be inserted in series with the 4 phases (A, A-, B, B-).
Minimum coils recommended value 250µH - 5 Arms.

The coils insertion may slightly reduce the motor performances.

¹ This value, usually, requires an external ventilation. Without ventilation and 40°C of environment, rated motor current output is about 4Arms.

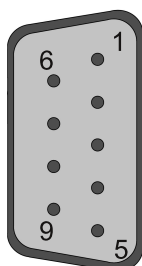
CN1: Encoder Input



D-SUB, 15 pins
Female

CN1 Pin	Signal	Description
1	FB +	Incremental encoder input FB +
2	FA -	Incremental encoder input FA -
3	FA +	Incremental encoder input FA +
4	GND ENC	Encoder ground
5	+5Vout	Encoder power supply (+5 Vout)
6	FB -	Incremental encoder input FB -
7	T1	Motor thermal sensor ²
8	T2	Motor thermal sensor ²
9	NC	Not connected
10	DATAIN-	Absolute encoder input DATAIN -
11	TZ +	Incremental encoder input TZ +
12	TZ -	Incremental encoder input TZ -
13	CLKOUT +	Absolute encoder output CLKOUT +
14	CLKOUT -	Absolute encoder output CLKOUT -
15	DATAIN +	Absolute encoder input DATAIN +
Chassis	PE	Protection Earth (shield)

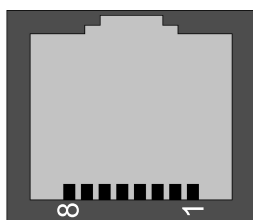
CN2: Encoder Output



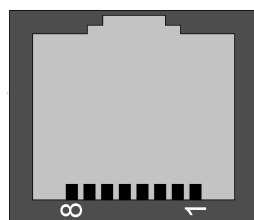
D-SUB, 9 pins
Male

CN2 Pin	Signal	Description
1	TZ +	Incremental encoder output TZ +
2	FA -	Incremental encoder input FA -
3	NC	Not connected
4	GND ENC	Encoder ground
5	FB -	Incremental encoder output FB -
6	FB +	Incremental encoder input FB +
7	FA +	Incremental encoder input FA +
8	TZ -	Incremental encoder input TZ -
9	NC	Not connected
Chassis	PE	Protection Earth (shield)

CN5-CN6: CAN bus



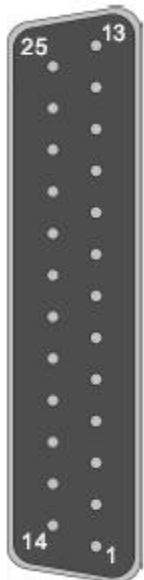
CN5
RJ45



CN6
RJ45

CN5,6 Pin	Signal	Description
1	BUS-H	CAN High
2	BUS-L	CAN Low
3	GND_COM	CAN Ground
4	NC	Not connected
5	NC	Not connected
6	NC	Not connected
7	GND_COM	CAN Ground
8	NC	Not connected
Chassis	PE	Protection earth (shield)

CN3: Input/output



D-SUB, 25 pins
Female

CN3 Pin	Signal	Description
1	+24V	24 V Supply (for Output)
2	OUT0	Digital Output 0
3	OUT2	Digital Output 2
4	OUT4	Digital Output 4
5	IN3	Digital Input 3
6	IN5	Digital Input 5
7	IN7	Digital Input 7
8	NC	Not connected
9	IN0 -	Differential Digital Input 0- [only for 24 V input]
10	IN1 -	Differential Digital Input 1- [only for 24 V input]
11	IN1 +	Differential Digital Input 1+
12	NC	Not connected
13	AN_IN -	Analog Input (-)
14	GND_24V	Ground of 24 V Supply (for Input and Output)
15	OUT1	Digital Output 1
16	OUT3	Digital Output 3
17	IN2	Digital Input 2
18	IN4	Digital Input 4
19	IN6	Digital Input 6
20	IN8	Digital Input 8
21	IN0 -	Differential Digital Input 0- [only for Line driver/+5V input]
22	IN0 +	Differential Digital Input 0+
23	IN1 -	Differential Digital Input 1- [only for Line driver/+5V input]
24	NC	Not connected
25	AN_IN +	Analog Input (+)
Chassis	PE	Protection Earth

CN4: RS232 serial port



Mini-DIN, Female

CN4 Pin	Signal	Description
1	NC	Not connected
2	TX232	TX RS232
3	GND_COM	Ground RS232
4	NC	Not connected
5	NC	Not connected
6	RX232	RX RS232
Chassis	PE	Protection Earth (shield)

INPUT/OUTPUT FEATURES:

- 1 analog input: from -10 V to +10 V (not optoisolated)
- 7 optoisolated PNP digital inputs (24 Vdc)
- 2 differential (+24 V or +5 V/Line driver) digital inputs (used as general purpose, master encoder or step-dir input).
- 5 optoisolated PNP digital outputs (4 out up to 200 mA + 1 out up to 1,4 A)

The inputs are protected against reverse polarity.

The power supply for the digital output section (24 Vdc) must be provided from outside through pin 1 (+24 Vdc) and 14 (Ground of 24 Vdc).

The outputs are protected against short circuit, over temperature and reverse

24 V PNP DIGITAL INPUTS CHARACTERISTICS	
Inputs n°	9
Galvanic Isolation	Yes, through optoisolators
In2, In3, In4, In5, In6, In7, In8	
Input Type	PNP
Input Voltage	• Rated: +24 Vdc • LOW signal (physical status 0): -30 ÷ +5 Vdc • HIGH signal (physical status 1): +16 ÷ +30 Vdc
Input Current (typical) with Vin = 24 Vdc	4,8 mA
In0 and In1	
Input Type	PNP, NPN, differential, push-pull
Input Voltage (24 V)	• Rated: +24 Vdc • LOW signal (physical status 0): -30 ÷ +5 Vdc • HIGH signal (physical status 1): +16 ÷ +30 Vdc
Input Current (typical) with Vin = 24 Vdc	9,2 mA
Input Voltage (Line Driver / +5 V)	• LOW signal (physical status 0): ≤ 1,4 Vdc • HIGH signal (physical status 1): +3 ÷ +5 Vdc
Input Current (typical) with Vin = 4 Vdc	14 mA

DIGITAL OUTPUTS CHARACTERISTICS	
Out0, Out1, Out2, Out3, Out4	
Outputs n°	5
Galvanic Isolation	Yes, through optoisolators
Output Type	PNP
Output power supply	24 V ± 20%
Rated output current	• 200 mA (Out1, Out2, Out3, Out4) • 1,4 A (Out0)

IMPORTANT:

For further information see the manual.

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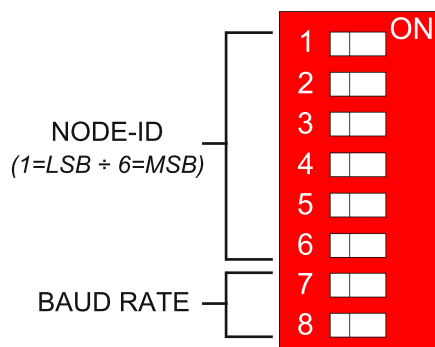
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No other guarantee is therefore provided by the production company, in particular with regard to any imperfections, incompleteness or operating difficulties.

DIP SWITCH:

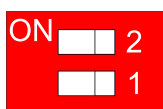
DP1 → CAN Configuration: NODE-ID [switch 1÷6] and BAUD RATE [switch 7-8]



DP1: BAUD RATE [bit/s]	Switch 7	Switch 8
1000000	OFF	OFF
800000*	ON	OFF
500000	OFF	ON
250000	ON	ON

* The maximum cable length at 800kbit/s is at least 50% more than bus at 1000kbit/s.

DP2 → CAN Termination



DP2: CAN Termination	Switch 1	Switch 2
Termination not inserted	OFF	OFF
Configuration not allowed	ON	OFF
Configuration not allowed	OFF	ON
Termination inserted	ON	ON

LED:

L1 L2 → BUS status

L3 L4 → Drive status (fault, warning, OK)

Description: (CAN warning - fault)	LED 1 Green
Bus OFF	ON
Warning limit reached	1 flash
Life guard error	2 flash
Sync error	3 flash
NO error	OFF

Description: (CAN status)	LED 2 Red
Operational	ON
Pre-operational	blinking
Stopped	1 flash

Description: (Drive fault)	LED 4 Red	LED 3 Red
Over Voltage	blinking	ON
Over Temperature Power section	1 flash	ON
Under Voltage	3 flash	ON
Short Circuit	ON	ON
Parameters error	1 flash	blinking
Mode error (interpolated position)	2 flash	blinking
Communication error	3 flash	blinking
Eeprom failure	ON	blinking
Over Current	blinking	1 flash
Axis Error	1 flash	1 flash
Position following error	2 flash	1 flash
Hardware failure (temperature sensor)	3 flash	1 flash
User alarm	blinking	2 flash
Absolute encoder error	ON	3 flash

Description: (Drive status)	LED 4 Red	LED 3 Red
Status OK, Drive disabled	blinking	OFF
Status OK, Drive enabled	ON	OFF