

Very compact analog servodrive 60 - 145 - 205 - 250 Vdc power supply range for Brush servomotors. Driving motor ranges up to 20 Nm, tacho generator, encoder or armature feedback.

Dc One XL

SERVO AMPLIFIER FOR BRUSH DC MOTORS

The **Dc One XL** is a precision four quadrant regenerative servo drive for permanent dc Brush servomotors.

Possible control methods include velocity and torque modes. There are many different velocity modes: tachogenerator feedback, encoder feedback, armature feedback and PWM+DIR comand.

The **Dc One XL** series drives push high performance servo technology into lower power applications without compromising on reliability or package size.

► Dc One XL advantage

- Compact drive for 6KW (20Nm) motors
- Small package, versatility, ease-of-use, cost-effective
- Feedback for motors with encoder, tachogenerator Armature



► Standard characteristic

- Four quadrant regenerative operation
- Single supply DC voltage
- 4 diagnostic Leds (State and Alarms)
- Protections for: Over/Under voltage, max. temperature reaches, Over current, Ixt motor current
- Power and signals extractable connectors
- 1 Differential velocity input +/-10V
- 1 Torque mode (demand current) input +/-10V
- Feedback available (series): Quadrature encoder - tachogenerator - Armature
- NPN Fault drive output
- Five Potentiometer adjustments (Speed, offset, gain, derivative, acceleration/deceleration ramp)

► Specifications

• Output voltage	0,9 Vdc Input
• PWM frequency	20Khz
• Operative temperature	0/+40°C
• Analog inputs range	+/-10Vdc
• Current monitor	+/- 8Vdc (At pk curr.)
• Velocity monitor	+/- 8Vdc (At max.vel.)
• Encoder power supply (+V)	+5Vdc @130 mA
• Auxiliary power supply	+5Vdc @4mA
• Maximum encoder frequency	+/-10Vdc @4mA
• Logic level encoder inputs	300Khz
• Start signal (Input range)	\geq +2,8V/+24V
• Current loop bandwidth	+9V/+30Vdc
• Velocity loop bandwidth	2Khz
	150Hz

MODEL	DC ONE XL 65	DC ONE XL 145	DC ONE XL 205	DC ONE XL 305
DC Voltage Supply (Vdc)	65	145	205	250
DC Voltage Range (Vdc)	19 - 84	39 - 184	54 - 276	60 - 320
Size (A)	2/4	4/8	7/14	10/20
Rated Current (A)	2	4	7	10
Peak Current (1) (A)	4	8	14	20

Order code example:

DC1L - 205 - 30 - T - RD - N - X - ord. 901/13

Product name Model Size (A)

Feedback:
Tacho generator= T
Encoder= E
Armature= A

Control mode:
RD= Differential vel.
PD= Pwm+Dir⁽⁴⁾
AD= Pwm+Dir⁽⁵⁾

Customer order

Brake function:
X= Disabled
B= Enabled

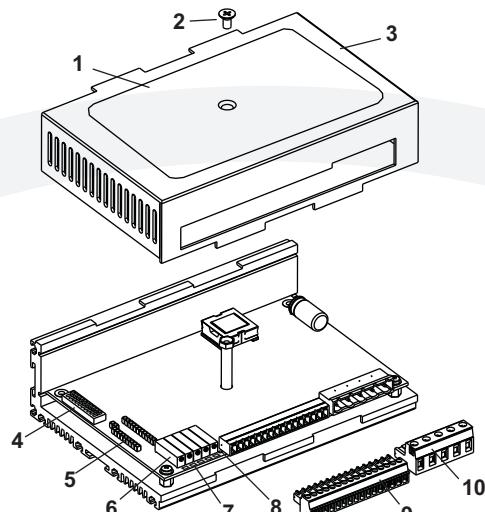
Label example:

**DC1L-205-30-T-RD-N-X
ord. 901/13**

(1) Peak current (Adc) for 2 sec. (2) Power of amplifier at the rated current and rated voltage (3) Power of amplifier at the peak current and rated voltage (4) PWM+DIR comand with open loop (5) PWM+DIR comand with close loop and armature feedback.

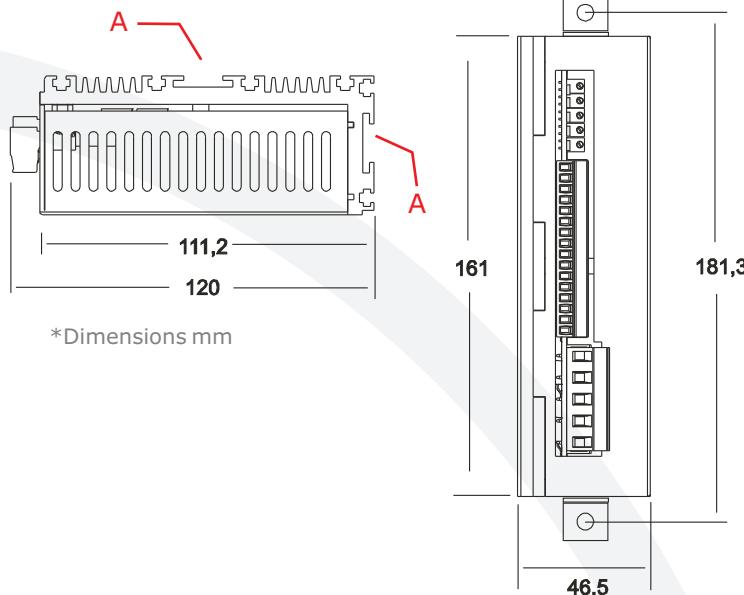
(*) Model 205/305 size 20/40 and size30/60A forced cooling required

► View product



- (1) Product Label
- (2) Fixing screw
- (3) Product Cover
- (4) Solder bridges
- (5) Adjustment zone
- (6) Calibration Potentiometers
- (7) Leds
- (8) Test (velocity monitor)
- (9) M1 Signals terminal 16 pins MC1,5/16-ST-3,81 (pitch 3,81)
- (10) Power Terminal 5 pins GMST 2,5/5-G-7,62 (pitch 7,62)

Mechanical dimensions



[Datasheet Dc One XL (gb) - 2 of 2]

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► Typical connection

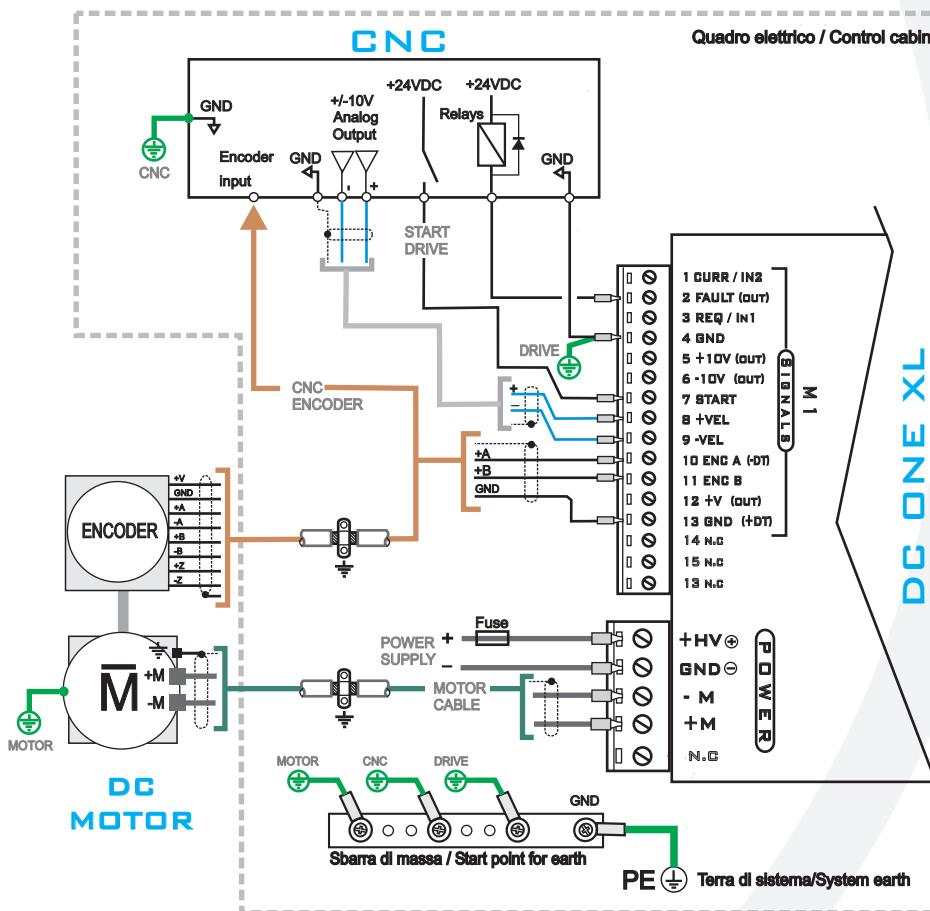
In the figure above is shown a typical connection of the **Dc One XL** in combination with a dc brush motor with encoder feedback.

The encoder with line driver output is connected directly to the control. Depart from the CNC control wires +A +B and GND to the drive (signals in common mode).

Excellent dynamic performance is obtained with encoder with resolution from 500 to 2000PPR.

It is also possible to supply the encoder with the voltage available on the +5V of the drive (+V terminal 12), verifying that the absorption of the encoder does not exceed 130mA.

For all other information see the **Dc One XL** service manual.



Accessories: • Switching power supply 220-400Vac/55Vdc • Single/3ph transformers from 100 to 7000VA • Single/3ph bridges 600V 35A
• Power supply capacitors 4700uF / 10000uF • Net filters (for CE compliance)