MICROPHASE
Technology & Performance

# Servodrive up to 1 KW

**Very compact analog servodrive 60 - 110 Vdc power supply range for Brush servomotors. Driving motor ranges up to 3 Nm, tacho generator, encoder or armature feedback.**

# Micro Dc

## SERVO AMPLIFIER FOR BRUSH DC MOTORS


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

## Micro Dc advantage

- **Compact drive for 1KW (3Nm) motors**
- **Small package, versatility, ease-of-use, cost-effective**
- **Feedback for motors with:**
  - *** Encoder**
  - *** Tachogenerator**
  - *** Armature**

CE

RoHS compliant

## 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
- Four Potentiometer adjustements (Speed, offset, gain, derivative)
- Acceleration/deceleration ramp
- Brake motor function

## Specifications

| | |
|---|---|
| • Output voltage | 0,9 Vdc Input |
| • PWM frequency | 20Khz |
| • Operative temperature | 0/+40°C |
| • Analog inputs range | +/-10Vdc |
| • Current monitor | +/- 8Vdc (At peak curr.) |
| • Velocity monitor | +/- 8Vdc (At max.vel.) |
| • Encoder power supply (+V) | +5Vdc @130 mA |
| • Ausiliary power supply | +/-10Vdc @ 3mA |
| • Maximum encoder frequency | 300Khz |
| • Logic level encoder inputs | ≥ +2,8V/+24V |
| • Start signal (Input range) | +9V/+30Vdc |
| • Current loop bandwidth | 2KHz |
| • Velocity loop bandwidth | 150Hz |
| • Polution degree | 2° or better |

| MODEL | | MICRO DC 65 | MICRO DC 110 |
|---|---|---|---|
| DC Voltage Supply | (Vdc) | 65 | 100 |
| DC Voltage Range | (Vdc) | 19 - 84 | 30 - 132 |

**Size available for each model:**

| 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:**

**MDC - 65 - 10 - T - RD - N - X - ord. 901/13**

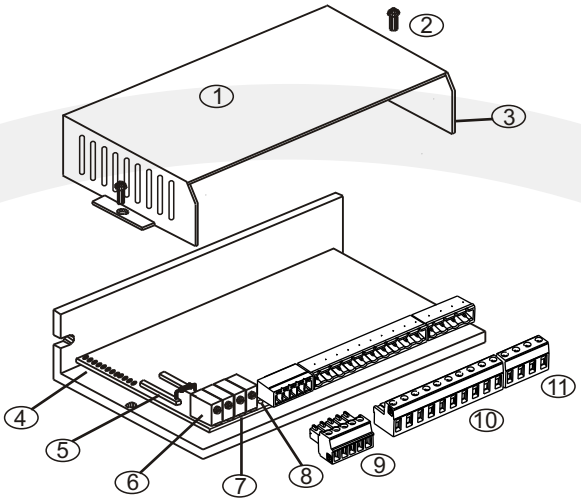
- Product name: MDC
- Model: 65
- Size (A): 10
- Feedback: Tacho generator= T, Encoder= E, Armature= A
- Control mode: RD= Differential vel., PD= Pwm+Dir (4), AD= Pwm+Dir (5)
- Limit Switch: N= Disabled, L= Enabled
- Brake function: X= Disabled, B= Enabled
- Customer order: ord. 901/13

Label example:

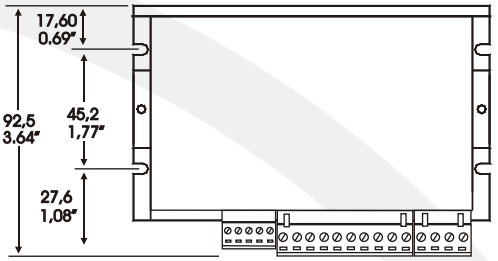
MDC-65-10-T-RD-N-X
ord. 901/13

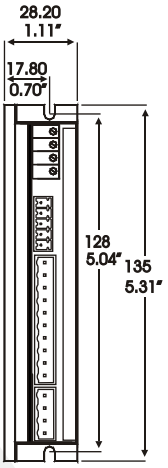
(1) Peak current (Adc) for 2 sec. (2) Power of amplifier at the rated current and rated voltage (3) Power of amplifier at the peak current and rated voltage
*(4) PWM+DIR comand with open loop (5) PWM+DIR comand w ith close loop and armature feedback. (*) Model 130 size 10/20 forced cooling requi red*

## View product




### Mechanical dimensions




Dimensions mm - inch

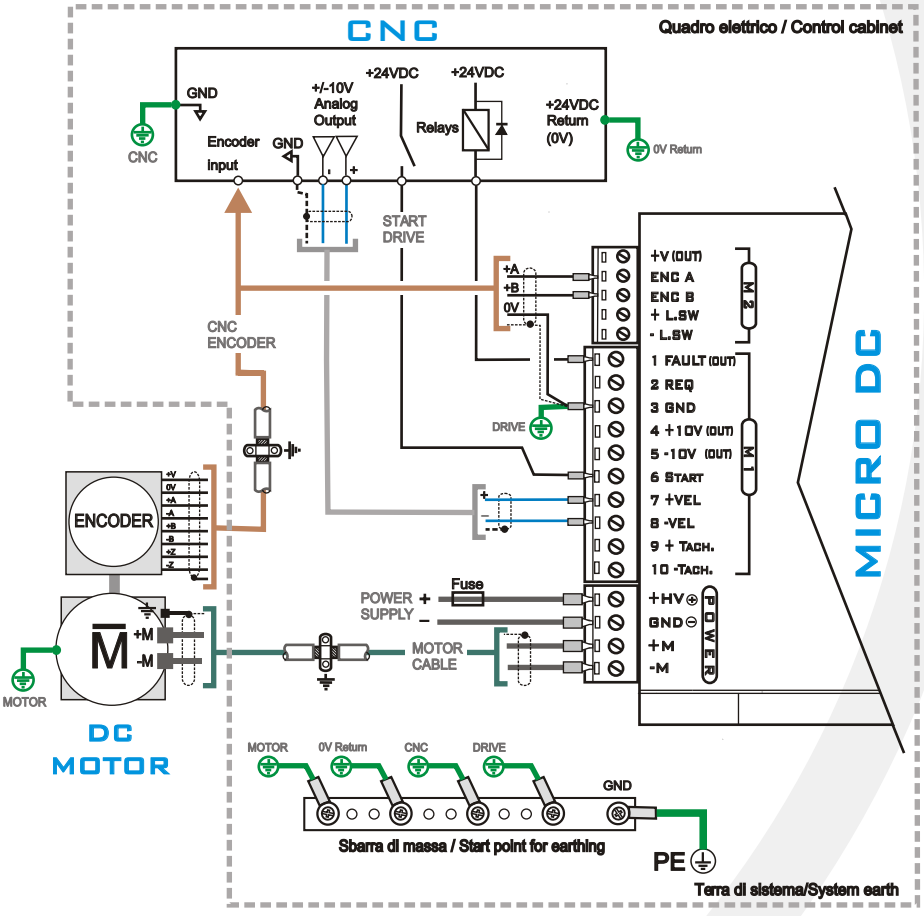
* Weight 0,37 kg

(1) Product Label
(2) Fixing screw
(3) Product Cover
(4) Solder bridges
(5) Adjustement zone
(6) Calibration Potentiometers
(7) Leds
(8) Test (velocity monitor)
(9) M2 Signals terminal 5 pins MC1,5/5-ST-3,81 (pitch 3,81)
(10) M1 Signals terminal 10 pins GMST 2.5/10-G-5,08 (pitch 5,08)
(11) Power Terminal 4 pins GMST 2.5/4-G-5,08 (pitch 5,08)

## Typical connection

The following diagram shown a typical connection of the Micro Dc in combination with a brush motor.
The encoder with line driver output is connected directly to the control. Depart from the CNC control wires +A +B and GND to the Micro Dc drive (signals in common mode).

It 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 additional information see the Micro Dc 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)





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