

# Direct drive stepper motors

→ 7.5° 5 Watts

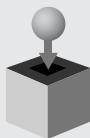
- 48 steps/revolution (7.5°)
- Absorbed power : 5 W
- 2 or 4 phase versions available



## Specifications

	4 phase	4 phase	4 phase
Type	82 910 0	82 910 0	82 910 0
Electronic controller used	Unipolar	Unipolar	Unipolar
<b>Bearings</b>			
Sintered bronze	-	82910003	-
Plastic	-	-	-
<b>General characteristics</b>			
Electronic controller used	Unipolar	Unipolar	Unipolar
Resistance per phase (Ω)	15.5	66	115
Inductance per phase (mH)	8	28	55
Current per phase (A)	0.4	0.19	0.14
Holding torque (mN.m)	20	20	20
Voltage at motor terminals (V)	6.2	12.7	17
Absorbed power (W)	5	5	5
Step angle (°)	7.5	7.5	7.5
Positioning accuracy (mm)	5	5	5
Inertia of rotor (gcm <sup>2</sup> )	4.9	4.9	4.9
Max. detent torque (mN.m)	3	3	3
Max. coil temperature (°C)	120	120	120
Storage temperature (°C)	-40 → +80	-40 → +80	-40 → +80
Thermal resistance of coil - ambient air (°C/W)	14	14	14
Insulation resistance (at 500 Vcc) (MΩ) following NFC 51200 standard	> 10 <sup>3</sup>	> 10 <sup>3</sup>	> 10 <sup>3</sup>
Insulation voltage (50 Hz, 1 minute) (V) following NFC 51200 standard	> 600	> 600	> 600
Wires length (mm)	250	250	250
Weight (g)	90	90	90
Protection rating	IP 40	IP 40	IP40

## Products adaptations, available on request



- Special output shafts
- Pinion on output shaft
- Special supply voltages
- Special lead lengths
- Special output bearings
- Customized electronics
- Special construction materials
- Special connectors

Products and specifications subject to change without notice.

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## Curves

Inertia of measuring chain : 1.5 g.cm<sup>2</sup>

a = constant voltage controller with  $R_s$  (resistance in series) = 0

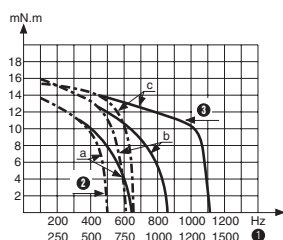
b = constant voltage controller with  $R_s$  (resistance in series) =  $R_{\text{motor}}$

c = constant voltage controller with  $R_s$  (resistance in series) =  $2R_{\text{motor}}$

d = constant voltage controller with  $R_s$  (resistance in series) =  $3R_{\text{motor}}$

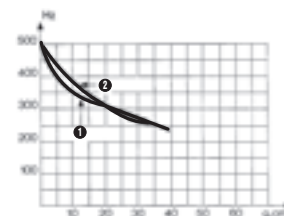
The measurements are made with full stepping, 2-phases energized.

4 phases



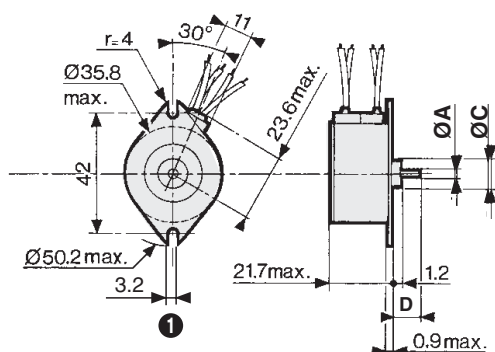
- 1 RPM
- 2 Max. stopping-starting curves
- 3 Max. operating curves

Max. stopping-starting frequency curves as a function of the external inertia load at zero antagonistic torque



- 1 2 phases
- 2 4 phases

## Dimensions

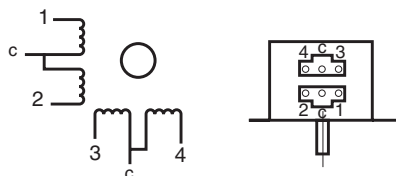


- 1 2 fixing holes Ø 3.2

Shaft Type	Ø shaft - A	Ø center - C	Length shaft - D
Type 1	2 -0.002 -0.006	9 -0.010 -0.060	9
Type 2	2 -0.002 -0.006	10 -0.010 -0.060	9
Type 3	3.17 <sup>0</sup> -0.006	9.52 -0.010 -0.060	9

## Connections

4 phase



Energization sequence for clockwise rotation : 2 phases energized (viewed from shaft end, front forward)

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