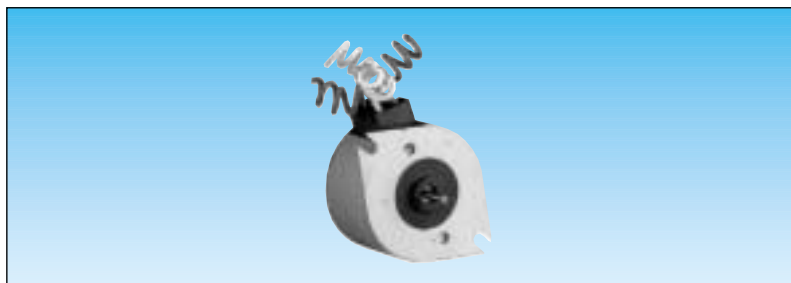


Permanent magnet stepper motors 48 steps/revolution (7°5) - Ø 35 mm



Part numbers

82 910 3 / 82 910 001 • • • RS 440-262 •

Characteristics

		2	2	2	4	4	4
Number of phases		2	2	2	4	4	4
Absorbed power	W	5	5	5	5	5	5
Electronic controller used	Bipolar Unipolar	• —	• —	• —	— •	— •	— •
Resistance per phase	Ω	9	12.9	66	15.5	66	115
Inductance per phase	mH	12	15	68	8	28	55
Current per phase	A	0.52	0.44	0.19	0.4	0.19	0.14
Holding torque	mN.m	25	25	25	20	20	20
Voltage at motor terminals	V	4.7	5.6	12.7	6.2	12.7	17
Step angle	°	7.5	7.5	7.5	7.5	7.5	7.5
Positioning accuracy	%	5	5	5	5	5	5
Inertia of rotor	gcm ²	4.9	4.9	4.9	4.9	4.9	4.9
Max. detent torque	mN.m	3	3	3	3	3	3
Max. coil temperature	°C	120	120	120	120	120	120
Storage temperature	°C	- 40 + 80	- 40 + 80	- 40 + 80	- 40 + 80	- 40 + 80	- 40 + 80
Thermal resistance of coil - ambient air	°C/W	14	14	14	14	14	14
Insulation resistance (at 500V DC) (1)	MΩ	> 10 ³	> 10 ³	> 10 ³	> 10 ³	> 10 ³	> 10 ³
Insulation voltage (50 Hz, 1 minute) (1)	V	> 600	> 600	> 600	> 600	> 600	> 600
Standard length of leads	mm	250	250	250	250	250	250
Weight	g	90	90	90	90	90	90
Protection		IP 40	IP 40	IP 40	IP 40	IP 40	IP 40

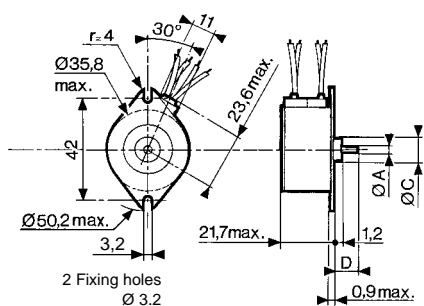
(1) Following NFC 51200 standard

Motor shaft

See the dimensions and specify the version (for other versions please consult us).

Unless an alternate shaft is specified, the motor will be supplied with the type 1 shaft.

Dimensions



Shaft type	Ø shaft - A	Ø centre - 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 ⁰ _{-0.006}	9.52 ^{-0.010} _{-0.060}	9

Connections

2 phases

Energisation sequence for clockwise rotation: (viewed from shaft end)

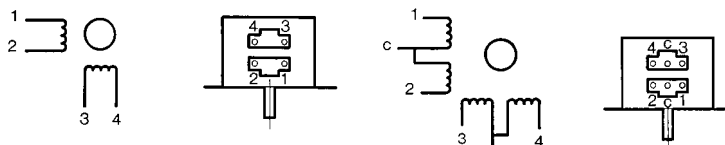
	1	2	3	4
STEP 1	-	+	-	+
STEP 2	-	+	+	-
STEP 3	+	-	+	-
STEP 4	+	-	-	+
STEP 5	-	+	-	+

4 phases

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

	1	2	3	4
STEP 1	-	-	-	-
STEP 2	-	-	-	-
STEP 3	-	-	-	-
STEP 4	-	-	-	-
STEP 5	-	-	-	-

Commons connected to positive.



Other information

For basic principles, see page 3/4
82 910 0 Motor with sintered bronze bearings
82 910 3 Motor with plastic bearings

Other versions are possible to special order in reasonable quantities :
- special coil
- special shaft possible with rear output
- special lead length

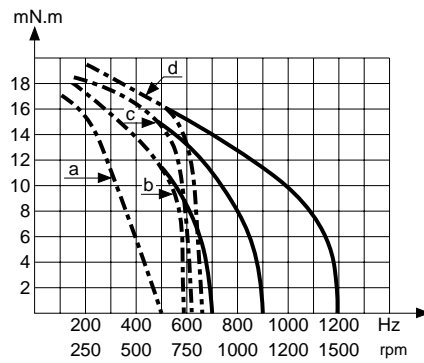
Curves

Max. stopping-starting curves -----
 Max. operating curves —————

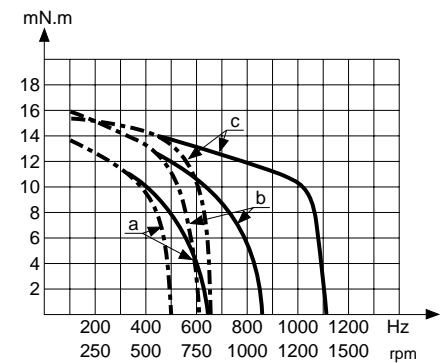
Inertia of measuring chain : 1.5 g.cm²

a= constant voltage controller with R_s (resistance in series) = 0
 b = constant voltage controller with R_s (resistance in series) = R motor
 c = constant voltage controller with R_s (resistance in series) = 2R motor
 d = constant voltage controller with R_s (resistance in series) = 3R motor

2 phases



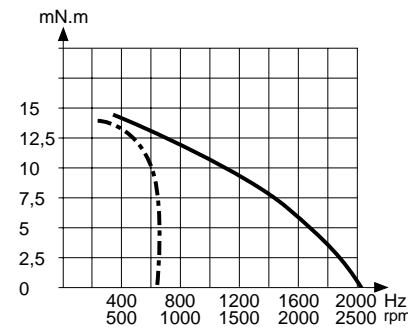
4 phases



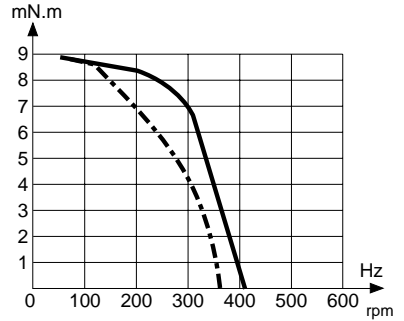
The measurements are made with full stepping, 2 phases energised.

Max. stopping-starting and operating curves at I constant (PBL 3717) for 2 (motor) phases 12.9 ohms.

2 phases

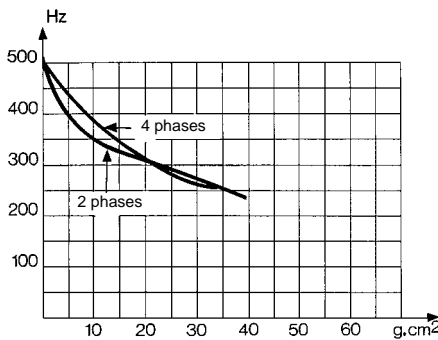


4 phases - 115 Ω - Constant voltage - Curve produced with card 84 854 405 (see p.3/21)



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

N.B.
 Measurement conditions :
 T_{amb} = 25° C, motor cold



To order, specify :

Standard products, non stocked

1

Part number

2

Motor shaft

Example: Permanent magnet stepper motor 82 910 001 type 1

Made to order products available on request