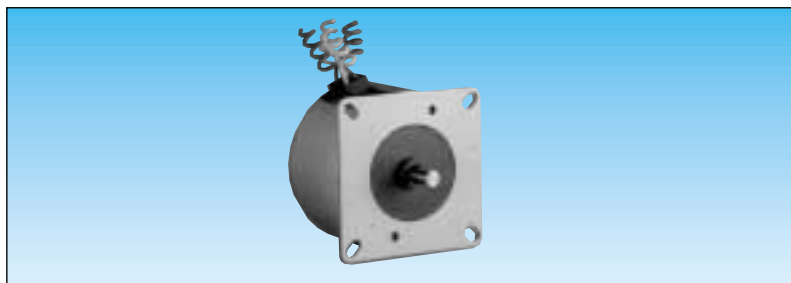


# Permanent magnet stepper motors 48 steps/revolution (7°5) - Ø 65 mm



## Part numbers

● 82 940 002 82 940 015 RS 440-307

## Characteristics

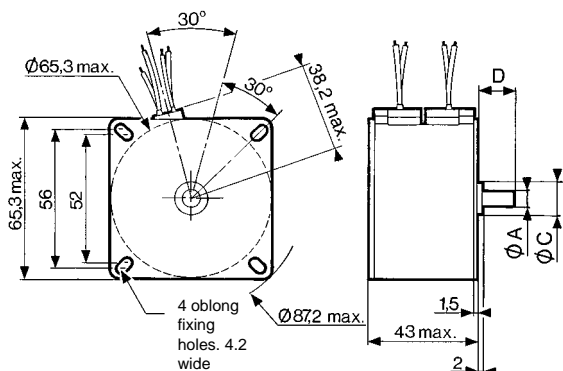
			2	2	4	4
<b>Number of phases</b>			2	2	4	4
Absorbed power	W		12.5	12.5	12.5	12.5
Electronic controller used	Bipolar Unipolar		● —	● —	— ●	— ●
<b>Resistance per phase</b>	Ω		5.2	26.7	7.4	26.7
Inductance per phase	mH		16	93	11	40
Current per phase	A		1.1	0.48	0.9	0.48
Holding torque	mN.m		300	300	240	240
Voltage at motor terminals	V		5.7	12.7	6.7	12.7
Step angle	°		7.5	7.5	7.5	7.5
Positioning accuracy	%		5	5	5	5
Inertia of rotor	gcm <sup>2</sup>		180	180	180	180
Max. detent torque	mN.m		16	16	16	16
Max. coil temperature	°C		120	120	120	120
Storage temperature	°C		- 40 + 80	- 40 + 80	- 40 + 80	- 40 + 80
Thermal resistance of coil - ambient air	°C/W		5.6	5.6	5.6	5.6
Insulation resistance (at 500V DC) (1)	MΩ		> 10 <sup>3</sup>	> 10 <sup>3</sup>	> 10 <sup>3</sup>	> 10 <sup>3</sup>
Insulation voltage (50 Hz, 1 minute) (1)	V		> 600	> 600	> 600	> 600
Standard length of leads	mm		250	250	250	250
Weight	g		540	540	540	540
Protection			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).

## Dimensions



Shaft type	Ø shaft - A	Ø centre - C	Length shaft - D
Type 1	6 <sup>0</sup> <sub>-0.008</sub>	12 <sup>0</sup> <sub>-0.05</sub>	15
Type 2	6.35 <sup>0</sup> <sub>-0.01</sub>	12.7 <sup>0</sup> <sub>-0.05</sub>	15
Type 3	6.35 <sup>0</sup> <sub>-0.01</sub>	14 <sup>0</sup> <sub>-0.05</sub>	15

## Connections

### 2 phases

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

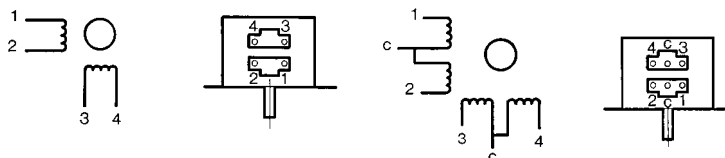
	1	2	3	4
STEP 1	1	+	-	+
STEP 2	-	+	+	-
STEP 3	+	-	+	-
STEP 4	+	-	-	+
STEP 5	-	+	-	+

### 4 phases

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

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

Commons connected to positive.



## Other information

For basic principles, see page 3/4

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

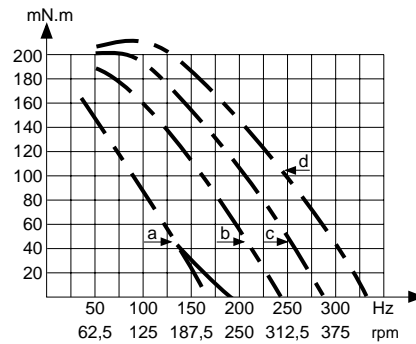
**Curves**

Max. stopping-starting curves -----  
 Max. operating curves \_\_\_\_\_

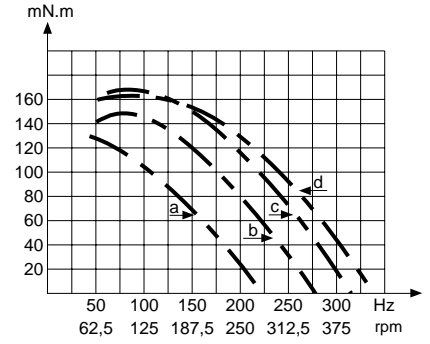
Inertia of measuring chain : 20.5 g.cm<sup>2</sup>

- a= constant voltage controller with R<sub>s</sub> (resistance in series) = 0
- b = constant voltage controller with R<sub>s</sub> (resistance in series) = R motor
- c = constant voltage controller with R<sub>s</sub> (resistance in series) = 2R motor
- d = constant voltage controller with R<sub>s</sub> (resistance in series) = 3R motor

**2 phases**



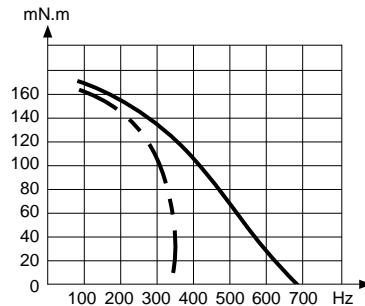
**4 phases**



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

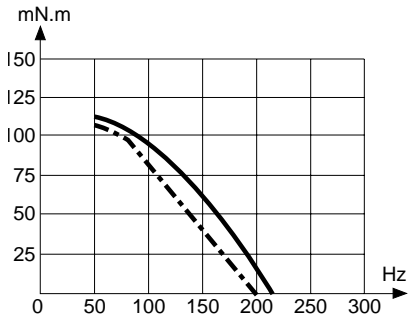
**2 phases**

Max. stopping-starting and operating curves at I constant (PBL 3717) for 2 (motor) phases 5.2 ohms.  
 Holding torque 240 mN.m  
 Current per phase 0.55 A



**4 phases - 7.4 Ω - MOT002-3/13**

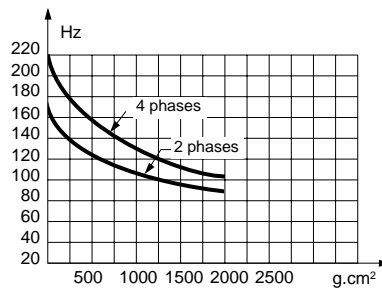
(see p.3/21)



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<sub>amb</sub> = 25° C, motor cold.



**To order, specify :**

Standard products

**1**

Part number

**2**

Motor shaft

Example: Permanent magnet stepper motor 82 940 002 - Type 1

Made to order products available on request