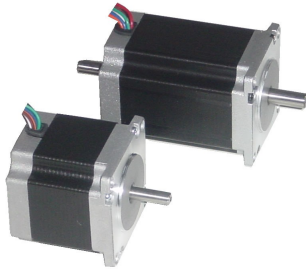




## SX Series Hybrid Two-Phase Stepper Motors

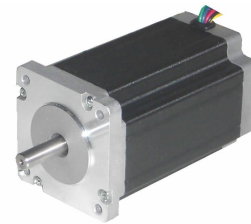
SX stepper motors are available in NEMA23, NEMA24, NEMA34 and NEMA42 frames. High tech SX Series offers high performance in a small package. Standard full step angle is 1,8° (200 steps/rev) - electronic microstepping is available.

The SX Series offers also types with double ended shaft.



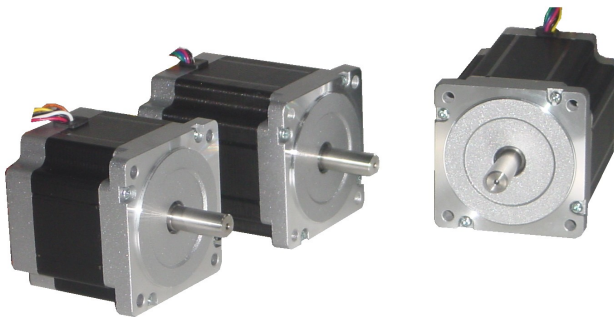
**NEMA23 frame**

from the left SX23-1414, SX23-2727D



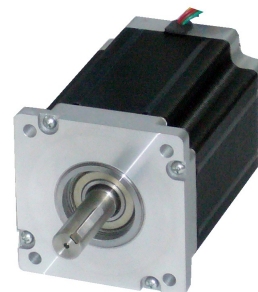
**NEMA24 frame**

SX24-3341



**NEMA34 frame**

from the left SX34-2740N, SX34-2970, SX34-5010



**NEMA42 frame**

SX42-6525

SX stepper motor types described in these data sheets are supplied from the Microcon stock.

## SX23, SX24 Series - Technical Parameters



### SX Series - NEMA23 Frame

Model	Holding Torque (2 phases on) (Nm)	Rated Current/Phase (A) series / parallel	Phase Inductance (mH) series / parallel	Phase Resistance (Ω) series / parallel	Rotor Inertia (kgm <sup>2</sup> x10 <sup>-3</sup> )	Weight (kg)
SX23-1414	1,4	1,4 / 2,8	11,2 / 2,8	3,4 / 0,85	0,03	0,69
SX23-2727 / SX23-2727D	2,7	2,7 / 5,4	6,4 / 1,6	1,5 / 0,375	0,053	1,18

### SX Series - NEMA24 Frame (60 x 60 mm, NEMA size 23 mounting)

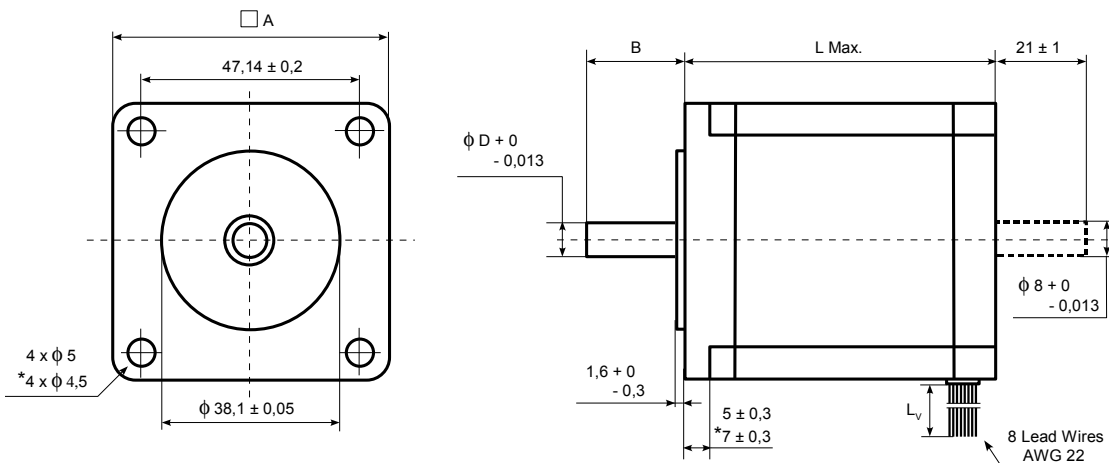
SX24-3341	4,1	3,3 / 6,6	5,8 / 1,45	1,28 / 0,32	0,12	1,63
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D - double ended shaft

Full Step Angle	.....	1,8°
Angular Accuracy	.....	± 0,1°
Insulation	.....	NEMA Class B (130°C)

### Dimensions (mm)

Model	Shafts			Length	Lead Wires
	D	B	□ A	L Max.	L <sub>v</sub>
SX23-1414	6,35	21 ± 1	56,4	54	500
SX23-2727	8	21 ± 1	57	83	600
SX23-2727D	8	21 ± 1	57	83	600
SX24-3341	8	24 ± 1	60	100	300



\* SX24-3341



## SX34 Series - Technical Parameters

### SX Series - NEMA34 Frame

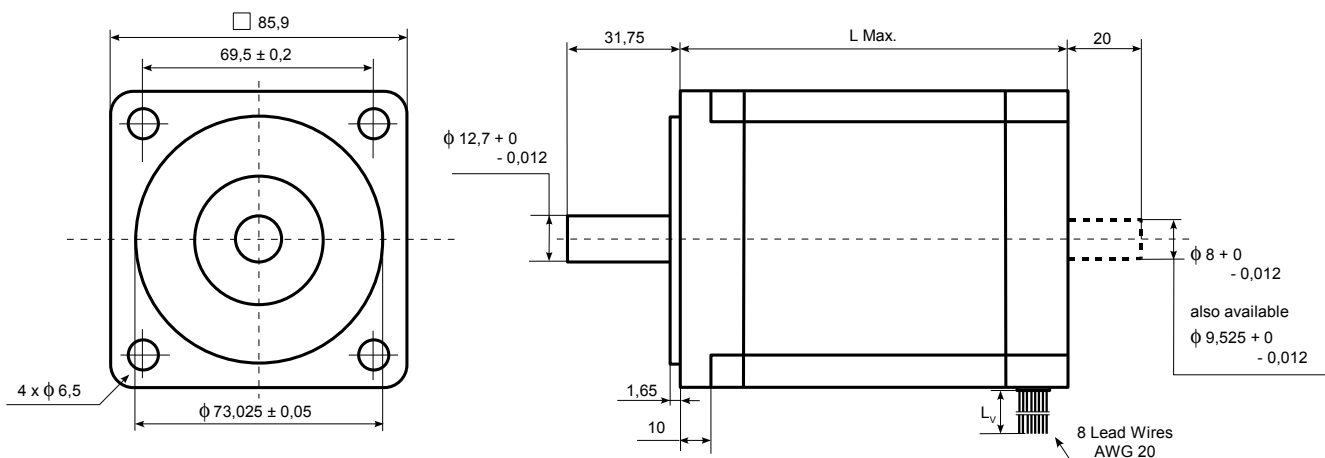
Model	Holding Torque (2 phases on) (Nm)	Rated Current/Phase (A) series / parallel	Phase Inductance (mH) series / parallel	Phase Resistance (Ω) series / parallel	Rotor Inertia (kgm <sup>2</sup> x10 <sup>-3</sup> )	Weight (kg)
SX34-2740N	5,3	2,75 / 5,5	14 / 3,5	1,68 / 0,42	0,14	2,3
SX34-2970	7	2,9 / 5,8	16,4 / 4,1	1,5 / 0,375	0,18	3
SX34-5010 / SX34-5010D	10	5 / 10	6,8 / 1,7	0,7 / 0,175	0,27	3,7

D - double ended shaft

Full Step Angle	.....	1,8°
Angular Accuracy	.....	± 0,1°
Insulation	.....	NEMA Class B (130°C)

### Dimensions (mm)

Model	Length	Lead Wires
	L Max.	L <sub>v</sub>
SX34-2740N	78	500
SX34-2970	98	300
SX34-5010 / SX34-5010D	115	400



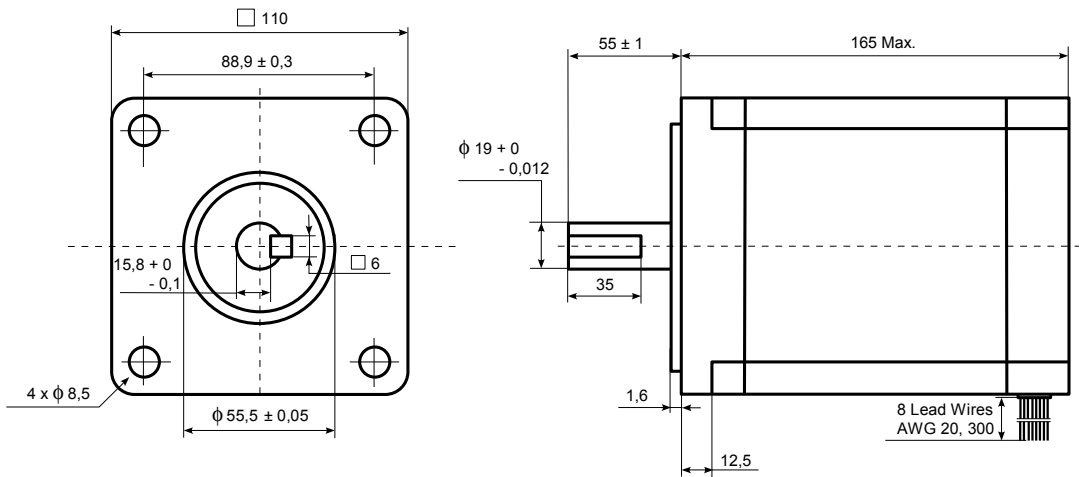
## SX42 Series - Technical Parameters



SX Series - NEMA42 Frame						
Model	Holding Torque (2 phases on) (Nm)	Rated Current/Phase (A) series / parallel	Phase Inductance (mH) series / parallel	Phase Resistance (Ω) series / parallel	Rotor Inertia (kgm <sup>2</sup> x10 <sup>-3</sup> )	Weight (kg)
SX42-6525	25	6,5 / 13	14,4 / 3,6	0,9 / 0,225	1,3	9,1

Full Step Angle ..... 1,8°  
 Angular Accuracy ..... ± 0,1°  
 Insulation ..... NEMA Class B (130°C)

### Dimensions (mm)



## SX Series

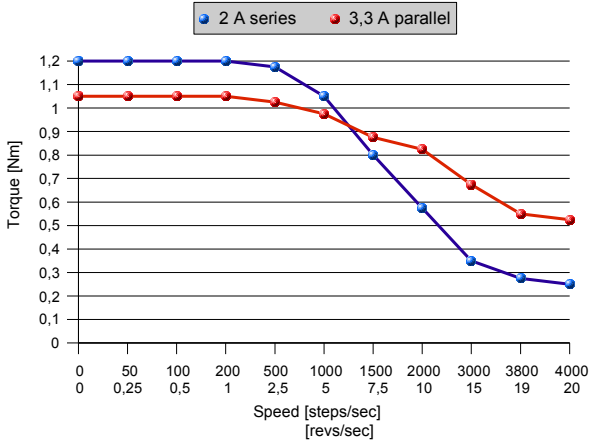


SX Series	Shaft Loading			
	Max. Axial Force (N)	Max. Radial Force (N)	Ambient Temperature (°C)	PWM Driver Supply Voltage (VDC Max.)
SX23	15	55 (20 mm from the flange)	-10 to +40	50
SX24	15	55 (20 mm from the flange)	-10 to +40	75
SX34	50	200 (20 mm from the flange)	-10 to +40	75
SX42	55	215 (20 mm from the flange)	-10 to +40	75

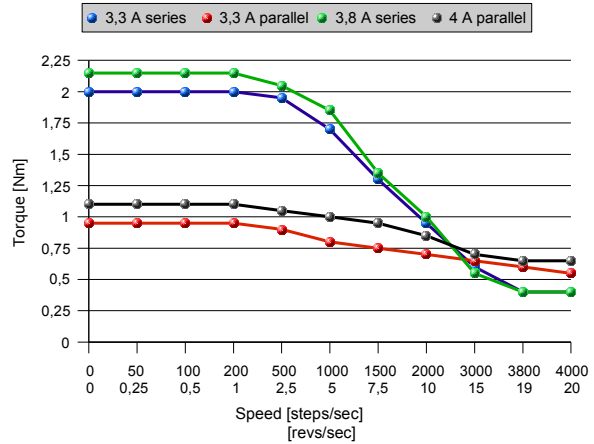


# SX Series Torque/Speed Characteristics

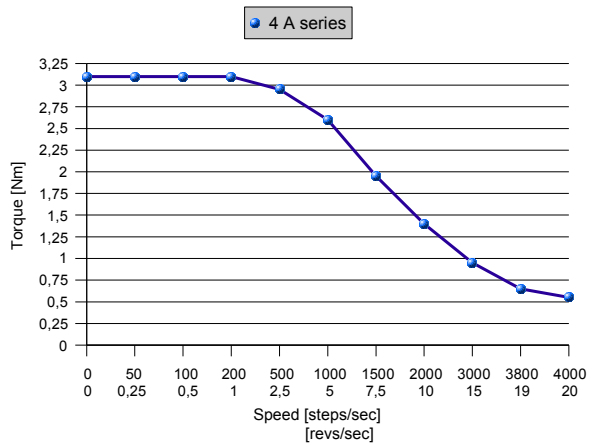
Torque/speed curves of SX23-1414 stepper motor with 48 VDC driver voltage



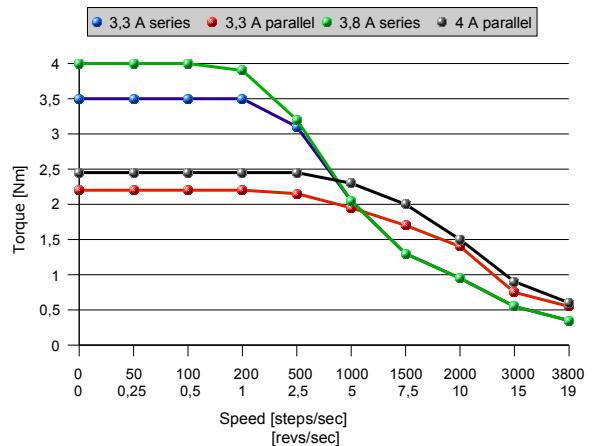
Torque/speed curves of SX23-2727 stepper motor with 48 VDC driver voltage



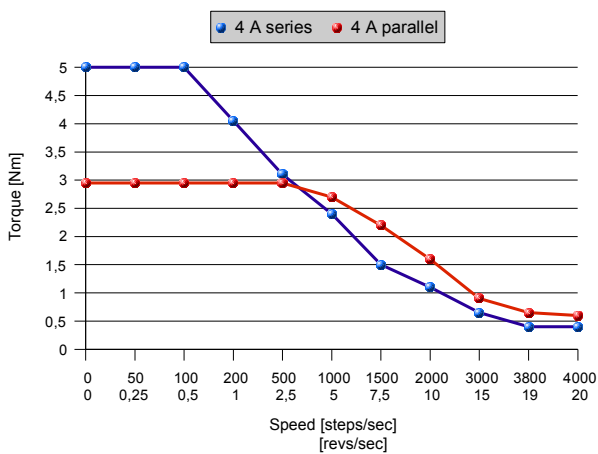
Torque/speed curve of SX24-3341 stepper motor with 48 VDC driver voltage



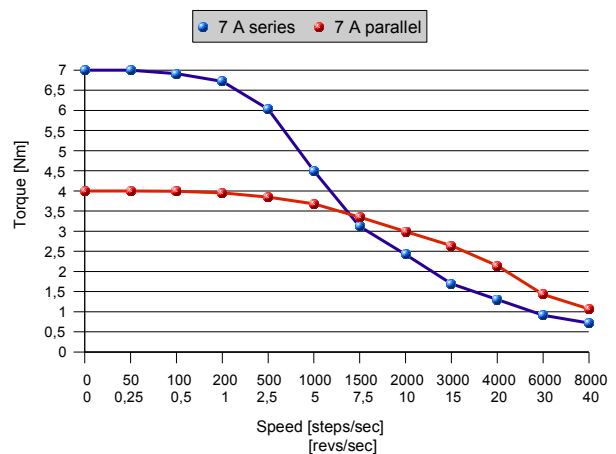
Torque/speed curves of SX34-2740N stepper motor with 48 VDC driver voltage



Torque/speed curves of SX34-2970 stepper motor with 48 VDC driver voltage



Torque/speed curves of SX34-5010 stepper motor with 65 VDC driver voltage

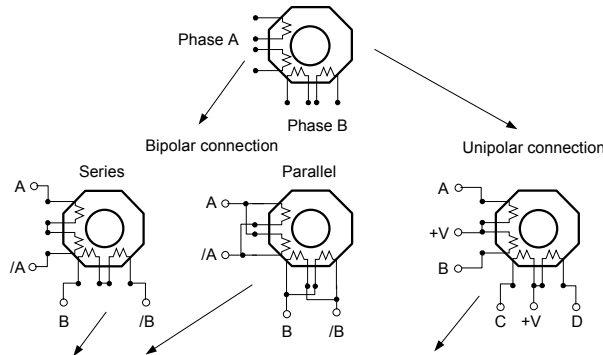


Motor current amplitude/phase is included in the legends.

# Phase Sequencing / Installation Guide



## Phase Sequencing



		Bipolar Full Step Phase Sequencing				Unipolar Full Step Phase Sequencing				
CW	Step	A	/A	B	/B	A	B	C	D	
↓	1	+	-	-	+	GND	0	GND	0	↑
	2	-	+	-	+	0	GND	GND	0	
	3	-	+	+	-	0	GND	0	GND	
	4	+	-	+	-	GND	0	0	GND	
	1	+	-	-	+	GND	0	GND	0	
										CCW

0 = OFF or open  
 + = positive current flow  
 - = negative current flow

## Installation Guide - Power Connections

### 8 flying leads

Connection	Driver Connection	Lead Color
4-lead bipolar series	A	orange
	/A	black
	B	blue
	/B	white
4-lead bipolar parallel	none	red & brown
	none	yellow & green (grey)
	A	orange & brown
	/A	red & black
	B	blue & green (grey)
	/B	yellow & white

### 4 flying leads

Connection	Driver Connection	Lead Color
4-lead bipolar series	A	orange
	/A	black
	B	blue
	/B	white

Power connections are valid only for SX stepper motor types described in these data sheets.

SX series motors are components intended exclusively for an industrial assembly operation for incorporation into other apparatus.