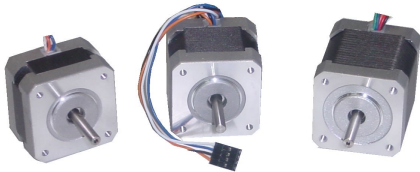


SX Series Hybrid Two-Phase Stepper Motors

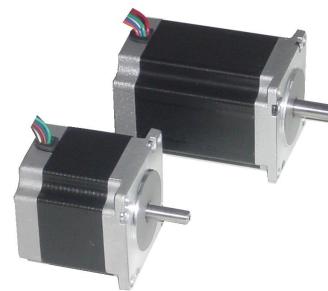


SX stepper motors are available in NEMA17, NEMA23, NEMA24 and NEMA34 frames. High tech SX Series offers high performance in a small package. Standard full step angle is 1,8° (200 steps/rev) - electronic microstepping is available.



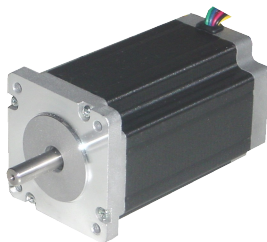
NEMA17 frame

from the left SX17-1003LQCEF, SX17-1005LQCEF, SX17-1705



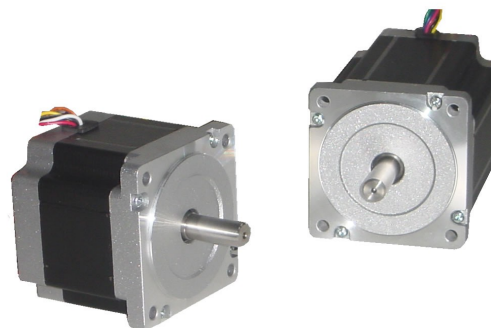
NEMA23 frame

from the left SX23-1414, SX23-2727



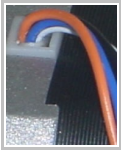
NEMA24 frame

SX24-3341QF



NEMA34 frame

from the left SX34-2740N, SX34-5010



SX17 Series - Technical Parameters

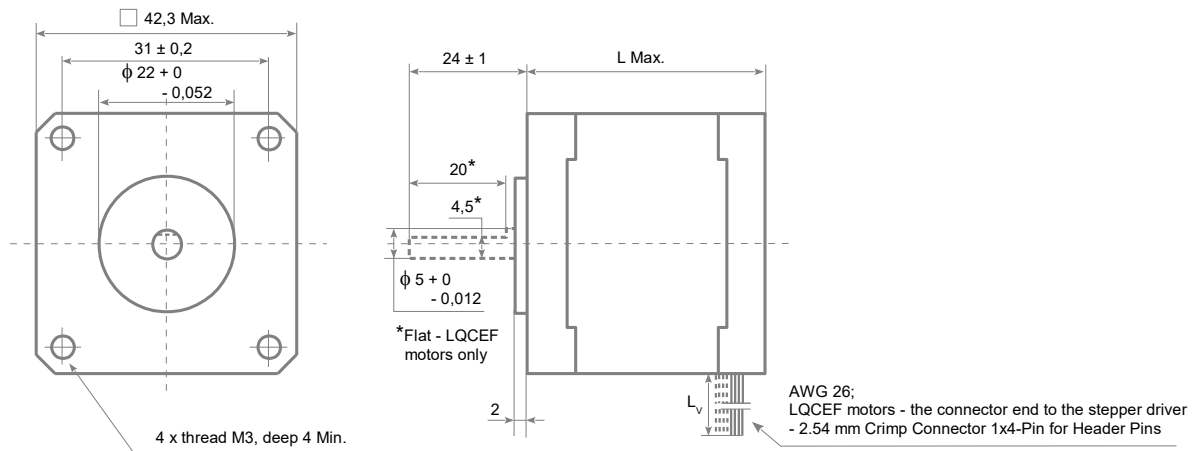
SX Series - NEMA17 Frame

Model	Holding Torque (2 phases on) (Nm)	Rated Current/Phase (A) series / parallel	Phase Inductance (mH) series / parallel	Phase Resistance (Ω) series / parallel	Detent Torque (Nm)	Rotor Inertia (gcm ²)	Weight (kg)
SX17-1003LQCEF	0,3	1 / -	7,2 / -	4,2 / -	0,016	32	0,2
SX17-1005	0,5	1 / 2	10,8 / 2,7	5,4 / 1,35	0,022	54	0,3
SX17-1005LQCEF	0,52	1 / -	14 / -	5,9 / -	0,022	54	0,3
SX17-1705	0,6	1,77 / 3,54	3,2 / 0,8	2 / 0,5	0,026	68	0,38

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

Dimensions (mm)

Model	□ Main Shaft	Length		Lead Wires
	Flat	L Max.	L _v	Number
SX17-1003LQCEF	yes	29,5	700 (flexible)	4; the connector end to the stepper driver - 2.54 mm Crimp Connector 1x4-Pin for Header Pins
SX17-1005	-	40	300	8
SX17-1005LQCEF	yes	40	740 (flexible)	4; the connector end to the stepper driver - 2.54 mm Crimp Connector 1x4-Pin for Header Pins
SX17-1705	-	48	300	8





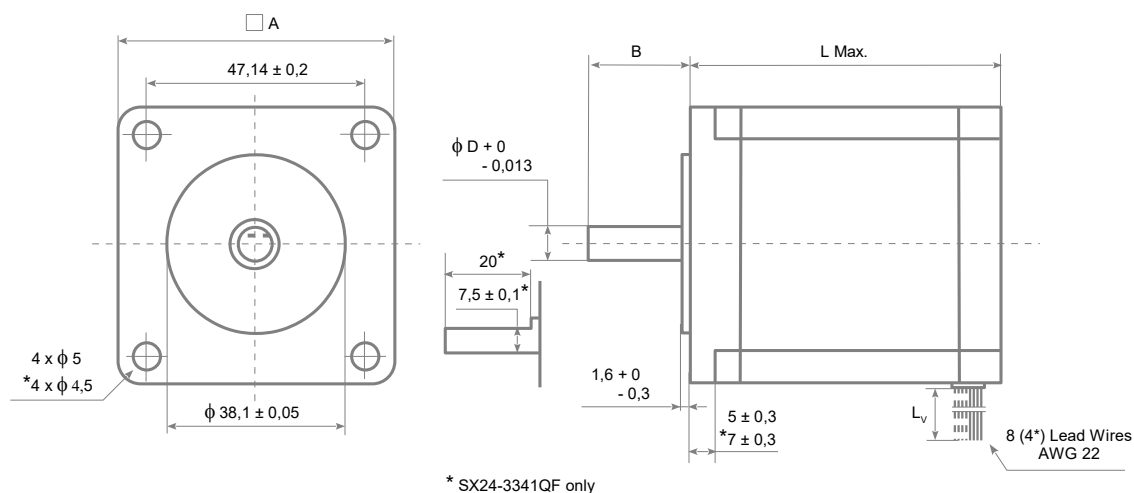
SX23, SX24 Series - Technical Parameters

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 ² x10 ⁻³)	Weight (kg)
SX23-1414	1,4	1,4 / 2,8	11,2 / 2,8	3,4 / 0,85	0,03	0,69
SX23-2727	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)						
SX24-3341QF	4,1	3,3 / -	5,8 / -	1,28 / -	0,12	1,63

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 _v
SX23-1414	6,35	21 ± 1	56,4	54	500
SX23-2727	8	21 ± 1	57	83	600
SX24-3341QF	8 (Flat)	24 ± 1	60	100	300





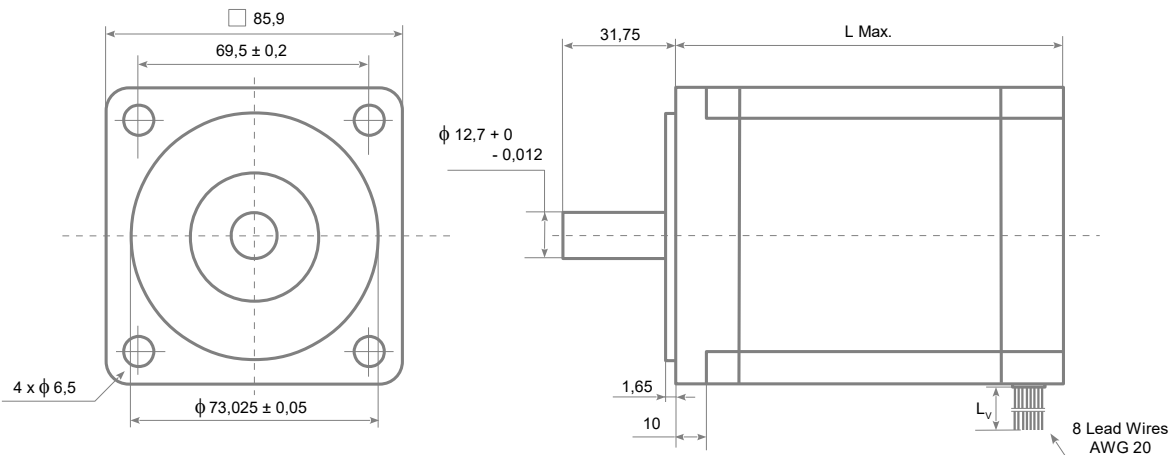
SX34 Series - Technical Parameters

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 ² x10 ⁻³)	Weight (kg)
SX34-2740N	5,3	2,75 / 5,5	14 / 3,5	1,68 / 0,42	0,14	2,3
SX34-5010	10	5 / 10	6,8 / 1,7	0,7 / 0,175	0,27	3,7

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

Dimensions (mm)

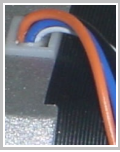
Model	Length	Lead Wires
	L Max.	L _v
SX34-2740N	78	500
SX34-5010	115	400



Shaft Loading, Ambient Temperature, Voltage

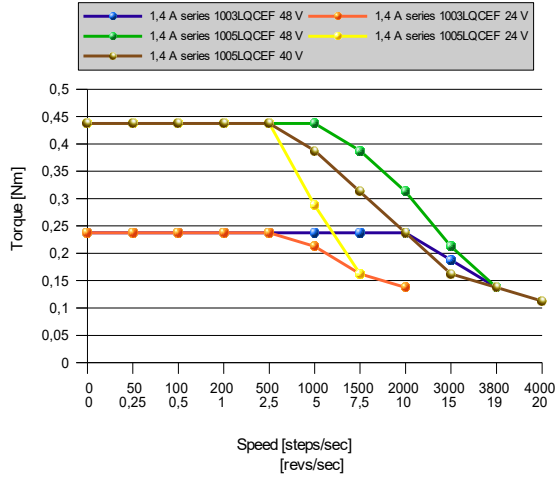


SX Series		Shaft Loading		
	Max. Axial Force (N)	Max. Radial Force (N)	Ambient Temperature (°C)	PWM Driver Supply Voltage (VDC Max.)
SX17	7	27 (20 mm from the flange)	-10 to +40	50
SX23	15	55 (20 mm from the flange)	-10 to +40	50
SX24	15	55 (20 mm from the flange)	-10 to +40	70
SX34	50	200 (20 mm from the flange)	-10 to +40	70

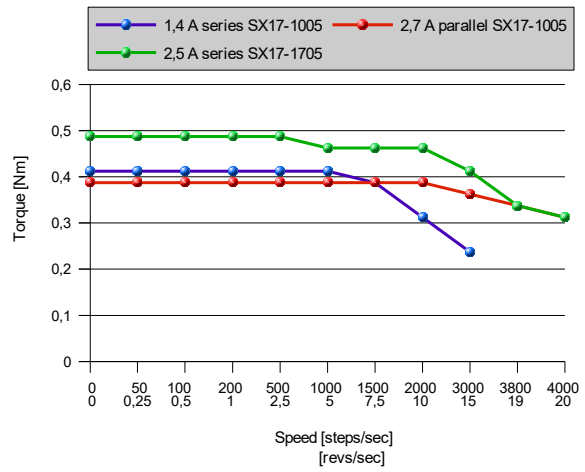


SX17, SX23, SX24 Series Torque/Speed Characteristics

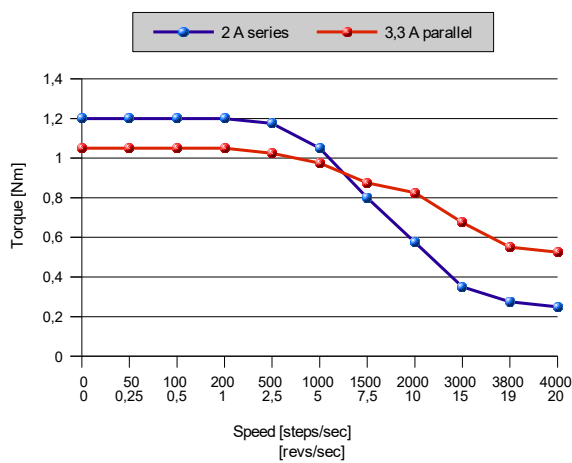
Torque/speed curves of SX17-1003LQCEF, SX17-1005LQCEF stepper motors with 48 VDC, 40 VDC, 24 VDC driver voltage



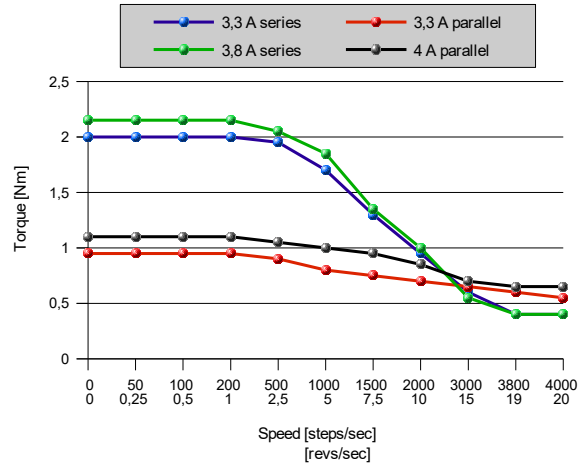
Torque/speed curves of SX17-1005, SX17-1705 stepper motors with 48 VDC driver voltage



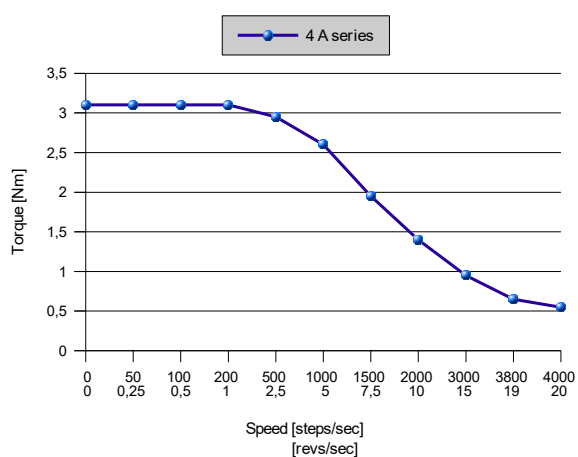
Torque/speed curves of SX23-1414 stepper motor with 48 VDC driver voltage



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



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

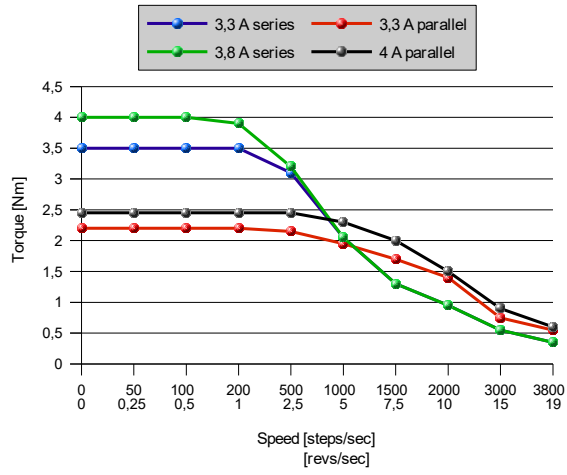


Motor current amplitude/phase is included in the legends.

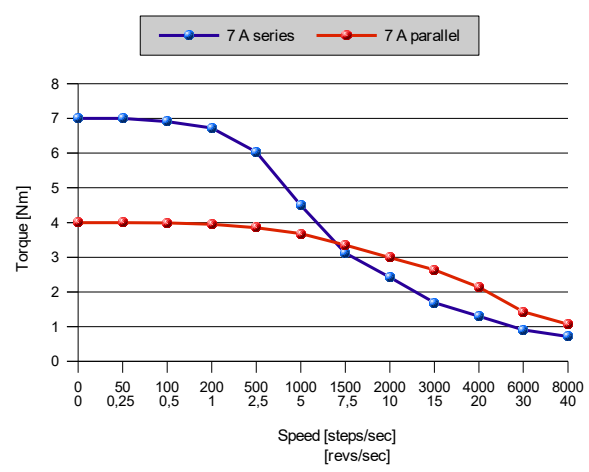
SX 34 Series Torque/Speed Characteristics



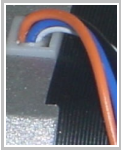
Torque/speed curves of SX34-2740N stepper motor with 48 VDC driver voltage



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

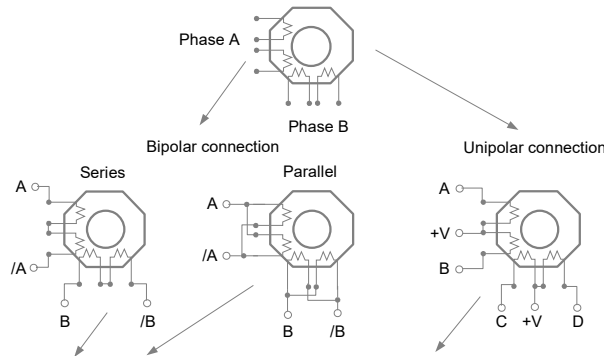


Motor current amplitude/phase is included in the legends.



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
	none	red & brown
	none	yellow & green (grey)
4-lead bipolar parallel	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. SX series motors are sold as a stand-alone components for further production or integration.