

SureStep® Stepping System Motors

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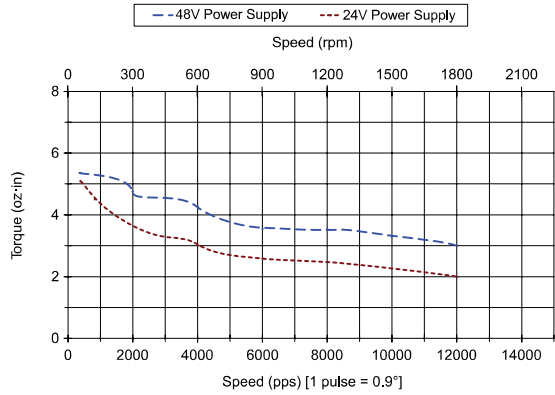
SureStep Series Specifications – Connectorized Bipolar Stepping Motors													
Bipolar Stepping Motors		Low Torque Motors		High Torque Motors					Higher Torque Motors				
		STP-MTRL-14026(x)	STP-MTRL-14034(x)	STP-MTR-17040(x)	STP-MTR-17048(x)	STP-MTR-17060(x)	STP-MTR-23055(x)	STP-MTR-23079(x)	STP-MTR-34066(x)	STP-MTRH-23079(x)	STP-MTRH-34066(x)	STP-MTRH-34097(x)	STP-MTRH-34127(x)
NEMA Frame Size		14	14	17	17	17	23	23	34	23	34	34	34
Maximum Holding Torque*	(lb-in)	0.5	1.25	3.81	5.19	7.19	10.37	17.25	27.12	17.87	27.12	50.00	80.50
	(oz-in)	8	20	61	83	115	166	276	434	286	434	800	1288
	(N-m)	0.06	0.14	0.43	0.59	0.81	1.17	1.95	3.06	2.02	3.06	5.65	9.10
Rotor Inertia	(oz-in ²)	0.06	0.08	0.28	0.37	0.56	1.46	2.60	7.66	2.60	7.66	14.80	21.90
	(kg-cm ²)	0.0003	0.00035	0.05	0.07	0.10	0.27	0.48	1.40	0.48	1.40	2.71	4.01
Rated Current (A/phase)		0.35	0.8	1.7	2.0	2.0	2.8	2.8	2.8	5.6	6.3	6.3	6.3
Resistance (Ω/phase)		8.5	7.66	1.6	1.4	2.0	0.75	1.1	1.11	0.4	0.25	0.3	0.49
Inductance (mH/phase)		5.77	6.92	3.0	2.7	3.3	2.4	3.8	6.6	1.2	1.5	2.1	4.1
Insulation Class		130°C [266°F] Class B; 300V rms											
Basic Step Angle		1.8°											
Shaft Runout (in)		0.002 in [0.051 mm]											
Max Shaft Radial Play @ 1lb load		0.001 in [0.025 mm]											
Perpendicularity		0.003 in [0.076 mm]											
Concentricity		0.003 in [0.076 mm]											
Maximum Radial Load (lb [kg])*		6.0 [2.7]			15.0 [6.8]		39.0 [17.7]		15.0 [6.8]		39.0 [17.7]		
Maximum Thrust Load (lb [kg])*		6.0 [2.7]			13.0 [5.9]		25.0 [11.3]		13.0 [5.9]		25.0 [11.3]		
Storage Temperature Range		-20°C to 100°C [-4°F to 212°F]											
Operating Temperature Range		-20°C to 50°C [-4°F to 122°F] (motor case temperature should be kept below 80°C [176°F])											
Operating Humidity Range		55% to 85% non-condensing											
Product Material		steel motor case; stainless steel shaft(s)											
Environmental Rating		IP40 (IP65 for "W" motors)											
Weight (lb [kg]) (E models)		0.25 [0.11] (0.3 [0.1])	0.35 [0.15] (0.4 [0.2])	0.6 [0.3] (0.7 [0.3])	0.7 [0.3] (0.8 [0.4])	0.9 [0.4] (0.9 [0.4])	1.5 [0.7] (1.5 [0.7])	2.2 [1.0] (2.4 [1.1])	3.9 [1.7]	2.4 [1.1] (2.4 [1.1])	3.9 [1.7]	5.9 [2.7]	8.4 [3.8]
Agency Approvals		CE											
Design Tips		Allow sufficient time to accelerate the load and size the step motor with a 100% torque safety factor. DO NOT disassemble step motors because motor performance will be reduced and the warranty will be voided. DO NOT connect or disconnect the step motor during operation. Mount the motor to a surface with good thermal conductivity, such as steel or aluminum, to allow heat dissipation. Use a flexible coupling with "clamp-on" connections to both the motor shaft and the load shaft to prevent radial and thrust loading on bearings from minor misalignment.											
Accessory Extension Cable		STP-EXTL-0xx		STP-EXT-0xx STP-EXTW-0xx (for "W" motors)					STP-EXTH-0xx STP-EXTHW-0xx (for "W" motors)				
* For dual-shaft motors (STP-MTR-xxxxD): The sum of the front and rear Torque Loads, Radial Loads, and Thrust Loads must not exceed the applicable Torque, Radial, and Thrust load ratings of the motor.													

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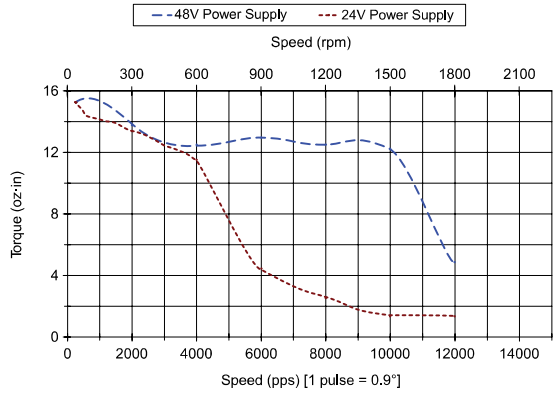
SureStep[®] Motor Running Torque vs. Speed Charts

STP-MTR-14xxx(x) NEMA 14 Step Motors

STP-MTR-14026(x) Torque vs Speed (1.8° step motor; 1/2 stepping, RMS phase current)



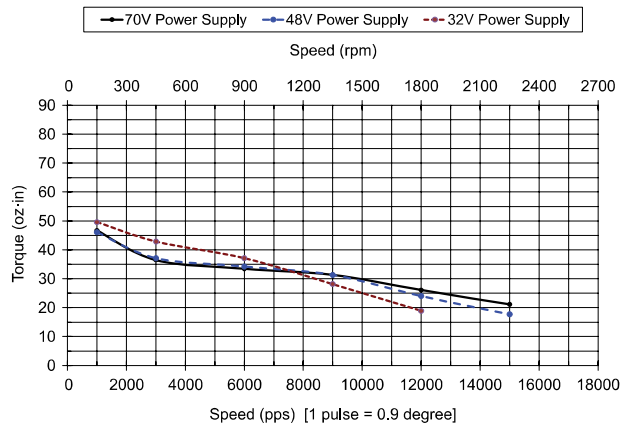
STP-MTR-14034(x) Torque vs Speed (1.8° step motor; 1/2 stepping, RMS phase current)



STP-MTR-17xxx(x) NEMA 17 Step Motors

Note: "W" series motors have 5% less running torque than other models

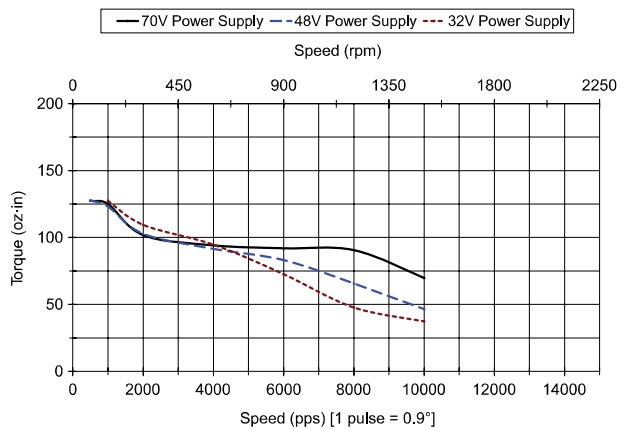
STP-MTR-17040(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



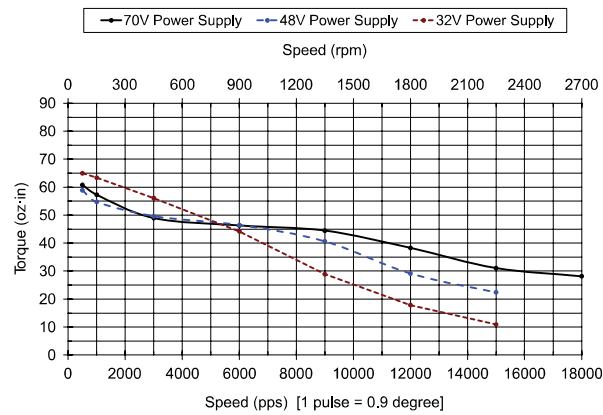
STP-MTR(H)-23xxx(x) NEMA 23 Step Motors

Note: "W" series motors have 5% less running torque than other models

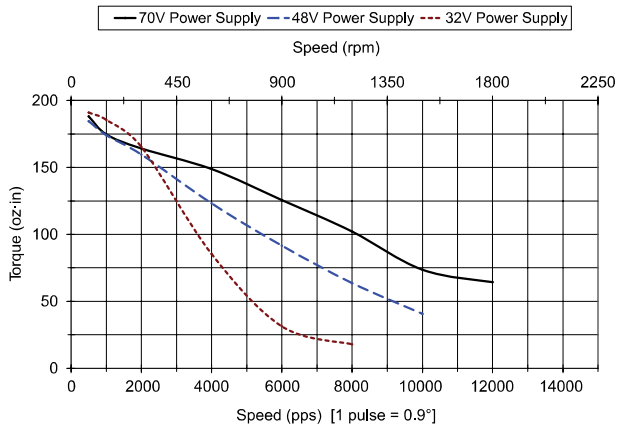
STP-MTR-23055(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



STP-MTR-17048(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



STP-MTR-23079(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



Note: Motor torque vs speed charts for STP-MTRD series integrated motor/drives can be found in the integrated motor/drives section of the full catalog