

SureStep® Stepping System Motors

SureStep® Stepping Motors

SureStep Series Part Numbers – Connectorized Bipolar Stepping Motors*					
Bipolar Stepping Motors	Price	Shaft Type	Torque Level	Encoder Mounting	
STP-MTRL-14026	\$22.00	single	low	not available	
STP-MTRL-14026D	\$26.00	dual		optional	
STP-MTRL-14026E**	\$94.00	dual		pre-installed	
STP-MTRL-14034	\$27.50	single		not available	
STP-MTRL-14034D	\$31.50	dual		optional	
STP-MTRL-14034E**	\$98.00	dual		pre-installed	
STP-MTR-17040	\$18.50	single		high	not available
STP-MTR-17040D	\$22.50	dual			optional
STP-MTR-17040E**	\$89.00	dual			pre-installed
STP-MTR-17040W***	\$128.00	single			not available
STP-MTR-17048	\$22.50	single	not available		
STP-MTR-17048D	\$26.00	dual	optional		
STP-MTR-17048E**	\$94.00	dual	pre-installed		
STP-MTR-17048W***	\$131.00	single	not available		
STP-MTR-17060	\$36.00	single	not available		
STP-MTR-17060D	\$40.00	dual	optional		
STP-MTR-17060E**	\$108.00	dual	pre-installed		
STP-MTR-17060W***	\$170.00	single	not available		
STP-MTR-23055	\$36.00	single	not available		
STP-MTR-23055D	\$40.50	dual	optional		
STP-MTR-23055E**	\$109.00	dual	pre-installed		
STP-MTR-23055W***	\$158.00	single	not available		
STP-MTR-23079	\$47.00	single	not available		
STP-MTR-23079D	\$51.00	dual	optional		
STP-MTR-23079E**	\$120.00	dual	pre-installed		
STP-MTR-23079W***	\$172.00	single	not available		
STP-MTR-34066	\$113.00	single	not available		
STP-MTR-34066D	\$128.00	dual	optional		
STP-MTR-34066W***	\$205.00	single	not available		
STP-MTRH-23079	\$52.00	single	higher	not available	
STP-MTRH-23079D	\$56.00	dual		optional	
STP-MTRH-23079E**	\$125.00	dual		pre-installed	
STP-MTRH-23079W***	\$255.00	single		not available	
STP-MTRH-34066	\$126.00	single		not available	
STP-MTRH-34066D	\$141.00	dual		optional	
STP-MTRH-34066W***	\$290.00	single		not available	
STP-MTRH-34097	\$143.00	single		not available	
STP-MTRH-34097D	\$157.00	dual		optional	
STP-MTRH-34097W***	\$325.00	single		not available	
STP-MTRH-34127	\$169.00	single	not available		
STP-MTRH-34127D	\$185.00	dual	optional		
STP-MTRH-34127W***	\$355.00	single	not available		

* For integrated motor/drives part numbers and pricing, see the integrated motor/drives section.

** E model motors come with a STP-MTRA-ENC9 encoder pre-installed. Requires STP-CBL-EBxx for encoder wiring. To change from the default 400ppr, use STP-USBENC-CBL-1. See the SureStep Stepping System Encoders section for more details.

*** W models are IP65 washdown rated. All others are IP40.

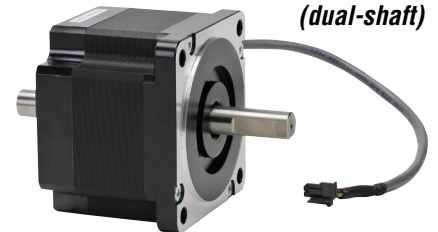
**STP-MTR-xxxxx
(single-shaft)**



**STP-MTR-xxxxxE
(encoder mount)**



**STP-MTR-xxxxxD
(dual-shaft)**



**STP-MTR-xxxxxW
(IP65)**



SureStep® Stepping Motors Mounting Accessory

Mounting Accessory – for NEMA 17 SureStep Series Bipolar Stepping Motors		
Part Number	Price	Description
STP-MTRA-RB-85	\$8.25	Reducer bushing, 8mm OD to 5mm ID, 16mm length, aluminum alloy. Connects NEMA size 17 stepper motors to Koyo TRD-NH and TRD-SH hollow shaft encoders.

SureStep[®] Stepping System Motors

SureStep[®] Stepping Motors

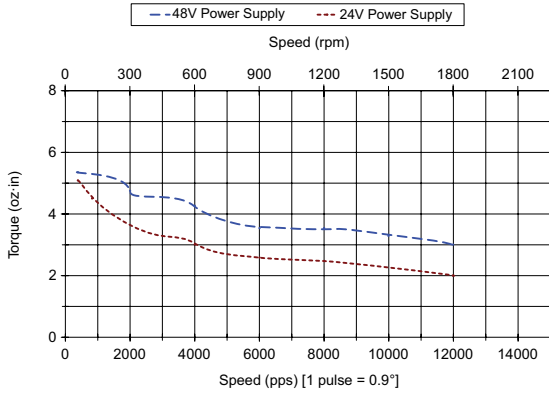
SureStep Series Specifications – Connectorized Bipolar Stepping Motors													
Bipolar Stepping Motors	Low Torque Motors		High Torque Motors						Higher Torque Motors				
	STP-MTRL-14026(x)	STP-MTRL-14034(x)	STP-MTR-17040(x)	STP-MTR-17048(x)	STP-MTR-17060(x)	STP-MTR-23055(x)	STP-MTR-23079(x)	STP-MTR-34066(x)	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	<p>Allow sufficient time to accelerate the load and size the step motor with a 100% torque safety factor.</p> <p>DO NOT disassemble step motors because motor performance will be reduced and the warranty will be voided.</p> <p>DO NOT connect or disconnect the step motor during operation.</p> <p>Mount the motor to a surface with good thermal conductivity, such as steel or aluminum, to allow heat dissipation.</p> <p>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.</p>												
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.													

SureStep[®] Stepping System Motors

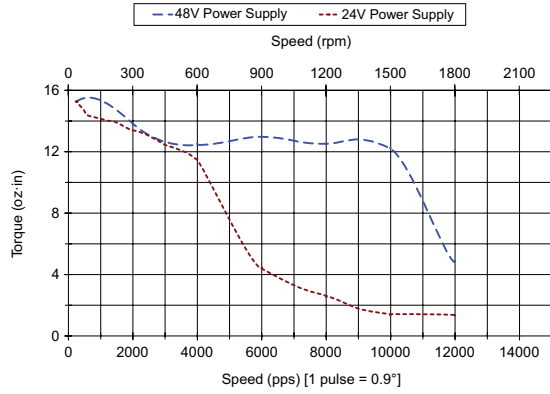
SureStep[®] Motor Running Torque vs. Speed Charts

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)



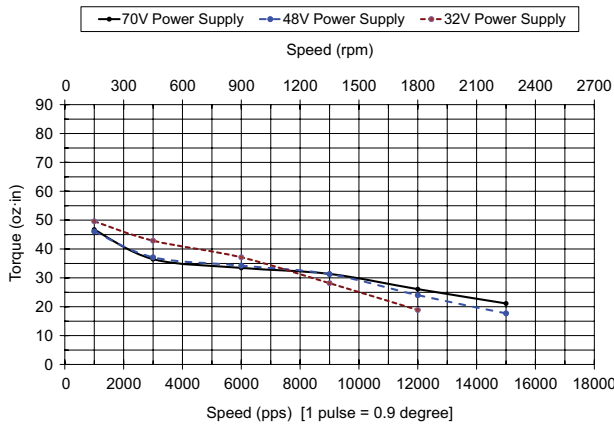
STP-MTR-14034(x) Torque vs Speed (1.8° step motor; 1/2 stepping, RMS phase current)



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

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

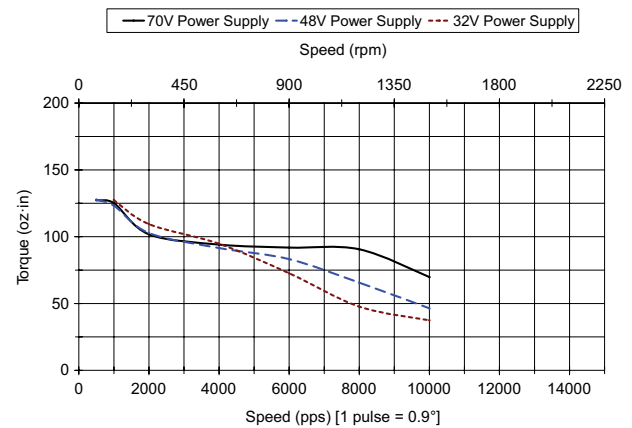
STP-MTR-17040(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



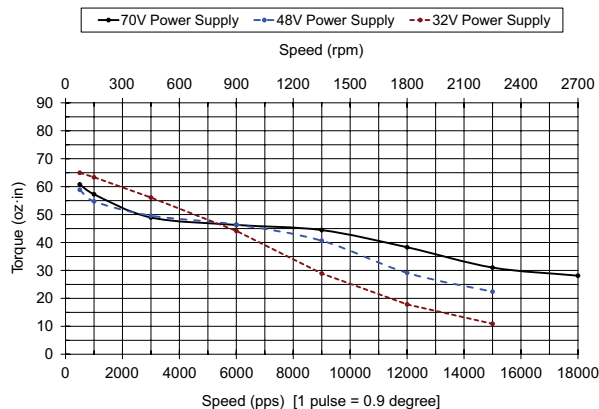
STP-MTR(H)-23xxx(x) NEMA 23 Step Motors

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

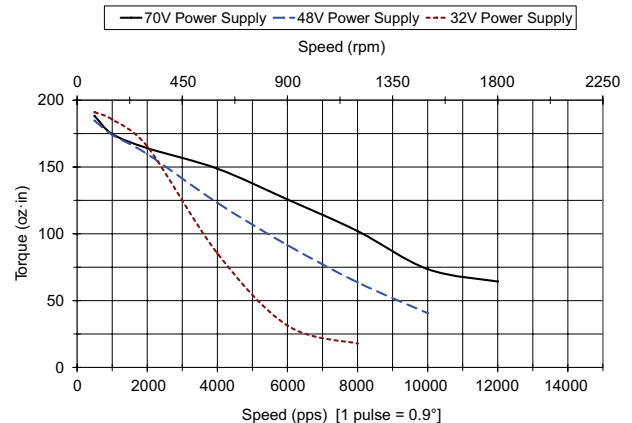
STP-MTR-23055(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



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)

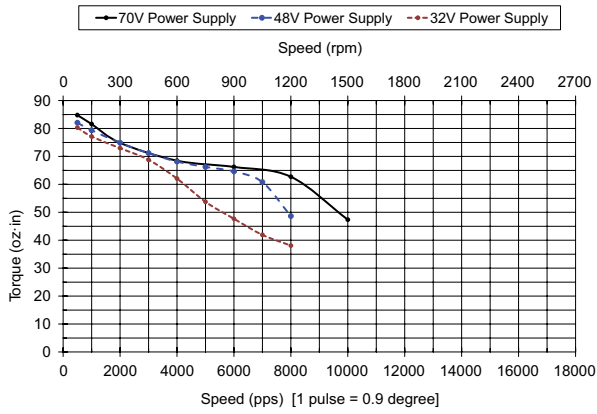


Note: Motor torque vs speed charts for STP-MTRD series integrated motor/drives can be found in the integrated motor/drives section of the full catalog

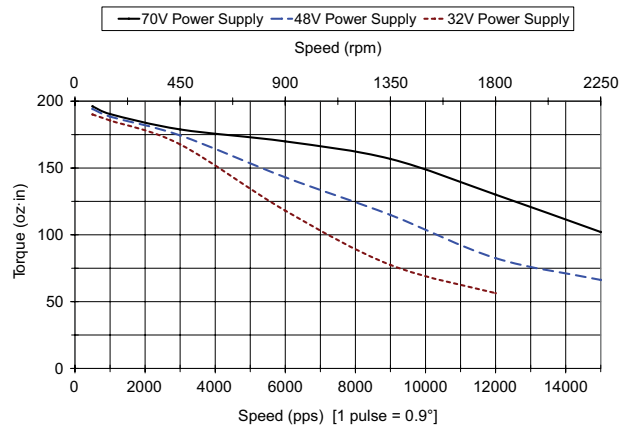
SureStep[®] Stepping System Motors

SureStep[®] Motor Torque vs. Speed Charts (continued)

STP-MTR-17060(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



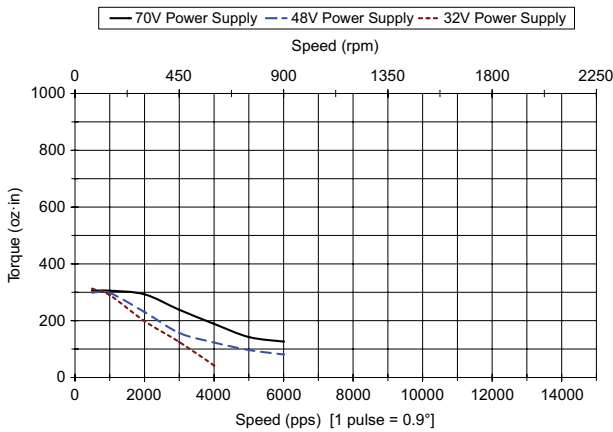
STP-MTRH-23079(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



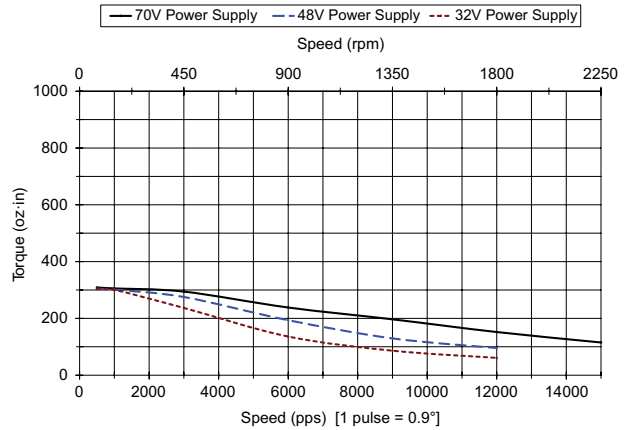
STP-MTR(H)-34xxx(x) NEMA 34 Step Motors

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

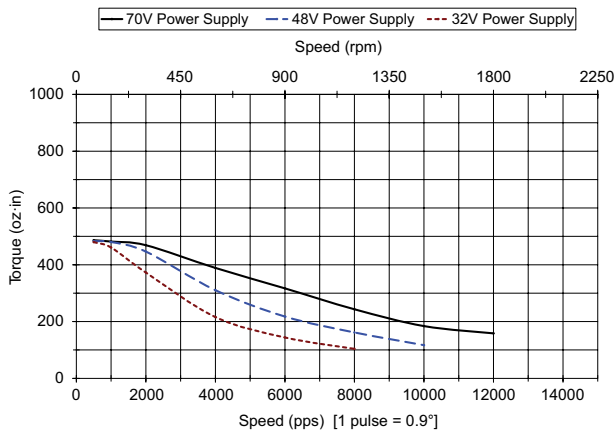
STP-MTR-34066(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



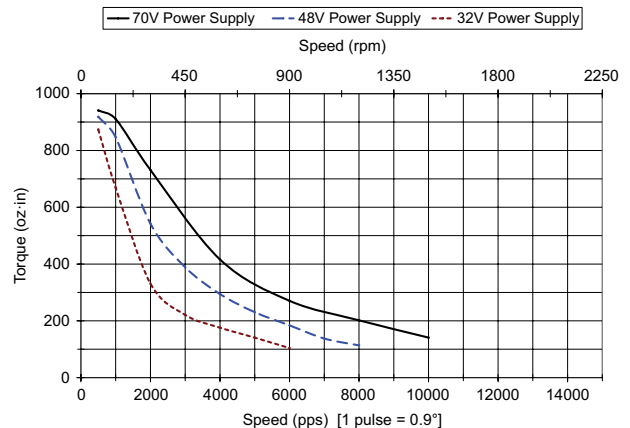
STP-MTRH-34066(x) Torque vs Speed (1.8° motor; 1/2 stepping)



STP-MTRH-34097(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



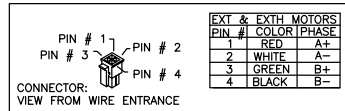
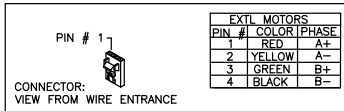
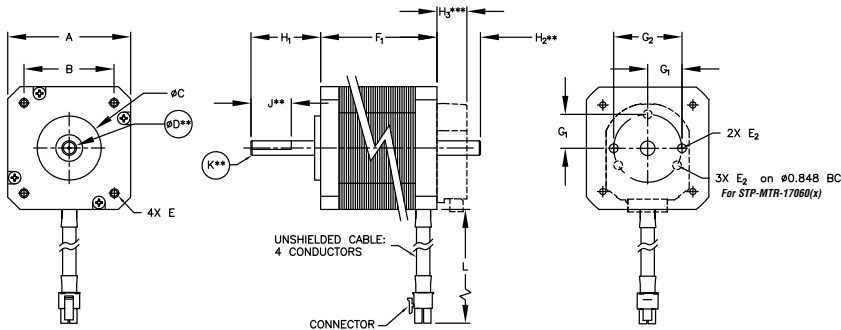
STP-MTRH-34127(x) Torque vs Speed (1.8° step motor; 1/2 stepping)



SureStep® Stepping System Motors

SureStep® Motor Dimensions and Cabling

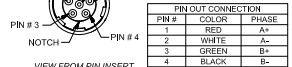
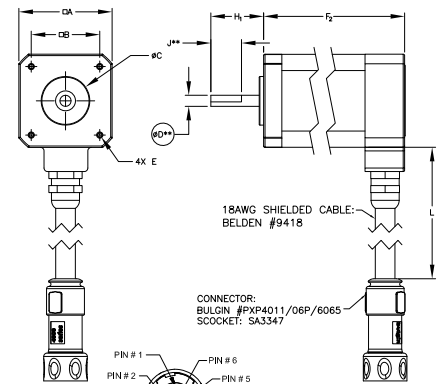
STP-MTR(x)-xxxx(x) Motors



- D** NEMA # 14,17: ROUND SHAFT
- K** NEMA # 23 (front shaft): ONE FLAT
- NEMA # 34 (front shaft): TWO FLATS 90° APART

Note: Drawings and dimensions for STP-MTRD series integrated motor/drives can be found in the integrated motor/drives section of the manual

STP-MTR-xxxxW Motors



- D** NEMA # 14,17: ROUND SHAFT
- K** NEMA # 23 : ONE FLAT
- NEMA # 34 : TWO FLATS 90° APART

SureStep Series Dimensions & Cabling – Connectorized Bipolar Stepping Motors

Dimen- sions* (in [mm]*)	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)
A	1.39 [35.3]	1.39 [35.3]	1.67 [42.3]			2.25 [57.2]		3.39 [86.1]	2.25 [57.2]	3.39 [86.1]		
B	1.02 [25.9]	1.02 [25.9]	1.22 [31.0]			1.86 [47.2]		2.74 [69.6]	1.86 [47.2]	2.74 [69.6]		
C	Ø 0.87 [22.1]		Ø 1.50 [38.1]		Ø 2.88 [73.0]		Ø 1.50 [38.1]	Ø 2.88 [73.0]		Ø 2.88 [73.0]		
D**	Ø 0.20 [5.0]		Ø 0.25 [6.4]		Ø 0.50 [12.7]		Ø 0.25 [6.4]	Ø 0.50 [12.7]		Ø 0.50 [12.7]		
E	0.15 DP	0.15 DP	M3 x 0.5 thread 0.15 [3.8] min depth			Ø 0.20 [5.1] through		Ø 0.26 [6.6] through	Ø 0.20 [5.1] through	Ø 0.26 [6.6] through		
E ₂	M2.5 x 0.45 thread	M2.5 x 0.45 thread	M2.5 x 0.45 thread		M2 x 0.4 thread	4-40		n/a	4-40		n/a	
F ₁ **	1.02 [25.9]	1.34 [34.0]	1.58 [40.1]	1.89 [48.0]	2.34 [59.5]	2.22 [56.4]	3.10 [78.7]	2.64 [67.1]	3.10 [78.7]	2.64 [67.1]	3.82 [97.0]	5.00 [127.0]
F ₂ **	n/a		1.90 [48.3]	2.24 [56.9]	2.67 [67.8]	2.33 [59.1]	3.19 [81.0]	2.64 [67.1]	3.19 [81.0]	2.64 [67.1]	3.82 [97.0]	5.00 [127.0]
G ₁	0.375	0.375	0.375	0.375	0.411	0.906	0.906	0.906	0.906	0.906	0.906	0.906
G ₂	0.75	0.75	0.75	0.75	n/a	1.812	1.812	1.812	1.812	1.812	1.812	1.812
H ₁	0.60 [15.2]	0.60 [15.2]	0.94 [24.0]			0.81 [20.6]		1.46 [37.1]	0.81 [20.6]	1.46 [37.1]		
H ₂ **	0.51 [13.0]	0.51 [13.0]	0.51 [13]			0.51 [13]		1.13 [28.7]	0.51 [13]	1.13 [28.7]		
H ₃ ***			0.40					n/a	0.40		n/a	
J**			n/a			0.59 [15.0]		0.98 [25.0]	0.59 [15.0]		0.98 [25.0]	
K**			n/a			0.23 [5.8]		0.45 [11.4]	0.23 [5.8]		0.45 [11.4]	
L						12 [305]						
Conductor	(4) #26 AWG		(4) #20 AWG (5) #18 AWG (for W motors)						(4) #18 AWG (5) #18 AWG (for W motors)			
Connector	TE # 103653-3		Molex # 43025-0400 PXP4010/06S/6065 (for W motors)						Molex # 39-01-3042 PXP4010/06S/6065 (for W motors)			
Pin	TE # 1-104505-3 (LOOSE)		Molex # 43030-0007 Socket: SA3347 (for W motors)						Molex # 39-00-0039 Socket: SA3347 (for W motors)			

* mm dimensions are for reference purposes only.

** Dimension H₂ applies only to dual-shaft (D) and encoder (E) motors.

Dimension D (shaft diameter) is the same for both front and rear shafts of dual-shaft (D) and encoder (E) motors.

Dimensions J & K do NOT apply to rear shafts of dual-shaft (D) and encoder (E) motors (all rear shafts are round style).

Dimension F₂ applies to IP65 (W) motors only.

*** Dimension H₃ applies only to "E" models with the encoder pre-mounted.

SureStep[®] Stepping System Accessories

SureStep[®] Microstepping Drives Accessories

Braking Accessories

As a load rapidly decelerates from a high speed, much of the kinetic energy of that load is transferred back to the motor. This energy is then pushed back to the drive and power supply, resulting in increased system voltage. If there is enough overhauling power on the motor, the DC voltage will go above the drive and/or power supply limits. In general, the more torque the motor is capable of producing then the more energy it can push back into the drive.

When using a regulated/switching power supply, this can trip the overvoltage protection of the power supply or drive, and cause it to shut down.

To solve this problem, AutomationDirect offers a regeneration clamp and a braking resistor as optional accessories. The regen clamp has a built-in 50W braking resistor. For additional braking power (larger overhauling loads), an optional 100W braking resistor is also available.

Regeneration Clamp Description

As with most stepper systems, a clamp circuit is often required to limit increased power supply bus voltage when the motor is decelerating under load. This is commonly referred to as "regeneration," which is what happens when DC motors are driven by their load. During regeneration, the DC motor can produce enough voltage to actually exceed the input power supply voltage.

With a Regen Clamp, one or more stepper drives can be protected from "Over Voltage" conditions by placing the clamp module between the power supply and the drive. The clamp tracks the input power supply, and will operate from 24 to 80 volts. No adjustments are needed.

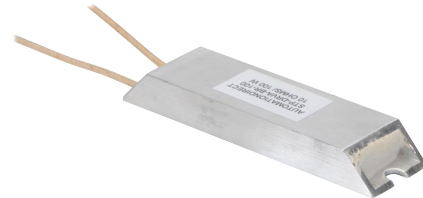
The Regen Clamp is designed to handle a wide range of conditions. The voltage input matches the needs of the SureStep stepper drives by providing 24 to 80 VDC capabilities, and external power resistors can be added for even greater continuous power requirements. The clamp modules are small and compact to minimize impact on the system design. More than one stepper drive can be connected to the clamp module with the potential to handle an entire multi-axis system.

SureStep Damper

A step motor inertia damper can smooth out steps in a typical step motor resulting in a quieter and smoother motion when rotating between steps. Reducing the resonance and possible micro oscillations when moving from step to step is the main purpose of a "hockey puck" style damper, but it can also be used as a hand wheel to directly rotate the position of the rotor when power is removed from the motor. The damper is a properly sized machined piece of aluminum encased in plastic. It is sized and weighted for general damping of the respective frame size motor.



Regeneration Clamp



Braking Resistor

Regeneration Clamp Features

- Built-in 50W power resistor for more continuous current handling (optional 100W resistor is also available)
- Mounted on a heat sink
- Voltage range: 24–80 VDC; no user adjustments required
- Power: 50W continuous; 800W peak
- Wire connection: 6-pin screw terminal block; 12–18 AWG wire.
- Indicators (LED):
Green = power supply voltage is present
Red = clamp is operating (usually when stepper is decelerating)
- Protection: The external power supply is internally connected to an "Input Diode" in the regen clamp that protects the power supply from high regeneration voltages. This diode protects the system from connecting the power supply in reverse. If the clamp circuit fails, the diode will continue to protect the power supply from over-voltage.
- RoHS

SureStep Series Specifications – Microstepping Drives Optional Accessories

Part Number	Price	Description
STP-DRVA-RC-050 *	\$90.00	Regen Clamp: use with DC-powered stepper & servo drives; 50W, 24–80 VDC
STP-DRVA-BR-100	\$65.00	Braking Resistor: use with STP-DRVA-RC-050 regen clamp; 100W, 10Ω
STP-MTRA-17DMP	\$13.00	SureStep damper, metal body. For use with NEMA 17 stepper motors with 5mm shafts. Mounting set screw included.
STP-MTRA-23DMP	\$30.00	SureStep damper, metal body. For use with NEMA 23 stepper motors with 1/4 inch shafts. Mounting set screw included.

* Do not use the regeneration clamp in an atmosphere containing corrosive gases.



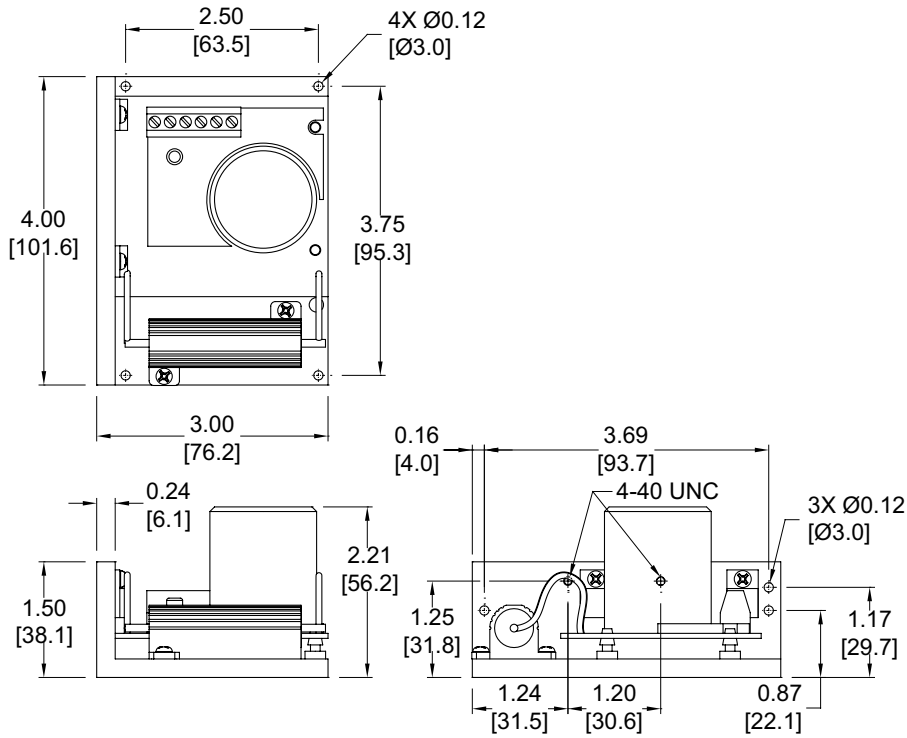
Damper

SureStep[®] Stepping System Accessories

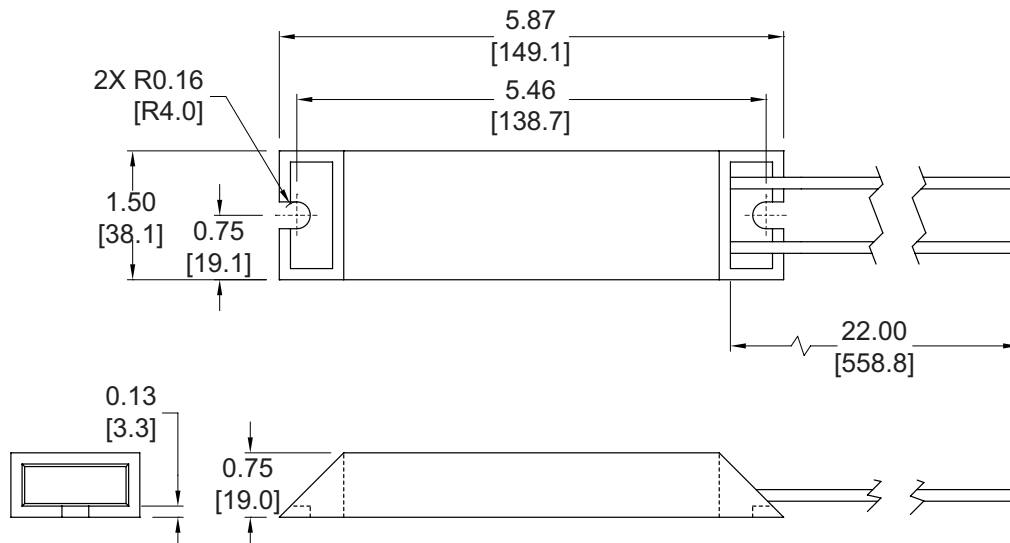
SureStep[®] Microstepping Drives Accessories

Dimensions = in [mm]

STP-DRVA-RC-050



STP-DRVA-BR-100





Stepping System Cables

SureStep® Cables

SureStep Series – Stepping System Cables					
Cable	Price	Purpose	Length	Use With	Cable End Connectors
STP-EXT-006	\$10.50	motor to drive extension	6 ft	STP-MTR-xxxx(x)	pigtail / Molex 43020-0401 connector
STP-EXT-010	\$12.00		10 ft		
STP-EXT-020	\$15.50		20 ft		
STP-EXTH-006	\$22.00		6 ft	STP-MTRH-xxxx(x)	pigtail / Molex 39-01-2041 connector
STP-EXTH-010	\$26.00		10 ft		
STP-EXTH-020	\$30.00		20 ft		
STP-EXTHW-006	\$44.00		6 ft	STP-MTRHW-xxxx(x)	Bulgin # PXP4011/06P/6065
STP-EXTHW-010	\$49.00		10 ft		
STP-EXTHW-020	\$61.00		20 ft		
STP-EXTL-006	\$10.00		6 ft	STP-MTRL-xxxx(x)	pigtail / Molex 105308-22004 connector
STP-EXTL-010	\$12.00		10 ft		
STP-EXTL-020	\$15.00		20 ft		
STP-EXTW-006	\$44.00		6 ft	STP-MTRW-xxxx(x)	Bulgin # PXP4011/06P/6065
STP-EXTW-010	\$49.00		10 ft		
STP-EXTW-020	\$61.00		20 ft		
STP-232RJ11-CBL *	\$9.25	programming/communication	10 ft	STP-DRV-4850 STP-DRV-80100	DB9 female / RJ11(6P4C)
STP-232HD15-CBL-2 **	\$11.00	communication	6.6 ft	STP-DRV-4850 STP-DRV-80100 DL06, D2-250-1, D2-260	HD 15-pin male / RJ12 6-pin plug
STP-232RJ12-CBL-2 **	\$6.25	communication	6.6 ft	STP-DRV-4850 STP-DRV-80100 DL05, CLICK	RJ12 6-pin plug / RJ12 6-pin plug
STP-CBL-CA6	\$16.50	control cable	6 ft	Standard STP-MTRD-x integrated motor/drives	11-pin / pigtail
STP-CBL-CA10	\$19.50	control cable	10 ft		11-pin / pigtail
STP-CBL-CA20	\$28.00	control cable	20 ft		11-pin / pigtail
STP-CBL-EA6	\$16.50	encoder cable	6 ft	STP-MTRD-xxxxE STP-MTRA-ENC1 STP-MTRA-ENC3 STP-MTRA-ENC5 STP-MTRA-ENC7 (for line driver encoders)	10-pin / pigtail
STP-CBL-EA10	\$19.50	encoder cable	10 ft		10-pin / pigtail
STP-CBL-EA20	\$28.00	encoder cable	20 ft		10-pin / pigtail
STP-CBL-EB3	\$24.00	encoder cable	3 ft	STP-MTRA-ENC9 STP-MTRA-ENC10 (for both line driver and push-pull (totem) encod- ers)	17-pin / pigtail
STP-CBL-EB6	\$39.00	encoder cable	6 ft		17-pin / pigtail
STP-CBL-EB10	\$59.00	encoder cable	10 ft		17-pin / pigtail
STP-CBL-EB20	\$109.00	encoder cable	20 ft		17-pin / pigtail
STP-CBL-ED6	\$16.00	encoder cable	6 ft	STP-MTRA-ENC2 STP-MTRA-ENC4 STP-MTRA-ENC6 STP-MTRA-ENC8 (for push-pull (totem) encoders)	5-pin / pigtail
STP-CBL-ED10	\$19.00	encoder cable	10 ft		5-pin / pigtail
STP-CBL-ED20	\$28.00	encoder cable	20 ft		5-pin / pigtail
STP-CON-1	\$15.50	replacement connector kit	n/a	STP-DRV-6575	-
STP-CON-2	\$15.50	replacement connector kit	n/a	STP-DRV-4850 & 80100	-
STP-CON-3	\$30.00	replacement connector kit	n/a	STP-MTRD-xxxxR	-
STP-485DB9-CBL-2	\$35.50	4-wire programming cable	6.5 ft	STP-MTRD-xxxxR	DB9 / Phoenix 5-conductor plug
STP-USBENC-CBL-1	\$38.00	USB programming cable	3 ft	STP-MTRA-ENCx	17-pin / USB

* Programming/communication cable STP-232RJ11-CBL is available for spare or replacement purposes.
(One cable is included with each software programmable drive.)

** Refer to the ZIPLinks Wiring Solutions section for complete information regarding cables STP-232HD15-CBL-2 and STP-232RJ12-CBL-2.



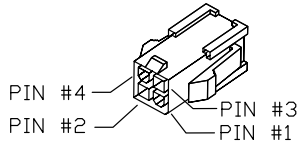
Stepping System Cables

SureStep® Cables

STP-EXT(x)-0xx Extension Cable Wiring Diagram

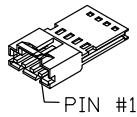
EXT & EXTH CABLES

PIN#	COLOR
1	RED
2	WHITE
3	GREEN
4	BLACK



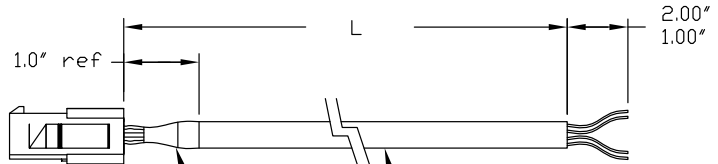
EXTL CABLES

PIN#	COLOR
1	RED
2	WHITE
3	GREEN
4	BLACK



CONNECTORS:

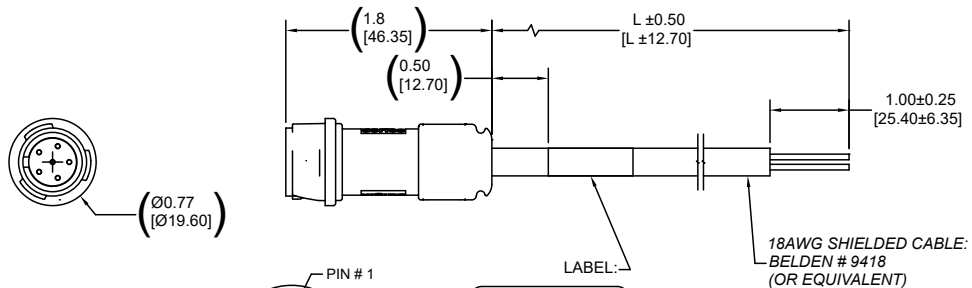
EXT: Molex #39-01-2041
 EXTH: Molex #43020-2041
 EXTL: TE #103653-3



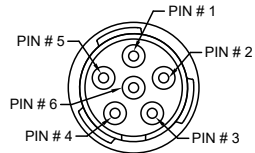
UNSHIELDED CABLE:

24AWG = EXTL cables
 20AWG = EXT cables
 18AWG = EXTH cables

STP-EXTW-0xx and STP-EXTHW-0xx Extension Cable Wiring Diagram



PIN OUT CONNECTION		
PIN #	COLOR	PHASE
1	RED	A+
2	WHITE	A-
3	GREEN	B+
4	BLACK	B-
5	GROUND	GROUND
6	N/A	N/A

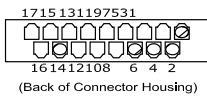
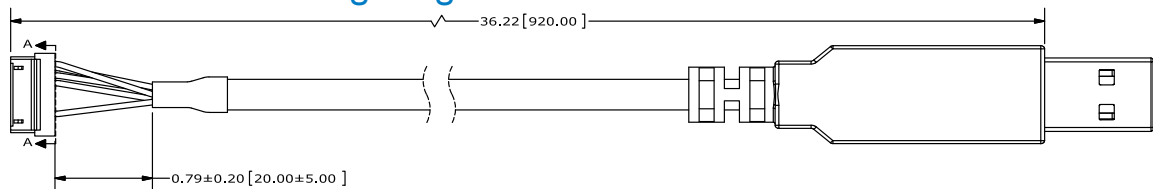


VIEW FROM PIN CONNECTION
 Connector: Bulgin # PXP4011/06P/6065

LABEL: STP-EXTW-0XX
 or
 STP-EXTHW-0XX

18AWG SHIELDED CABLE:
 BELDEN #9418
 (OR EQUIVALENT)

STP-USBENC-CBL-1 Wiring Diagram



(Back of Connector Housing)

Connector Pinout		
#FunctionColor	Pin	
TX_ENC+Yellow	1	
RX_ENC+Orange	2	
GNDBlack	4	
+5VRed	6	
MCLRGreen	14	

