

Soft Shift® Size 2EP

Part Number: 191995-0XX

All products are RoHS Compliant

LINEAR Soft Shift®

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously ¹	∞	100	36	7
Maximum ON Time (sec) for single pulse ²	∞	162	44	8
Watts (@ 20°C)	7	14	28	70
Ampere Turns (@ 20°C)	425	602	849	1350

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
24	0.68	130	2.2	3.2	4.5	7.1
25	1.16	174	2.8	4.0	5.7	9.0
26	1.96	231	3.6	5.1	7.2	11.5
27	3.16	296	4.5	6.4	9.0	14.4
28	5.10	378	5.7	8.1	11.5	18.2
29	6.94	423	7.0	9.9	13.9	22.0
30	11.03	530	8.8	12.5	17.7	28.0
31	16.85	649	11.0	15.6	22.0	35.0
32	28.15	858	13.9	19.8	28.0	44.0
33	42.75	1036	17.5	25.0	35.0	56.0
34	69.56	1312	23.0	32.0	45.0	72.0
35	112.00	1674	29.0	40.0	57.0	91.0

¹ Continuously pulsed at stated watts and duty cycle

² Single pulse at stated watts (with coil at ambient room temperature 20°C)

³ Other coil awg sizes available — please consult factory

⁴ Reference number of turns

Specifications

Stroke	0.160 ± 0.030 inches (4.06 ± 0.762 mm)
Dielectric Strength	1000 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminum plate measuring 3 ³ / ₈ " square by 1 ¹ / ₈ " thick
Coil Resistance	±5% tolerance on all coil awg
Spring Rate	1.09 lb/in; 0.125 lb ±30% preload reference
Weight	2.5 oz (70.9 gms)

How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 9 VDC, specify 191995-027).

Please see www.johnsonelectric.com for our list of stock products available through distribution.

All specifications subject to change without notice.

Ledex® Solenoids



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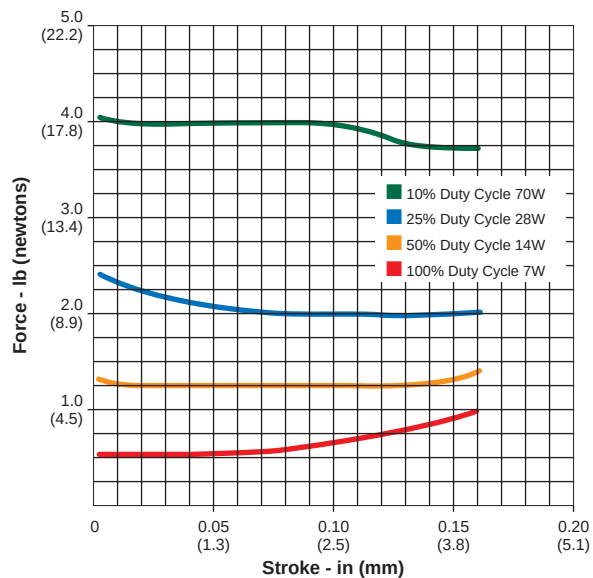
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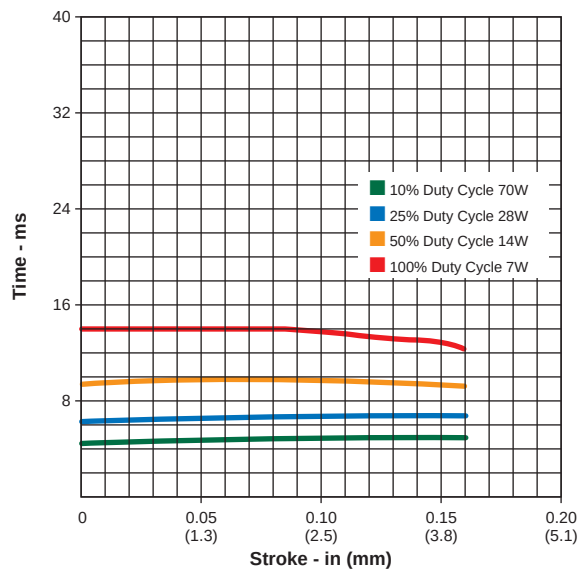
Soft Shift® Size 2EP

Typical Force @ 20°C



Force values for reference only.

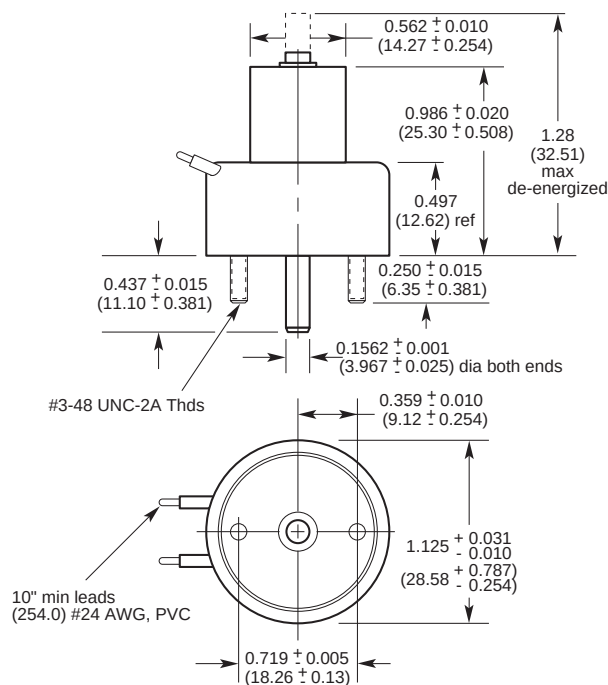
Typical Speed @ No Load, 20°C



Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Soft Shift® Size 3EP

Part Number: 191994-0XX

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LINEAR Soft Shift®

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously ¹	∞	100	36	8
Maximum ON Time (sec) for single pulse ²	∞	162	44	9
Watts (@ 20°C)	9	18	36	90
Ampere Turns (@ 20°C)	535	756	1070	1690

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	0.70	145	2.6	3.7	5.2	8.2
24	1.18	192	3.3	4.6	6.6	10.4
25	1.97	252	4.2	5.9	8.4	13.2
26	3.26	328	5.3	7.5	10.6	16.8
27	5.04	405	6.7	9.4	13.3	21.0
28	8.02	510	8.4	11.9	16.8	27.0
29	12.21	627	10.4	14.7	21.0	33.0
30	19.20	780	13.2	18.6	26.0	42.0
31	31.84	1008	16.9	24.0	34.0	53.0
32	46.97	1215	21.0	29.0	41.0	65.0
33	75.30	1530	26.0	37.0	53.0	83.0

¹ Continuously pulsed at stated watts and duty cycle

² Single pulse at stated watts (with coil at ambient room temperature 20°C)

³ Other coil awg sizes available — please consult factory

⁴ Reference number of turns

Specifications

Stroke	0.250 ± 0.030 inches (6.35 ± 0.762 mm)
Dielectric Strength	1000 VRMS (23-27 awg); 1200 VRMS (28-33 awg)
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminum plate measuring 4 ⁵ / ₈ " square by 1 ¹ / ₈ " thick
Coil Resistance	±5% tolerance on all coil awg
Spring Rate	0.73 lb/in; 0.22 lb ±30% preload reference
Weight	4 oz (113.4 gms)

How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 13.3 VDC, specify 191994-027).

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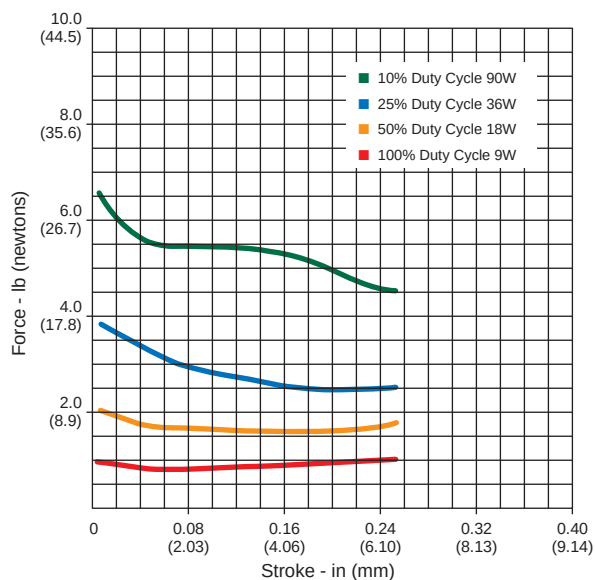
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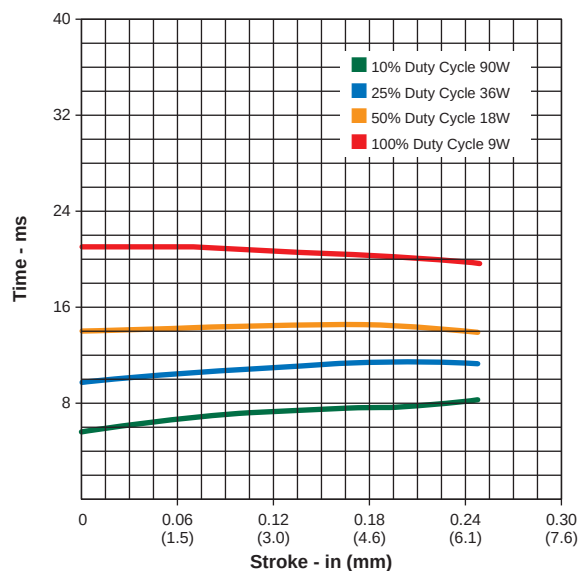
Soft Shift® Size 3EP

Typical Force @ 20°C



Force values for reference only.

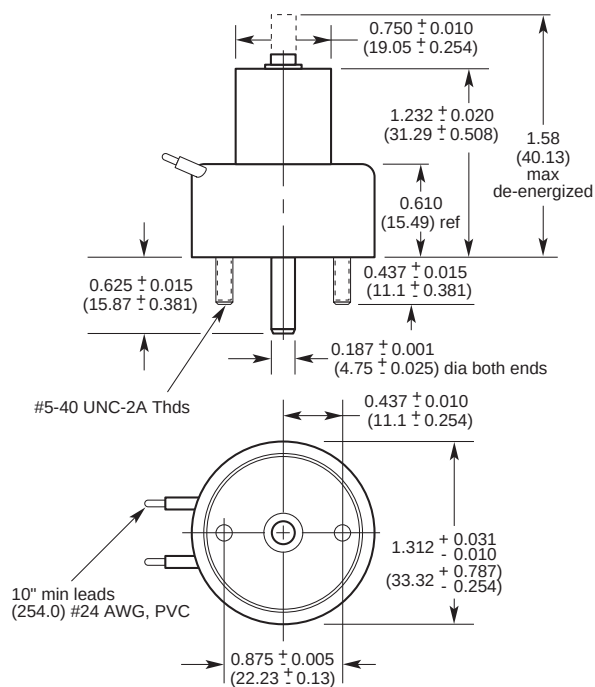
Typical Speed @ No Load, 20°C



Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Soft Shift® Size 4EP

Part Number: 191993-0XX

All products are RoHS Compliant

LINEAR Soft Shift®

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously ¹	∞	100	36	9
Maximum ON Time (sec) for single pulse ²	∞	162	44	10
Watts (@ 20°C)	12.5	25	50	125
Ampere Turns (@ 20°C)	714	1000	1425	2250

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	1.59	266	4.3	6.0	8.5	13.4
24	2.20	301	5.2	7.3	10.4	16.4
25	3.54	384	6.6	9.2	13.1	21.0
26	5.67	486	8.3	11.7	16.6	26.0
27	8.76	600	10.4	14.6	21.0	33.0
28	13.80	748	13.2	18.5	26.0	42.0
29	22.60	975	16.6	23.0	33.0	52.0
30	34.80	1190	21.0	29.0	42.0	66.0
31	56.70	1520	27.0	37.0	53.0	84.0
32	88.30	1908	33.0	46.0	66.0	104.0
33	138.00	2360	42.0	59.0	83.0	132.0

¹ Continuously pulsed at stated watts and duty cycle

² Single pulse at stated watts (with coil at ambient room temperature 20°C)

³ Other coil awg sizes available — please consult factory

⁴ Reference number of turns

Specifications

Stroke	0.300 ± 0.030 inches (7.62 ± 0.762 mm)
Dielectric Strength	1000 VRMS (23-24 awg); 1200 VRMS (25-33 awg)
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminum plate measuring 6 1/4" square by 1/8" thick
Coil Resistance	±5% tolerance on all coil awg
Spring Rate	1.41 lb/in; 0.35 lb ±30% preload reference
Weight	7 oz (198.4 gms)

How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 21 VDC, specify 191993-027).

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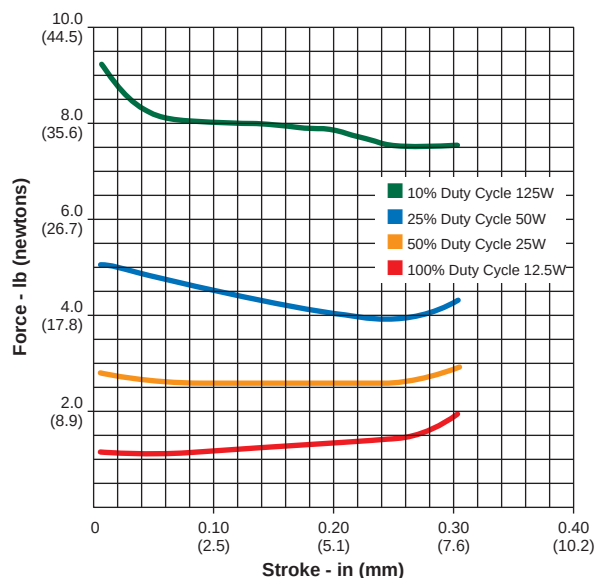
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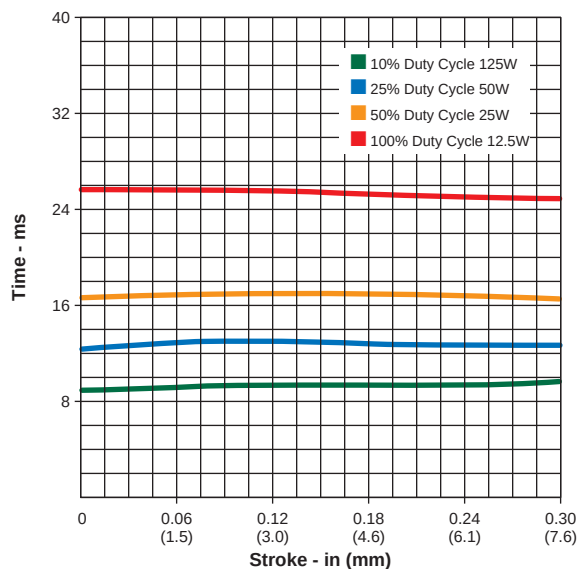
Soft Shift® Size 4EP

Typical Force @ 20°C



Force values for reference only.

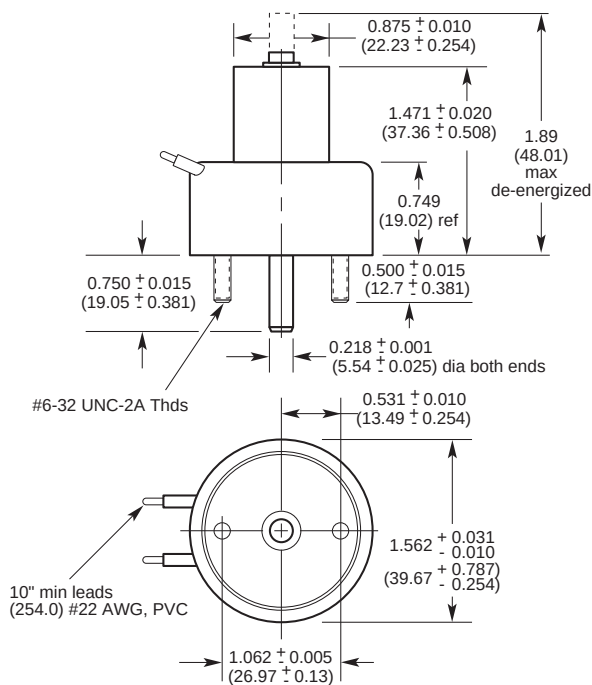
Typical Speed @ No Load, 20°C



Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Soft Shift® Size 5EP

Part Number: 193015-0XX

All products are RoHS Compliant

LINEAR Soft Shift®

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously ¹	∞	100	36	10
Maximum ON Time (sec) for single pulse ²	∞	160	44	13
Watts (@ 20°C)	21	42	84	210
Ampere Turns (@ 20°C)	1015	1440	2030	3210

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	2.70	384	7.2	10.1	14.3	23.0
24	4.30	486	9.0	12.7	18.0	28.0
25	6.66	590	11.5	16.2	23.0	36.0
26	10.30	737	14.0	20.0	28.0	44.0
27	15.70	900	17.7	25.0	35.0	56.0
28	26.60	1190	23.0	32.0	45.0	72.0
29	38.00	1380	28.0	40.0	56.0	89.0
30	62.10	1768	36.0	51.0	71.0	113.0
31	96.10	2166	45.0	64.0	90.0	143.0
32	157.00	2816	57.0	80.0	113.0	179.0
33	241.00	3432	71.0	101.0	143.0	226.0

¹ Continuously pulsed at stated watts and duty cycle

² Single pulse at stated watts (with coil at ambient room temperature 20°C)

³ Other coil awg sizes available — please consult factory

⁴ Reference number of turns

Specifications

Stroke	0.400 ± 0.030 inches (10.16 ± 0.762 mm)
Dielectric Strength	1000 VRMS (23 awg); 1200 VRMS (24-33 awg)
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminum plate measuring 7½" square by ⅛" thick
Coil Resistance	±5% tolerance on all coil awg
Spring Rate	4.41 lb/in; 0.45 lb ±30% preload reference
Weight	12 oz (340.2 gms)

How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 35 VDC, specify 193015-027).

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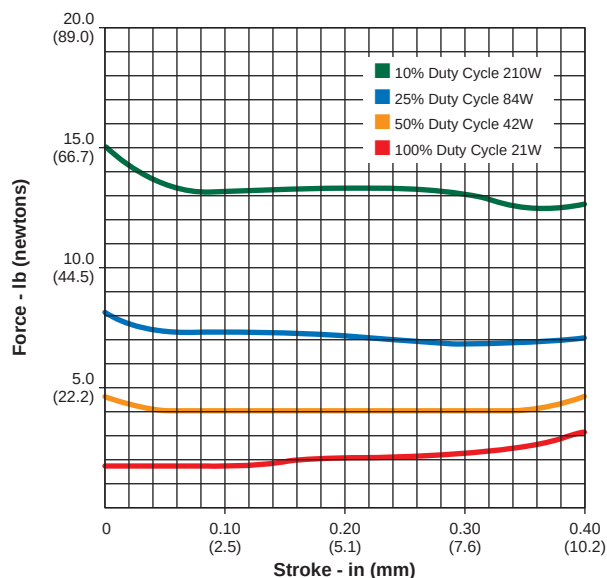
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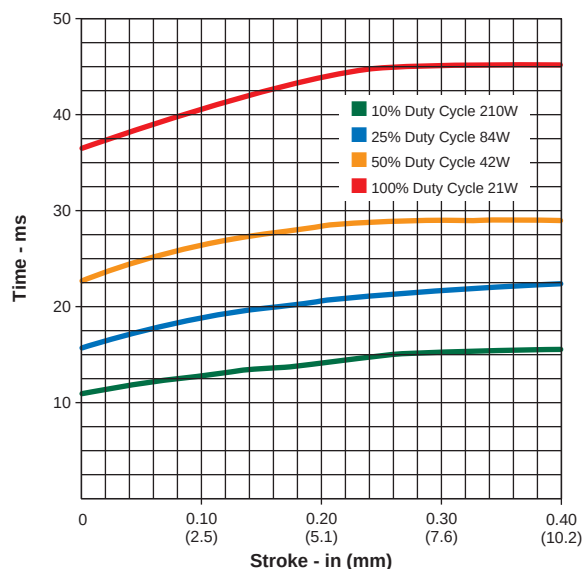
Soft Shift® Size 5EP

Typical Force @ 20°C



Force values for reference only.

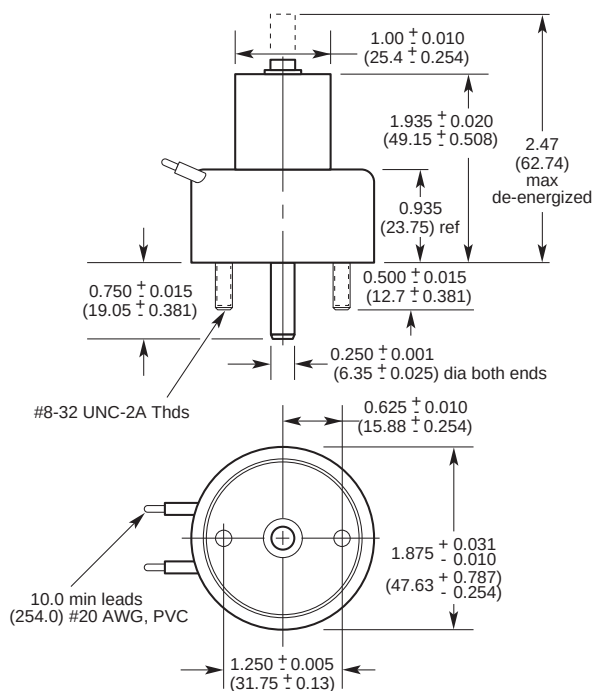
Typical Speed @ No Load, 20°C



Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Soft Shift® Size 6EP

Part Number: 192907-0XX

All products are RoHS Compliant

LINEAR Soft Shift®

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously ¹	∞	87	36	13
Maximum ON Time (sec) for single pulse ²	∞	140	44	16
Watts (@ 20°C)	32	64	128	320
Ampere Turns (@ 20°C)	1480	2080	2940	4620

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	4.69	567	12.3	17.2	24.0	38.0
24	7.43	710	15.5	22.0	31.0	48.0
25	12.90	960	19.9	28.0	39.0	62.0
26	19.70	1170	25.0	35.0	49.0	78.0
27	32.00	1500	32.0	44.0	63.0	99.0
28	51.60	1904	40.0	56.0	79.0	125.0
29	74.40	2232	49.0	69.0	98.0	154.0
30	126.00	2940	63.0	89.0	126.0	198.0
31	195.00	3611	80.0	112.0	159.0	250.0
32	288.00	4350	98.0	138.0	195.0	306.0
33	427.00	5010	126.0	177.0	251.0	394.0

¹ Continuously pulsed at stated watts and duty cycle

² Single pulse at stated watts (with coil at ambient room temperature 20°C)

³ Other coil awg sizes available — please consult factory

⁴ Reference number of turns

Specifications

Stroke	0.420 ± 0.030 inches (10.67 ± 0.762 mm)
Dielectric Strength	1200 VRMS (23-31 awg); 1500 VRMS (32-33 awg)
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminum plate measuring 12 ³ / ₈ " square by 1/8" thick
Coil Resistance	±5% tolerance on all coil awg
Spring Rate	4.74 lb/in; 1.08 lb ±30% preload reference
Weight	1 lb 7 oz (652 gms)

How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 63 VDC, specify 192907-027).

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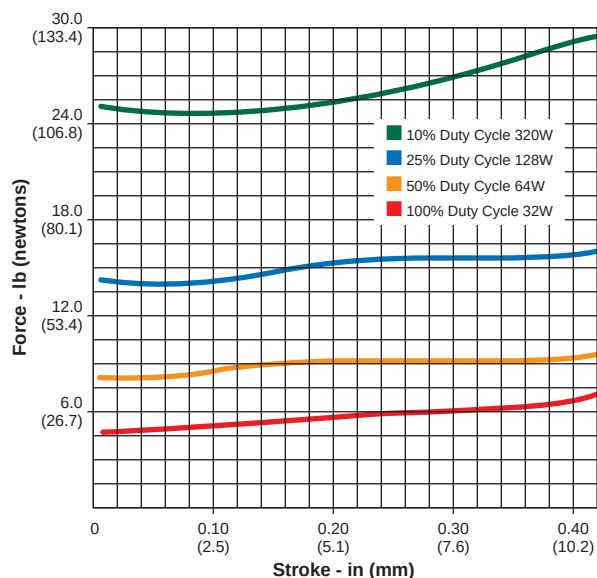
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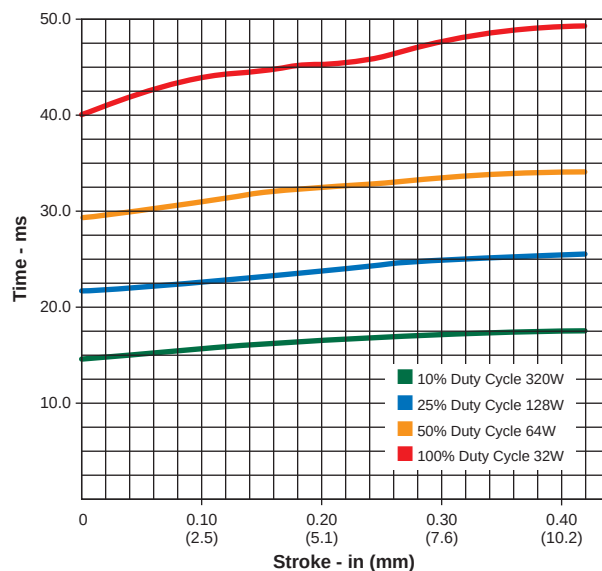
Soft Shift® Size 6EP

Typical Force @ 20°C



Force values for reference only.

Typical Speed @ No Load, 20°C



Dimensions

Inches (mm)

All solenoids are illustrated in energized state

