

Low Profile Size 0EC — Push or Pull

LINEAR Low Profile

Medium Stroke, Conical Face

Part Number: 174534-0XX

All products are RoHS Compliant

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)	4.5	9	18	45
Ampere Turns (@ 20°C)	285	403	570	901

Specifications

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 2" square by 1/8" thick
Coil Resistance	±10% tolerance on all coil awg sizes
Weight	0.875 oz (24.8 gms)
Holding Force	1.7 lb (7.6 N) @ 105°C

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
26	0.50	90	1.6	2.3	3.2	5.1
27	0.97	136	2.0	2.8	3.9	6.3
28	1.33	152	2.6	3.7	5.1	8.1
29	2.40	215	3.2	4.4	6.2	9.9
30	3.29	240	4.1	5.7	8.0	12.7
31	5.61	324	5.0	7.1	9.9	15.8
32	9.09	420	6.3	8.9	12.4	19.7
33	14.95	544	8.0	11.3	15.7	25.0
34	24.06	684	10.2	14.4	20.0	32.0
35	37.10	840	12.8	18.1	25.0	40.0
36	58.51	1056	16.1	23.0	32.0	50.0
37	78.70	1109	19.8	28.0	39.0	62.0
38	123.00	1370	25.0	35.0	49.0	78.0

- 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

How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 3.2 VDC, specify 174534-026).

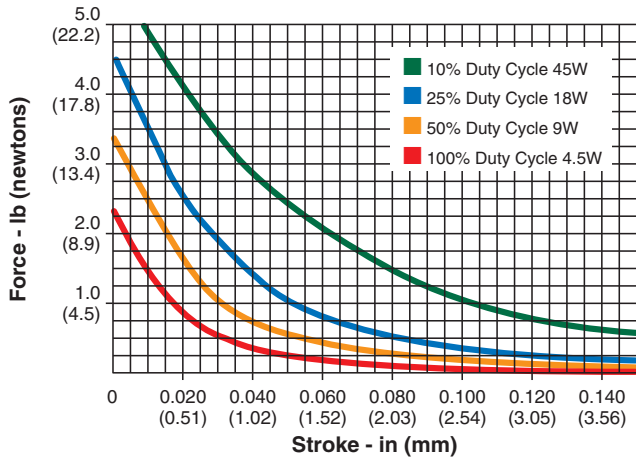
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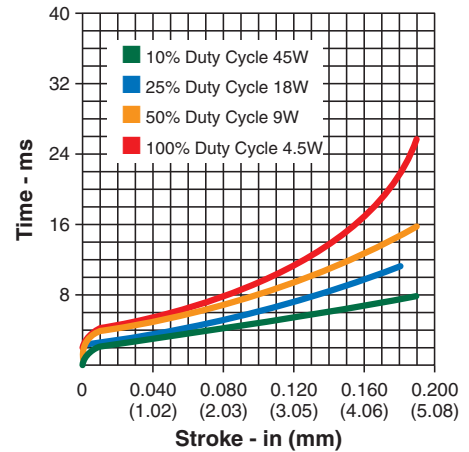
All specifications subject to change without notice.

Low Profile Size 0EC — Push or Pull

Typical Force @ 20°C



Typical Speed @ No Load, 20°C

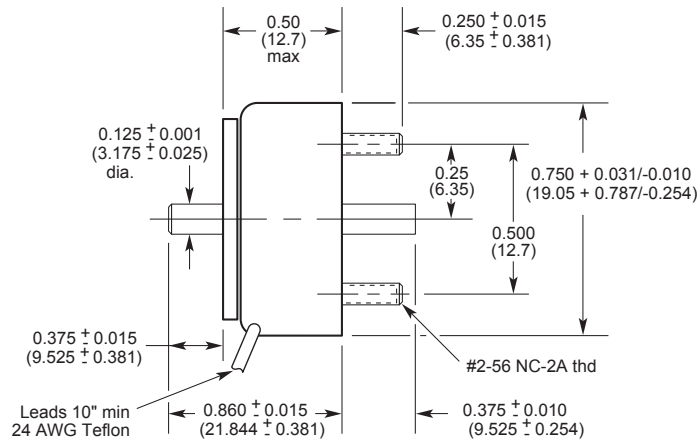


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 1EC — Push or Pull

LINEAR Low Profile

Size 1EC Medium Stroke, Conical Face

Part Number: 123421-0XX

All products are RoHS Compliant

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)	5	10	20	50
Ampere Turns (@ 20°C)	340	480	680	1075

Specifications

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" square by 1/8" thick
Coil Resistance	25-35 awg, ±5%; 36 awg, ±10%
Weight	1.50 oz (42.5 gms)
Holding Force	5.4 lb (24.0 N) @ 105°C

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
25	0.83	140	2.1	2.9	4.1	6.5
26	1.38	186	2.6	3.7	5.2	8.2
27	1.91	210	3.2	4.5	6.3	10.1
28	3.17	273	4.1	5.7	8.1	12.8
29	5.17	352	5.1	7.2	10.2	16.2
30	8.25	441	6.5	9.2	13.0	21.0
31	12.95	550	8.2	11.6	16.4	26.0
32	20.71	682	10.6	14.9	21.0	34.0
33	30.60	828	12.7	18.2	26.0	41.0
34	50.95	1078	16.5	23.0	33.0	52.0
35	83.92	1392	21.0	30.0	42.0	67.0
36	112.00	1500	26.0	37.0	52.0	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

How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 6.3 VDC, specify 124910-027).

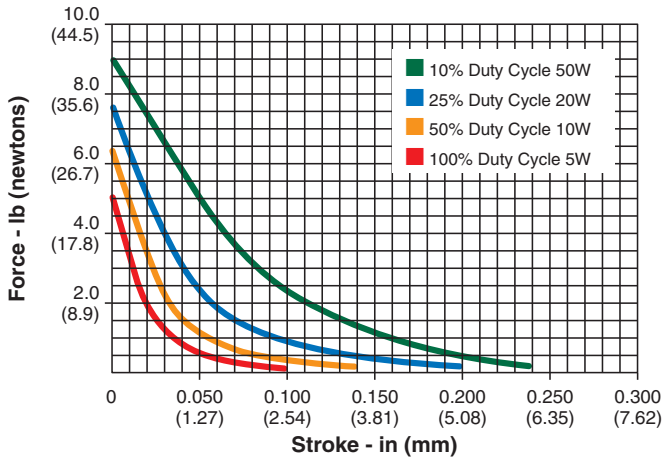
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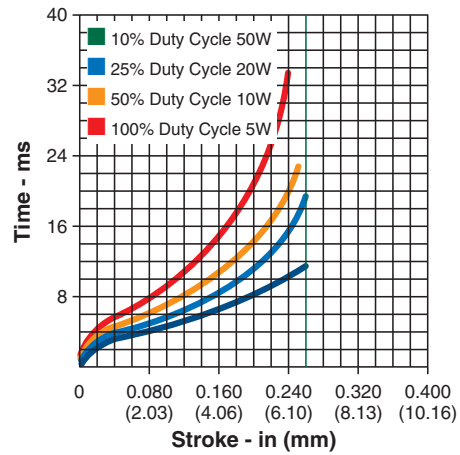


Low Profile Size 1EC — Push or Pull

Typical Force @ 20°C



Typical Speed @ No Load, 20°C

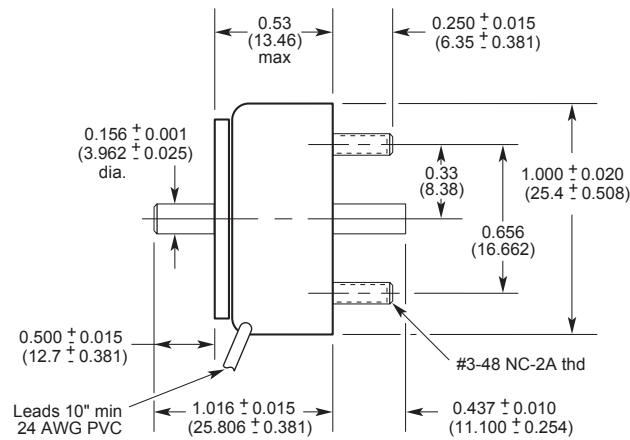


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 2EF/2EC — Push or Pull

LINEAR Low Profile

Size 2EF Short Stroke, Flat Face

Part Number: 124911-0XX

Size 2EC Medium Stroke, Conical Face

Part Number: 123422-0XX

All products are RoHS Compliant

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



Battery Powered

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



High Speed

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

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 1/8" thick
Coil Resistance	24-33 awg, ±5%
Weight	2.25 oz (63.8 gms)
Holding Force 2EF	12.0 lb (53.4 N) @ 105°C
Holding Force 2EC	5.7 lb (25.4 N) @ 105°C

How to Order

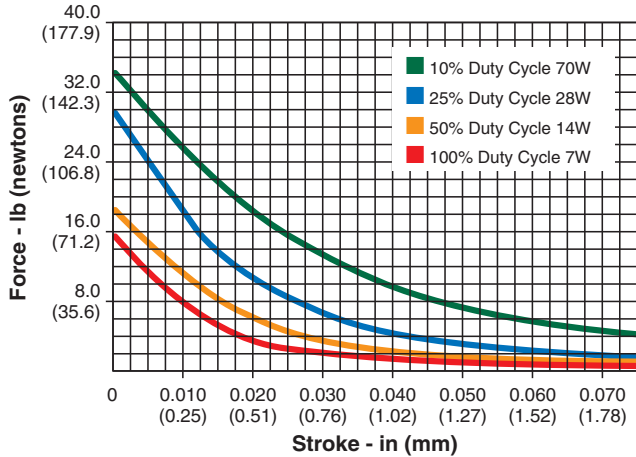
Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 9.0 VDC, specify 124911-027).

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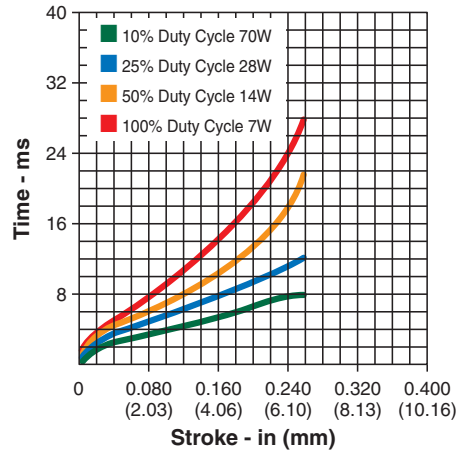
All specifications subject to change without notice.

Low Profile Size 2EF/2EC — Push or Pull

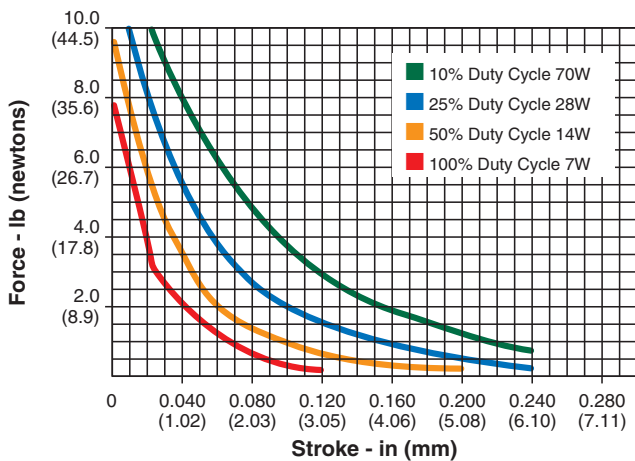
Size 2EF— Typical Force @ 20°C



Size 2EF and 2EC – Typical Speed @ No Load, 20°C



Size 2EC — Typical Force @ 20°C

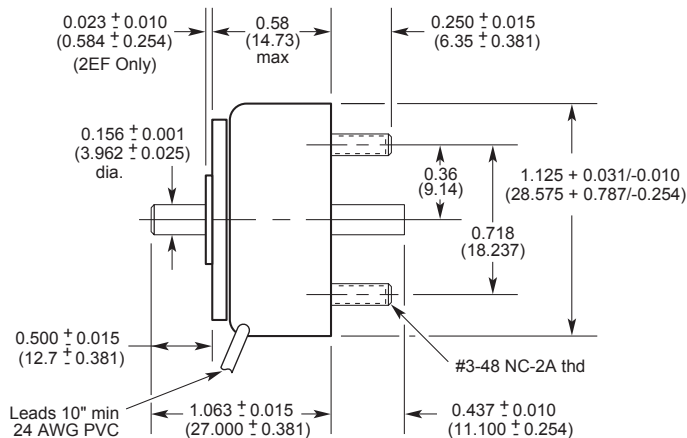


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 2EF/2EC — Push or Pull

LINEAR Low Profile

Size 2EF Short Stroke, Flat Face

Part Number: 124911-0XX

Size 2EC Medium Stroke, Conical Face

Part Number: 123422-0XX

All products are RoHS Compliant

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



Battery Powered

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



High Speed

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

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	24-33 awg, ±5%
Weight	2.25 oz (63.8 gms)
Holding Force 2EF	12.0 lb (53.4 N) @ 105°C
Holding Force 2EC	5.7 lb (25.4 N) @ 105°C

How to Order

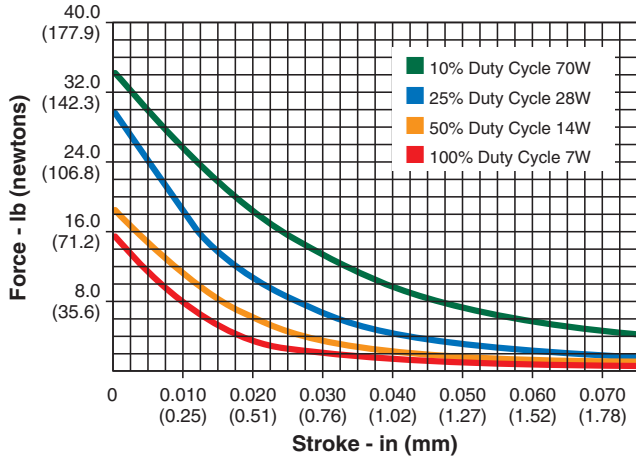
Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 9.0 VDC, specify 124911-027).

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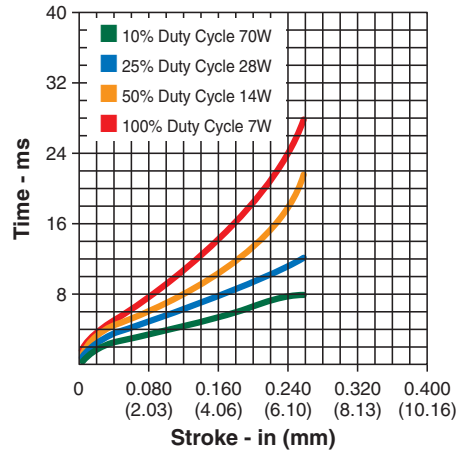
All specifications subject to change without notice.

Low Profile Size 2EF/2EC — Push or Pull

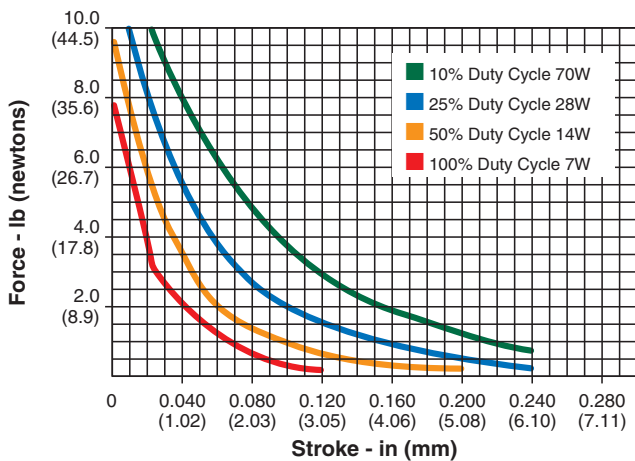
Size 2EF— Typical Force @ 20°C



Size 2EF and 2EC – Typical Speed @ No Load, 20°C



Size 2EC — Typical Force @ 20°C

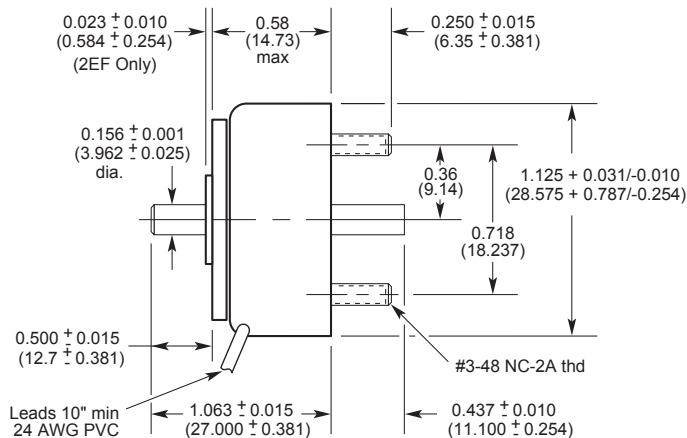


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 3EF/3EC — Push or Pull

LINEAR Low Profile

Size 3EF Short Stroke, Flat Face

Part Number: 124912-0XX

All products are RoHS Compliant

Size 3EC Medium Stroke, Conical Face

Part Number: 123423-0XX

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

Dielectric Strength	23-27 awg, 1000 VRMS ; 28-33 awg, 1200 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 4 ⁵ / ₈ " square by 1/8" thick
Coil Resistance	23-33 awg, ±5%
Weight	3.75 oz (106.3 gms)
Holding Force 3EF	26.0 lb (115.6 N) @ 105°C
Holding Force 3EC	12.0 lb (53.4 N) @ 105°C

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 124912-027).

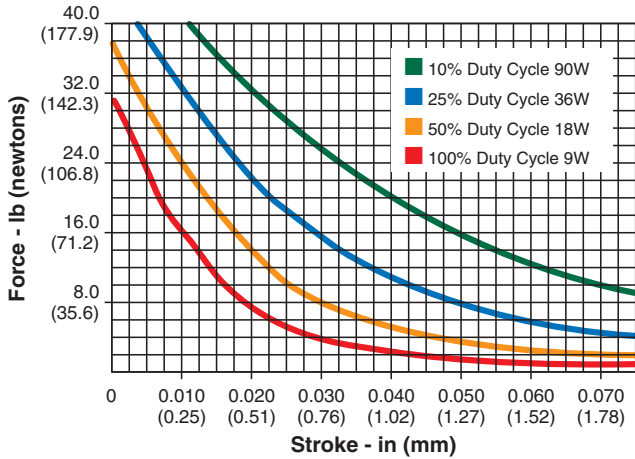
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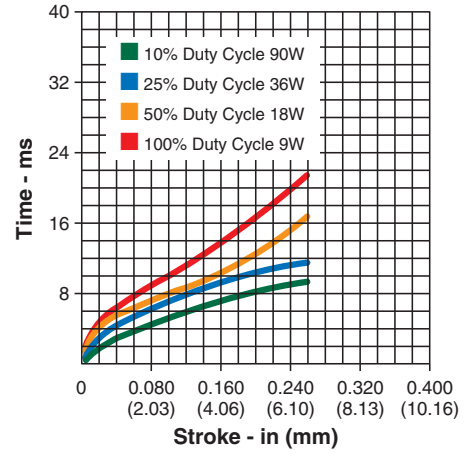
All specifications subject to change without notice.

Low Profile Size 3EF/3EC — Push or Pull

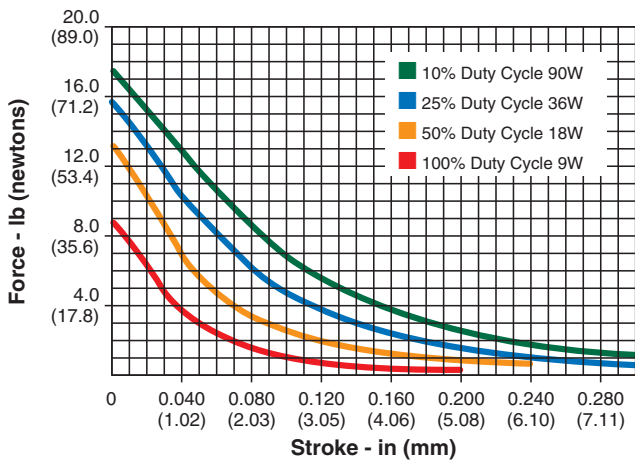
Size 3EF— Typical Force @ 20°C



Size 3EF and 3EC – Typical Speed @ No Load, 20°C



Size 3EC— Typical Force @ 20°C

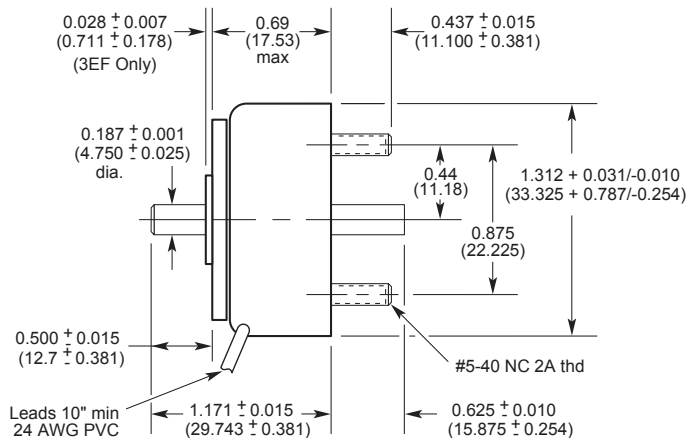


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 3EF/3EC — Push or Pull

LINEAR Low Profile

Size 3EF Short Stroke, Flat Face

Part Number: 124912-0XX

Size 3EC Medium Stroke, Conical Face

Part Number: 123423-0XX

All products are RoHS Compliant

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

Dielectric Strength	23-27 awg, 1000 VRMS ; 28-33 awg, 1200 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 4 ⁵ / ₈ " square by 1/8" thick
Coil Resistance	23-33 awg, ±5%
Weight	3.75 oz (106.3 gms)
Holding Force 3EF	26.0 lb (115.6 N) @ 105°C
Holding Force 3EC	12.0 lb (53.4 N) @ 105°C

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 124912-027).

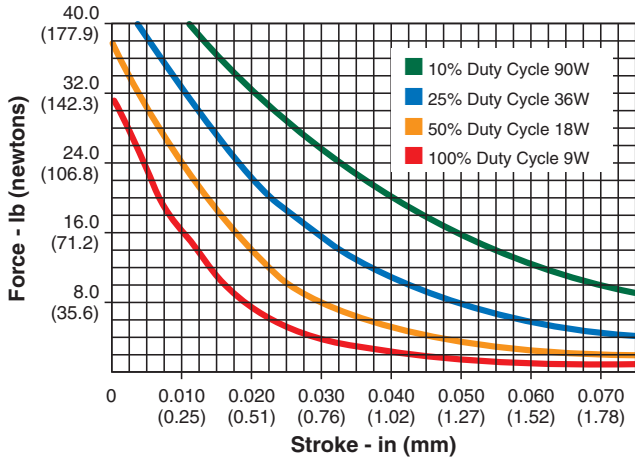
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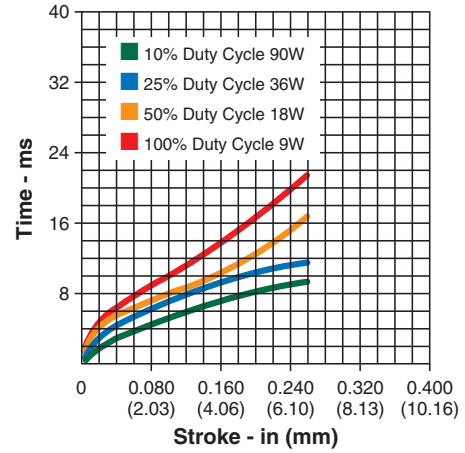


Low Profile Size 3EF/3EC — Push or Pull

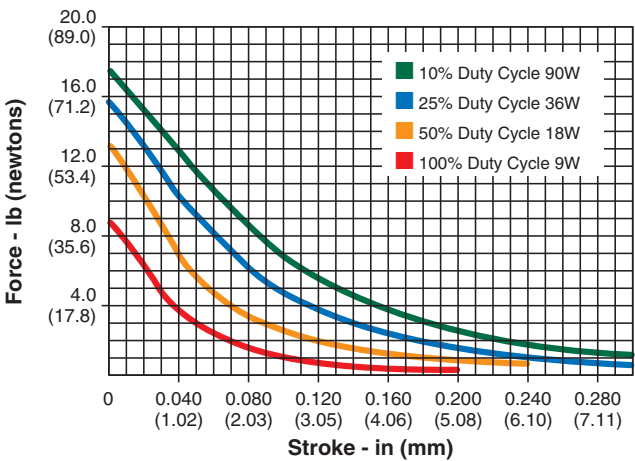
Size 3EF— Typical Force @ 20°C



Size 3EF and 3EC – Typical Speed @ No Load, 20°C



Size 3EC— Typical Force @ 20°C

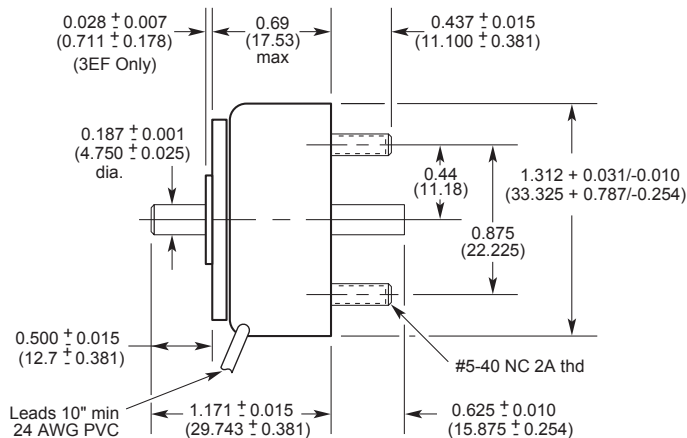


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 4EF/4EC — Push or Pull

LINEAR Low Profile

Size 4EF Short Stroke, Flat Face

Part Number: 129440-0XX

Size 4EC Medium Stroke, Conical Face

Part Number: 129409-0XX

All products are RoHS Compliant

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

Dielectric Strength	23-24 awg, 1000 VRMS ; 25-33 awg, 1200 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 6 $\frac{1}{4}$ " square by $\frac{1}{8}$ " thick
Coil Resistance	23-33 awg, ±5%
Weight	6.0 oz (170 gms)
Holding Force 4EF	37.0 lb (164.6 N) @ 105°C
Holding Force 4EC	16.0 lb (71.2 N) @ 105°C

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 129440-027).

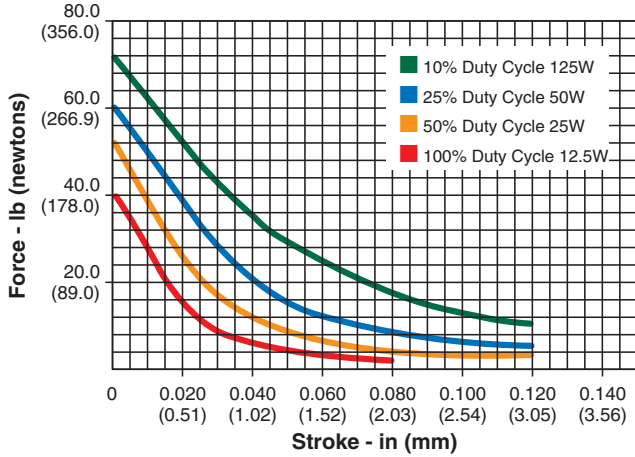
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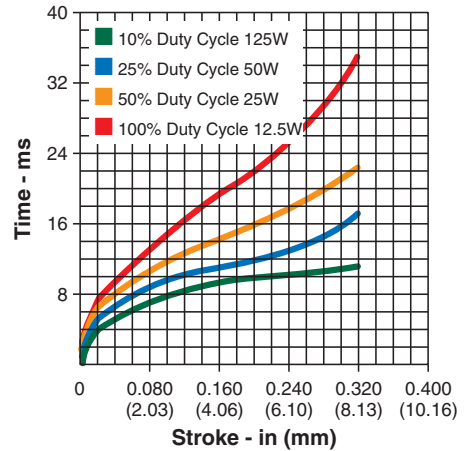


Low Profile Size 4EF/4EC — Push or Pull

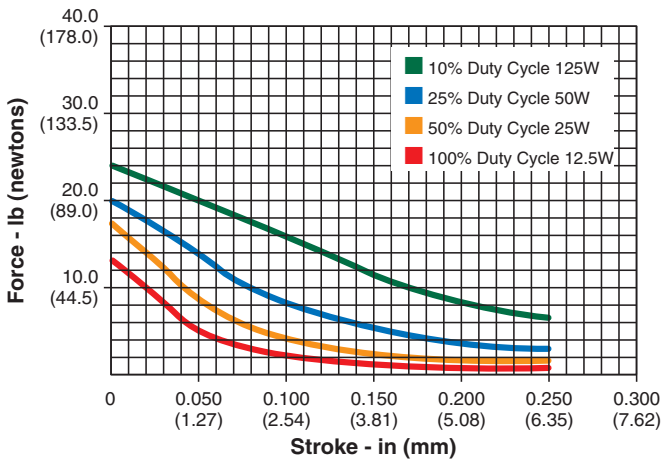
Size 4EF— Typical Force @ 20°C



Size 4EF and 4EC—Typical Speed @ No Load, 20°C



Size 4EC— Typical Force @ 20°C

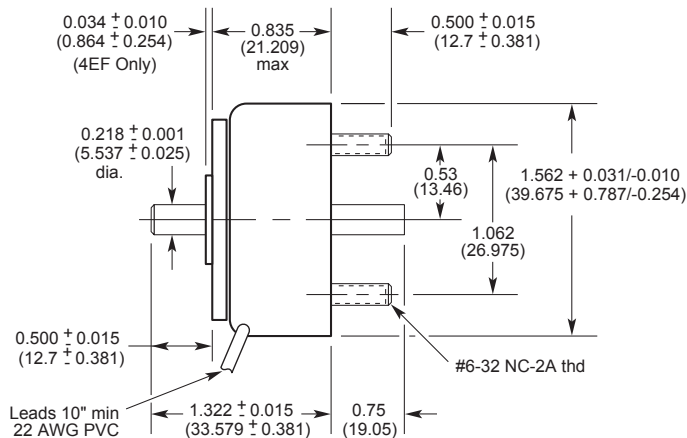


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 4EF/4EC — Push or Pull

LINEAR Low Profile

Size 4EF Short Stroke, Flat Face

Part Number: 129440-0XX

Size 4EC Medium Stroke, Conical Face

Part Number: 129409-0XX

All products are RoHS Compliant

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

Dielectric Strength	23-24 awg, 1000 VRMS ; 25-33 awg, 1200 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 6 $\frac{1}{4}$ " square by $\frac{1}{8}$ " thick
Coil Resistance	23-33 awg, $\pm 5\%$
Weight	6.0 oz (170 gms)
Holding Force 4EF	37.0 lb (164.6 N) @ 105°C
Holding Force 4EC	16.0 lb (71.2 N) @ 105°C

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 129440-027).

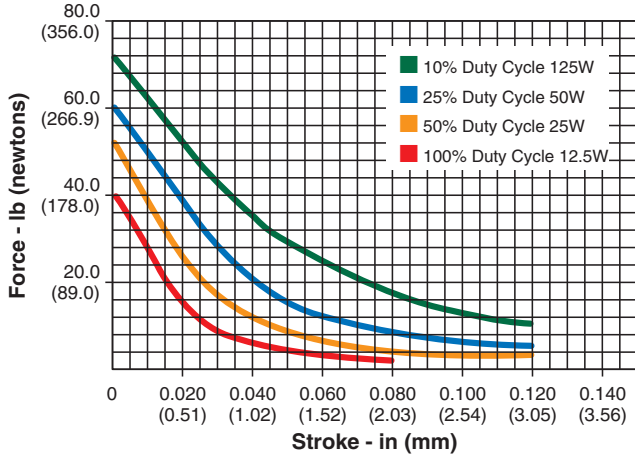
Please see www.johnsonelectric.com for our list of stock products available through distribution.

All specifications subject to change without notice.

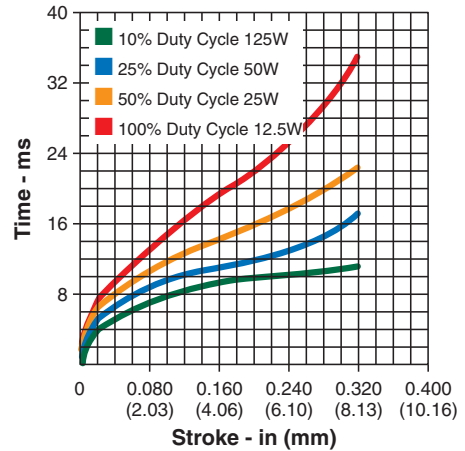


Low Profile Size 4EF/4EC — Push or Pull

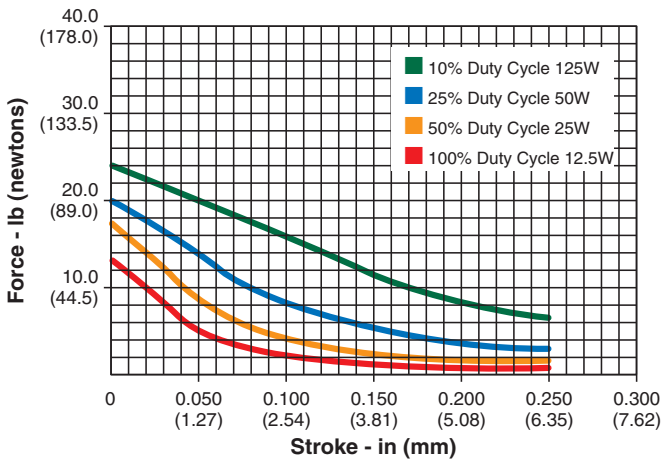
Size 4EF— Typical Force @ 20°C



Size 4EF and 4EC—Typical Speed @ No Load, 20°C



Size 4EC— Typical Force @ 20°C

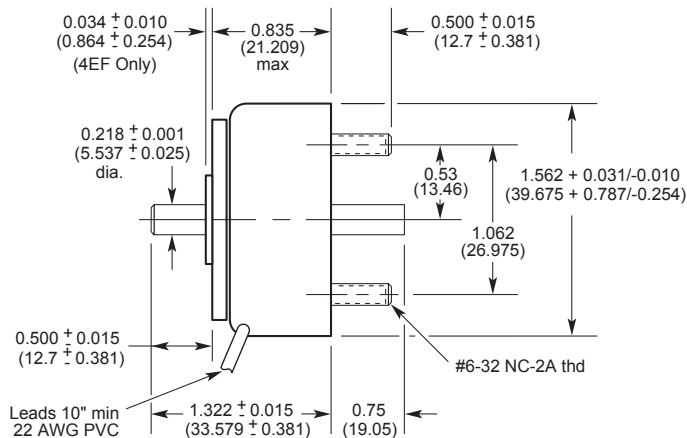


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 5SF — Push or Pull

LINEAR Low Profile

Short Stroke, Flat Face
Part Number: 129450-0XX

All products are RoHS Compliant

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)	860	1220	1720	2730

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	2.03	288	6.1	8.6	12.1	19.2
24	3.20	360	7.6	10.8	15.3	24.0
25	4.91	440	9.6	13.6	19.2	31.0
26	7.72	550	12.1	17.1	24.0	38.0
27	11.12	636	15.0	21.0	30.0	48.0
28	18.79	840	19.2	27.0	39.0	61.0
29	30.48	1088	24.0	34.0	48.0	77.0
30	44.86	1275	30.0	43.0	61.0	96.0
31	70.90	1596	38.0	54.0	76.0	121.0
32	109.00	1974	47.0	67.0	95.0	150.0
33	175.00	2496	60.0	86.0	121.0	192.0

- 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

Dielectric Strength	23 awg, 1000 VRMS ; 24-33 awg, 1200 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 7 $\frac{1}{2}$ " square by $\frac{1}{8}$ " thick
Coil Resistance	23-33 awg, \pm 5%
Weight	9.0 oz (255 gms)
Holding Force	58.0 lb (258.0 N) @ 105°C

How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 30 VDC, specify 129450-027).

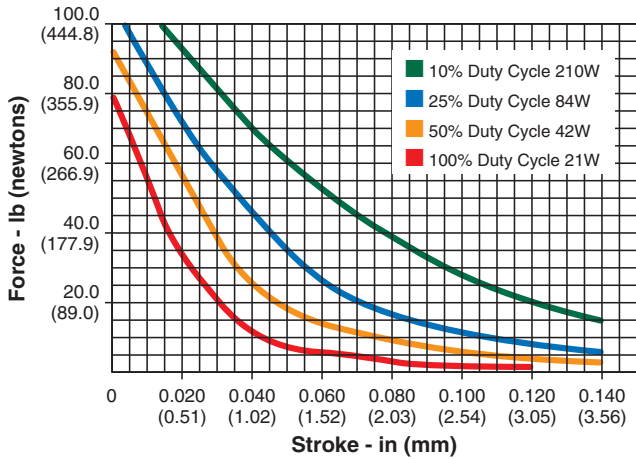
Please see www.johnsonelectric.com for our list of stock products available through distribution.



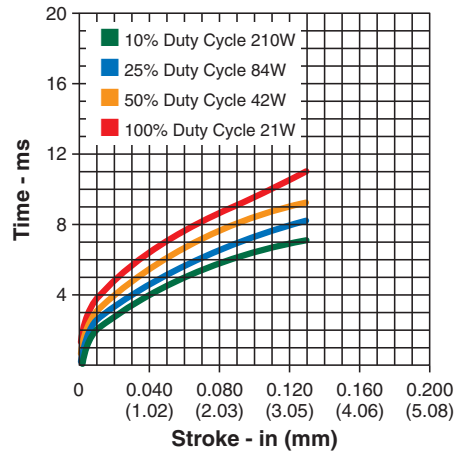
All specifications subject to change without notice.

Low Profile Size 5SF — Push or Pull

Typical Force @ 20°C



Typical Speed @ No Load, 20°C

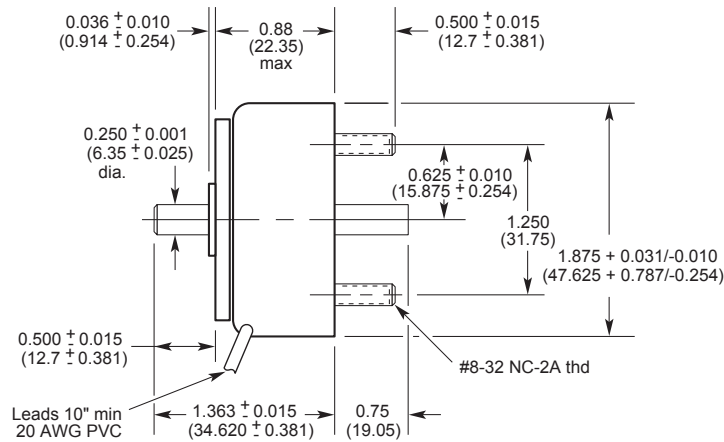


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 5EC — Push or Pull

Medium Stroke, Conical Face

Part Number: 129415-0XX

All products are RoHS Compliant

Performance

	100%	50%	25%	10%
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

Dielectric Strength	23 awg, 1000 VRMS ; 24-33 awg, 1200 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 7½" square by ⅛" thick
Coil Resistance	23-33 awg, ±5%
Weight	11.5 oz (326.0 gms)
Holding Force	27.0 lb (120.1 N) @ 105°C

How to Order

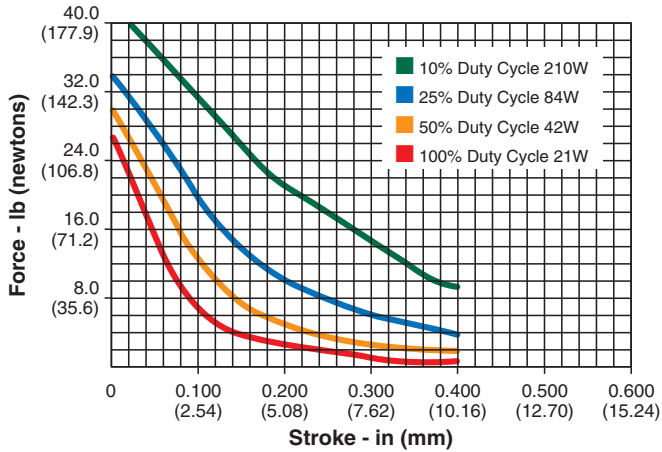
Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 35 VDC, specify 129415-027).

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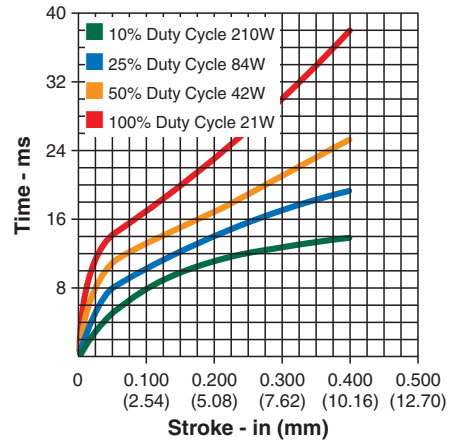
All specifications subject to change without notice.

Low Profile Size 5EC — Push or Pull

Typical Force @ 20°C



Typical Speed @ No Load, 20°C

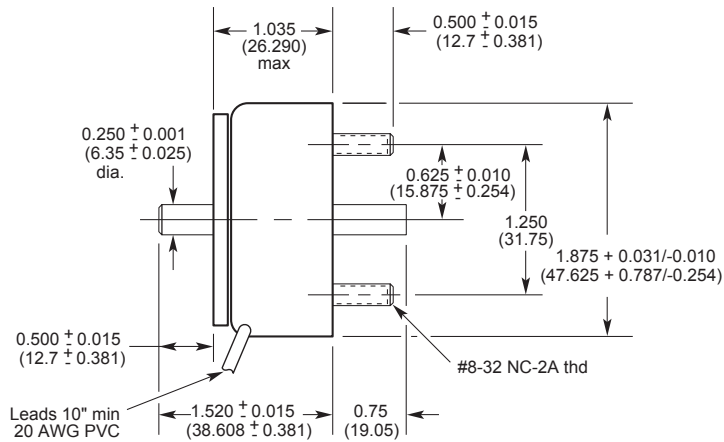


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 6SF — Push or Pull

Short Stroke, Flat Face
Part Number: 187789-0XX

All products are RoHS Compliant

Performance

	100%	50%	25%	10%
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)	1240	1760	2490	3920

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	3.59	432	10.3	14.6	21.0	33.0
24	5.24	500	13.0	18.4	26.0	41.0
25	9.51	708	16.7	24.0	33.0	53.0
26	14.44	858	21.0	30.0	42.0	66.0
27	23.69	1110	27.0	38.0	53.0	84.0
28	38.27	1411	34.0	48.0	68.0	106.0
29	54.62	1638	41.0	59.0	83.0	131.0
30	93.67	2184	53.0	76.0	107.0	168.0
31	143.00	2645	67.0	95.0	134.0	211.0
32	223.00	3328	83.0	118.0	167.0	262.0
33	338.00	4004	105.0	149.0	210.0	331.0

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

Dielectric Strength	23-31 awg, 1200 VRMS ; 32-33 awg, 1500 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 12 ^{3/8} " square by 1/8" thick
Coil Resistance	23-33 awg, ±5%
Weight	1 lb 2 oz (510.3 gms)
Holding Force	88.0 lb (391.4 N) @ 105°C

How to Order

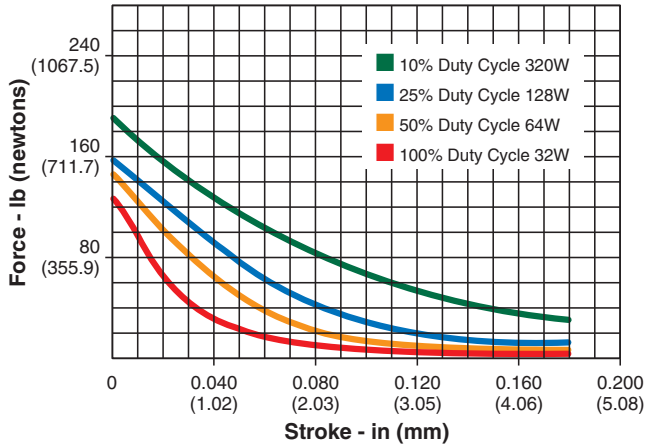
Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 53 VDC, specify 187789-027).

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

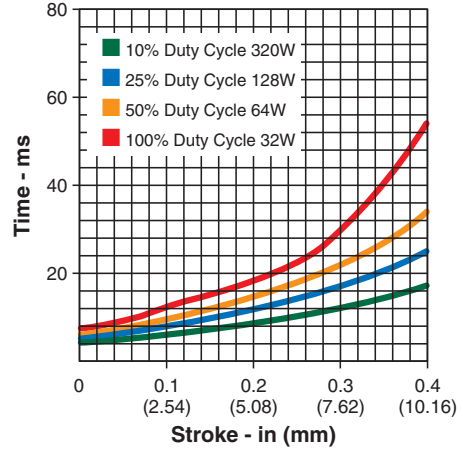
All specifications subject to change without notice.

Low Profile Size 6SF — Push or Pull

Typical Force @ 20°C



Typical Speed @ No Load, 20°C

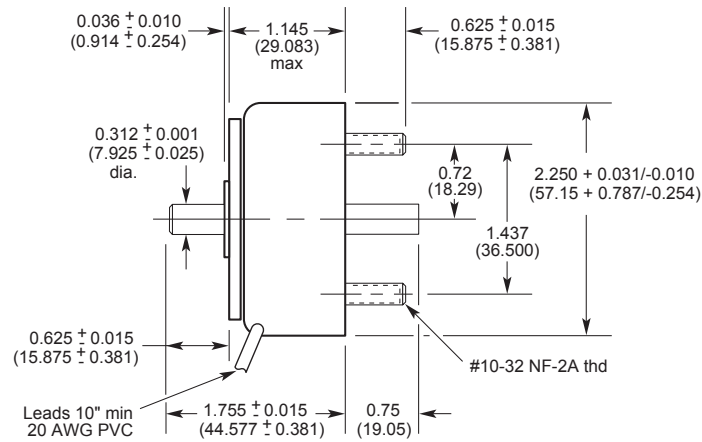


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 6EC — Push or Pull

Medium Stroke, Conical Face
Part Number: 173921-0XX

All products are RoHS Compliant

Performance

	100%	50%	25%	10%
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

Dielectric Strength	23-31 awg, 1200 VRMS ; 32-33 awg, 1500 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 12 ³ / ₈ " square by 1/8" thick
Coil Resistance	23-33 awg, ±5%
Weight	1 lb 5.50 oz (609.5 gms)
Holding Force	49.0 lb (218.0 N) @ 105°C

How to Order

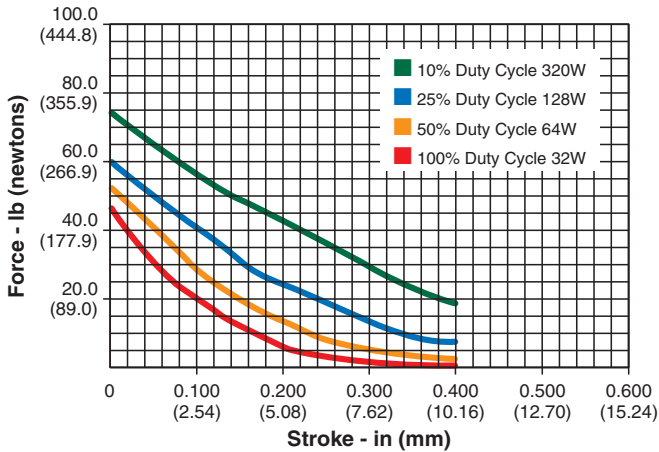
Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 63 VDC, specify 173921-027).

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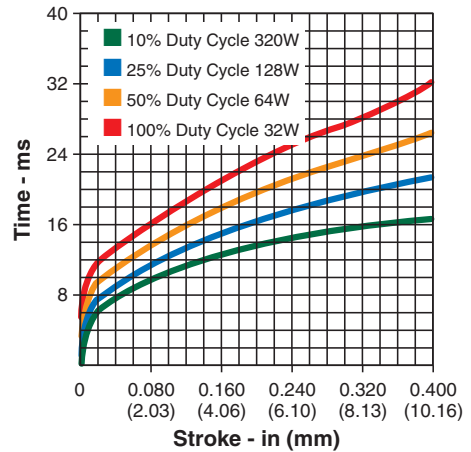
All specifications subject to change without notice.

Low Profile Size 6EC — Push or Pull

Typical Force at 20°C



Typical Speed @ No Load, 20°C

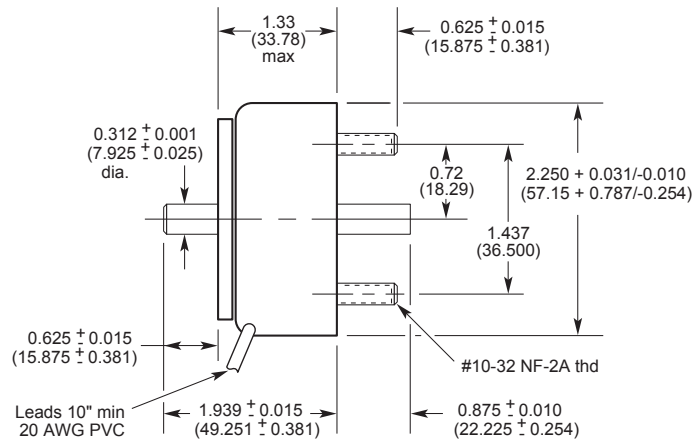


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 7EC — Push or Pull

Medium Stroke, Conical Face

Part Number: 191357-0XX

All products are RoHS Compliant

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously ¹	∞	80	38	16
Maximum ON Time (sec) for single pulse ²	∞	138	50	18
Watts (@ 20°C)	35	70	140	350
Ampere Turns (@ 20°C)	1805	2555	3610	5710

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	10.80	1044	19.0	27.0	39.0	61.0
24	16.50	1274	24.0	34.0	48.0	76.0
25	27.00	1635	31.0	43.0	61.0	97.0
26	43.80	2091	39.0	55.0	78.0	124.0
27	68.40	2603	49.0	69.0	98.0	155.0
28	108.00	3255	61.0	87.0	123.0	194.0
29	162.00	3933	75.0	106.0	151.0	238.0
30	265.00	5044	96.0	136.0	193.0	305.0
31	385.00	5800	116.0	164.0	232.0	367.0
32	583.00	7230	143.0	202.0	286.0	452.0
33	882.00	8400	176.0	248.0	351.0	600.0

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

Dielectric Strength	23-29 awg, 1200 VRMS ; 30-33 awg, 1500 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 15 ¹ / ₈ " square by ¹ / ₈ " thick
Coil Resistance	23-30 awg, ±5%; 31-33 awg, ±10%
Weight	2.5 lb (1.134 kg)
Holding Force	50.0 lb (222.4 N) @ 105°C

How to Order

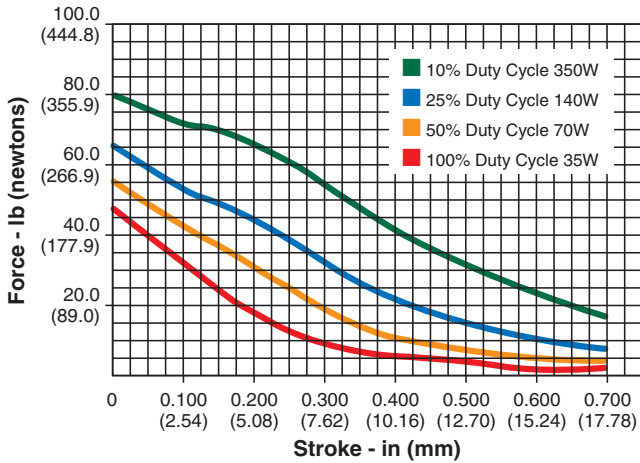
Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 48 VDC, specify 191357-024).

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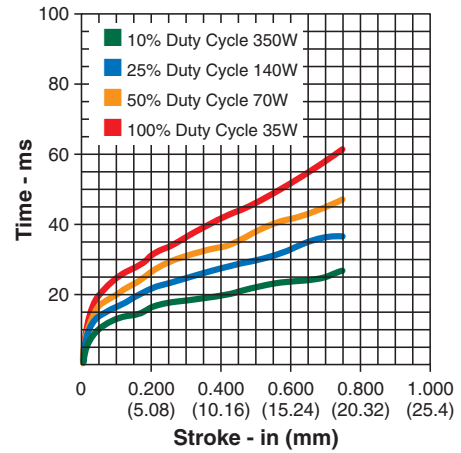
All specifications subject to change without notice.

Low Profile Size 7EC — Push or Pull

Typical Force @ 20°C



Typical Speed @ No Load, 20°C

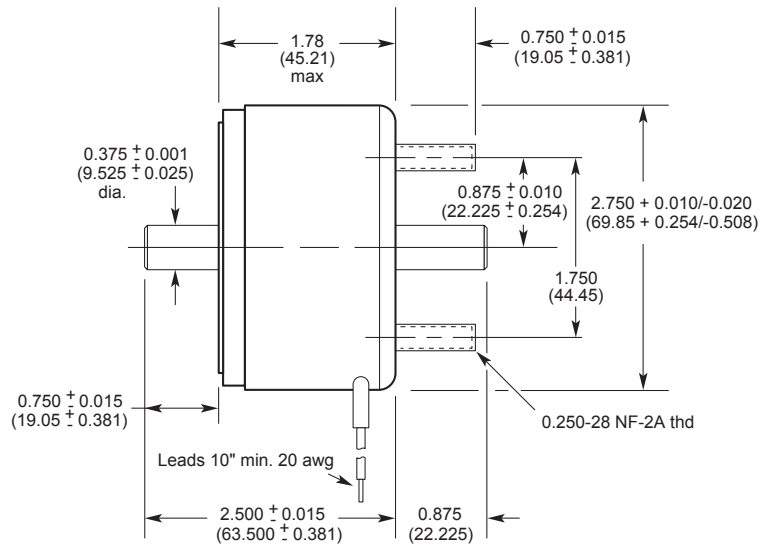


Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state



Low Profile Size 8EC — Push or Pull

Medium Stroke, Conical Face

Part Number: 191016-0XX

All products are RoHS Compliant

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously ¹	∞	72	43	20
Maximum ON Time (sec) for single pulse ²	∞	132	56	22
Watts (@ 20°C)	41	82	164	410
Ampere Turns (@ 20°C)	2195	3105	4155	6945

Coil Data

awg (0XX) ³	Resistance (@20°C)	# Turns ⁴	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	19.00	1512	28.0	40.0	56.0	88.0
24	31.20	1952	36.0	51.0	72.0	113.0
25	49.40	2448	45.0	64.0	90.0	142.0
26	78.00	3060	57.0	80.0	113.0	179.0
27	119.00	3740	70.0	99.0	140.0	221.0
28	184.00	4584	87.0	123.0	174.0	275.0
29	301.00	5936	111.0	157.0	222.0	351.0
30	425.00	6750	132.0	187.0	264.0	417.0
31	683.00	8750	167.0	237.0	335.0	529.0
32	1110.00	11000	213.0	302.0	427.0	—
33	1509.00	12050	249.0	352.0	498.0	—

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

Dielectric Strength	23-27 awg, 1200 VRMS ; 28-33 awg, 1500 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 20 ¹ / ₄ " square by ¹ / ₈ " thick
Coil Resistance	23-30 awg, ±5%; 31-33 awg, ±10%
Weight	4.9 lb (2.2 kg)
Holding Force	120.0 lb (533.7 N) @ 105°C

How to Order

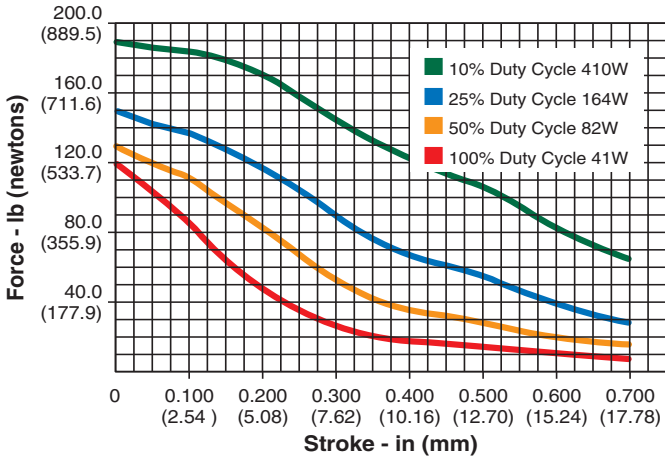
Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle unit rated at 90 VDC, specify 191016-025).

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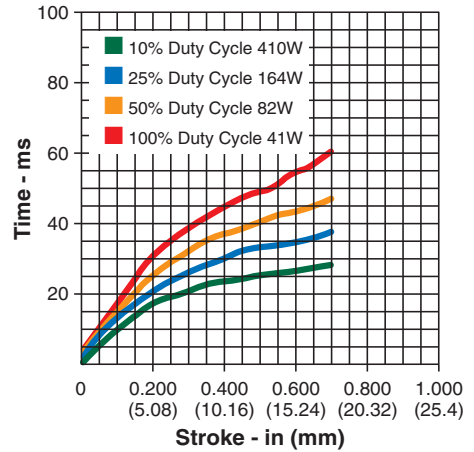
All specifications subject to change without notice.

Low Profile Size 8EC — Push or Pull

Typical Force at 20°C



Typical Speed @ No Load, 20°C



Force values for reference only.

Dimensions

Inches (mm)

All solenoids are illustrated in energized state

