

# BTA® Selection

Brushless Torque Actuators are available in five sizes. Use the selection overview chart to determine which size offers the desired performance and mechanical specifications. Refer to the individual size specification pages for complete performance and mechanical data.

## BTA Selection Overview

Size	Package Dimensions (in)		Maximum Stroke (degrees)	Gross Starting Torque (lb-in)				Gross Ending Torque (lb-in)			
	Dia.	Length		@ Specified Duty Cycle				@ Specified Duty Cycle			
				100%	50%	25%	10%	100%	50%	25%	10%
2EV	1.188	0.719	45	N/A*	0.28	0.50	1.00	N/A*	0.19	0.33	0.58
3EV	1.375	0.890	45	0.28	0.45	0.84	1.66	0.22	0.31	0.53	0.88
4EV	1.625	1.055	45	0.40	0.92	1.60	2.85	0.36	0.64	1.00	1.60
5EV	1.937	1.265	45	1.36	2.36	3.72	6.00	1.04	1.64	2.60	4.20
6EV	2.312	1.625	45	3.40	5.80	8.60	12.90	2.00	3.70	5.00	7.00

All data is at 20°C coil temperature. Torque outputs degrade with elevated temperatures.

\* Not recommended for 100% duty.

## How to Use BTA Performance Charts

- Select one of the four columns which provides the appropriate duty cycle. (For example 50%.)
- Reading down this column provides a variety of performance and electrical data including maximum on time, watts, and amp turns.
- Following down the column further into the VDC ratings, select the voltage which most closely matches your supply voltage. (For example, 7.6 for an 8 VDC power supply.)
- Read across (to the left) to select the awg suffix to complete the part number when ordering. (In this example using our 2EV chart, 28 awg is required, thus to order, specify: 195190-028.)

## Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	100	36	7
Maximum ON Time (sec) for single pulse	∞	162	44	8
Typical Energize Time (msec)	20	15	11	8
Watts (@ 20°C)	10	20	40	100
Ampere Turns (@ 20°C)	331	469	663	1048

## Coil Data

awg (0XX)*	Resistance (@20°C)	# Turns <sup>5</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
24	0.47	72	2.2	3.1	4.3	6.9
25	0.67	82	2.6	3.7	5.2	8.2
26	0.94	92	3.1	4.3	6.1	9.7
27	1.33	104	3.6	5.2	7.3	11.5
28	2.86	174	5.4	7.6	10.7	16.9
29	4.01	195	6.3	9.0	12.7	20.0
30	7.69	292	8.8	12.4	17.5	27.7
31	10.80	328	10.4	14.7	20.8	32.9
32	19.26	460	13.9	19.6	27.8	43.9
33	26.96	515	16.4	23.2	32.8	52.0
34	45.82	690	21.4	30.3	42.8	68.0
35	63.76	768	25.3	35.7	50.0	80.0

All specifications subject to change without notice.

# BTA® Size 5EV

Part Numbers: Clockwise Rotation 190835-0XX  
Counter-Clockwise Rotation 195625-0XX

ROTARY BTA

## Performance

Maximum Duty Cycle	100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>	∞	40	15	4		
Maximum ON Time (sec) for single pulse <sup>2</sup>	∞	109	36	10		
Typical Energize Time (msec) <sup>3</sup>	27	18	14	10		
Watts (@ 20°C)	21	42	84	210		
Ampere Turns (@ 20°C)	621	878	1242	1964		
Coil Data						
awg (0XX) <sup>4</sup>	Resistance (@20°C)	# Turns <sup>5</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
23	1.05	128	4.7	6.6	9.4	14.8
24	2.24	213	6.9	9.7	13.7	21.7
25	3.16	240	8.1	11.5	16.3	25.8
26	4.45	270	9.7	13.7	19.3	30.6
27	8.50	404	13.4	18.9	26.7	42.2
28	11.90	452	15.8	22.3	31.6	50.0
29	21.10	630	21.0	29.7	42.1	67.0
30	29.50	705	24.9	35.2	49.8	78.7
31	50.30	948	32.5	46.0	65.0	103.0
32	82.70	1232	41.7	59.0	83.0	132.0
33	134.00	1576	53.0	75.0	106.0	168.0

## Specifications

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 7-1/2" square by 1/8" thick
Thermal Resistance	5.36 (°C/watt)
Rotor Inertia	30.36 (gm-cm <sup>2</sup> )
Weight	13.5 oz (382 gms)
Dimensions	Ø1.937" x 1.265" (See page B10)

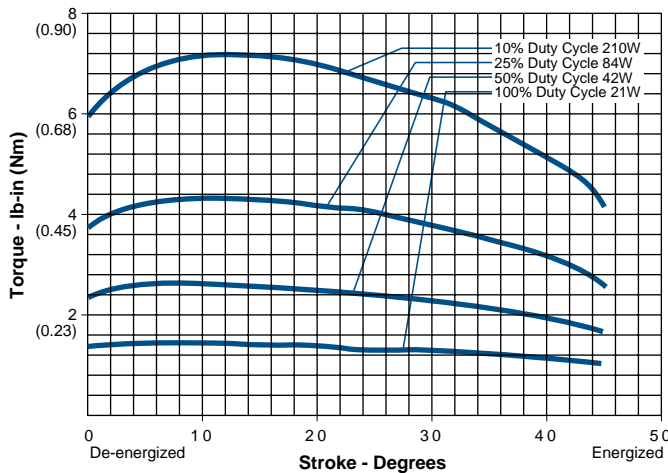
## How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle clockwise rotation unit rated at 26.7 VDC, specify 190835-027).

Please see [www.ledex.com](http://www.ledex.com) (click on Stock Products tab) for our list of stock products available through our North American distributors.

- Continuously pulsed at stated watts and duty cycle
- Single pulse at stated watts (with coil at ambient room temperature 20°C)
- Typical energize time based on a 5.0 oz-in torque load including 14 gm-cm<sup>2</sup> of inertia
- Other coil awg sizes available — please consult factory
- Reference number of turns

## Size 5EV — Typical Torque @ 20°C



### Notes:

Torque curves shown are without spring.

Typical standard spring has a torque of 4.0 oz-in.

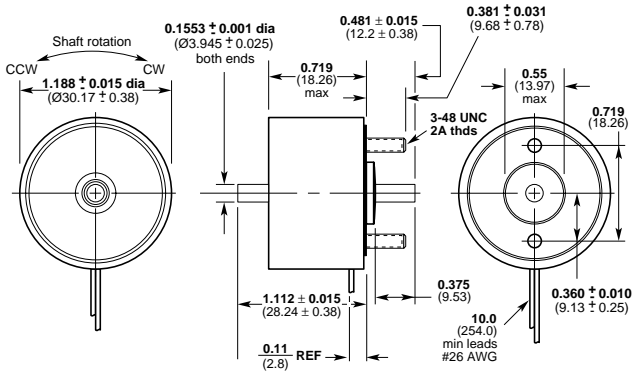
Torque values are for reference only.

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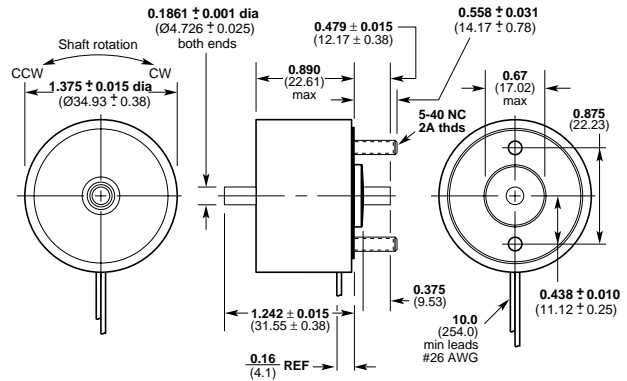
# BTA® Dimensions

inches (mm)

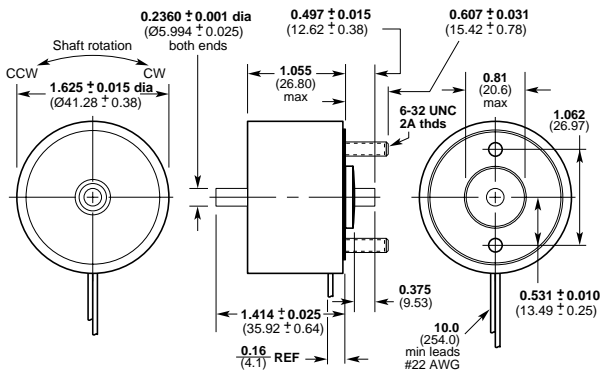
## Size 2EV



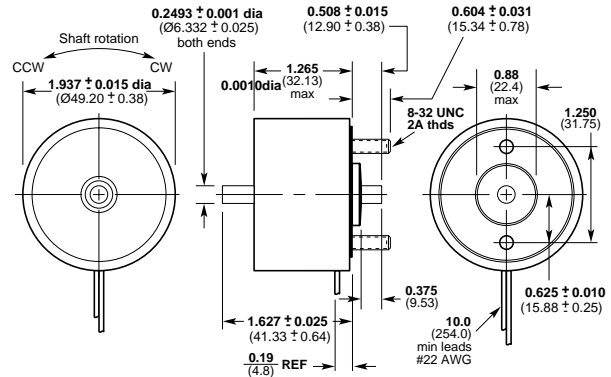
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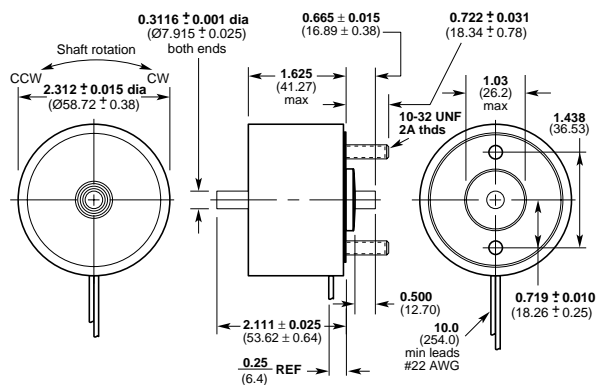
## Size 4EV



## Size 5EV



## Size 6EV



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