



# INDUSTRIAL MOTORS & ACTUATORS



## TECHNICAL QUICK SELECTION GUIDE

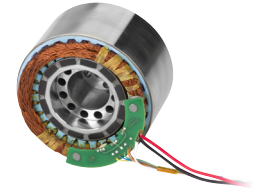


# BRUSHLESS DC MOTORS

Sensata specializes in customizing brushless DC (BLDC) motors to exact customer specifications, providing the ideal solution for application needs. Our designs provide high performance, rugged reliability and high torque density solutions for wide operating temperature ranges and harsh environments.

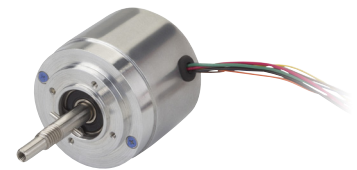
## Applications:

- Medical Equipment
  - Ultrasound
  - Heart/Lung Machines
  - Ventilators
  - Incubators
- Propulsion Motors (Aerospace)



FRAMLESS BLDC MOTORS

Greater customization and highest performance.



HOUSED BLDC MOTORS

High performance and easy to manage housed package.

## FRAMELESS BLDC MOTORS

Part Number	Peak Torque (N-m / oz-in)	Continuous Stall Torque (N-m / oz-in)	Motor Constant (N-m/√watts)/(oz-in/√watts)	Weight (g/ oz)
DIP11-11-001A	0.011 / 6	0.03 / 4.58	0.014 / 1.97	51 / 1.8
DIP16-08-008A	0.14 / 20	0.1 / 14.7	0.032 / 4.61	68 / 2.4
DIP-13-09-001A	0.26/36.3	0.1/13.8	0.037/5.29	82.2/2.9
DIP13-12-012A	0.16 / 22.8	0.05 / 7.4	0.01 / 2	70.9 / 2.5
DIP13-12-004A	0.17 / 24	0.05 / 7.5	0.01 / 2	70.9 / 2.5
DIP30-07-001A	0.71 / 100	0.095 / 13.5	0.095 / 13.5	212.6 / 7.5
DIP24-11-001A	0.85 / 120	0.33 / 46	0.077 / 10.5	263.6 / 9.3
DIP37-12-024Z	1.13 / 160	0.35 / 50	0.063 / 8.92	1134 / 40
DIP21-22-002A	1.76 / 250	0.38 / 54	0.095 / 13.5	436.5
DIP38-18-001A	3.5 / 496	2.68 / 380	0.35 / 50	1134 / 40
DIP38-22-001A	9.18	3.05 / 423	0.385 / 54.6	2098 / 74

# HOUSED BLDC MOTORS

Part Number	Peak Torque (N-m / oz-in)	Continuous Stall Torque (N-m / oz-in)	Motor Constant (N-m/√watts)/(oz-in/√watts)	Weight (g/ oz)
DIH11-19-BDNA	0.056 / 8	0.025 / 3.5	0.007 / 1.1	87.9 / 3.1
DIH14-20-BDYA	0.105 / 15	0.042 / 6	0.014 / 1.95	170.1 / 6
DIH18-14-BBNA	0.085 / 12	0.03 / 4.3	0.007 / 1.1	147.4 / 5.2
DIH-23-13-001A	0.16/24.0	0.05/7.5	0.017/2.5	229.6/8.1
DIH23-13-BDNA	0.17 / 24	0.055 / 7.8	0.017 / 2.5	229.6 / 8.1
DIH23-16-BDNA	0.28 / 40	0.11 / 16.2	0.034 / 4.76	317.5 / 11.2
DIH23-19-BDNA	0.35 / 50	0.157 / 22.3	0.044 / 6.22	413.9 / 14.6
DIH23-22-BDNA	0.56 / 80	0.21 / 30	0.051 / 7.2	527.3 / 186
DIH23-25-001A	0.7 / 100	0.22 / 32	0.055 / 7.8	510.3 / 18
DIH23-30-007A	1.76 / 250	0.38 / 54	0.095 / 13.5	793.8 / 28
DIN34-32-CDYA	2.47 / 350	0.95 / 135	0.164 / 23.3	1871.1 / 66

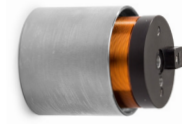


# VOICE COIL ACTUATORS

Sensata delivers high-performance voice coil actuators (VCAs) designed to operate across wide temperature ranges and harsh environments, with custom options including moving magnet designs and more. These direct-drive, zero backlash, cog-free devices are the ideal solution for controlling precision and high accuracy motion, with proven custom designs deployed in multiple sectors.

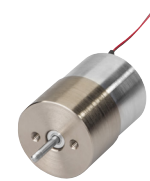
## Applications:

- Medical Devices
- Low Outgassing (Vacuum/Aerospace)
- Prototype building
- Life Testing



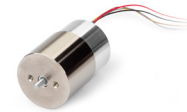
FRAMELESS VCA

Greater customization and highest performance.



HOUSED OR SEMI-HOUSED VCA

High performance and easy to manage housed package.



HOUSED WITH SENSOR

ROTARY/  
RECTANGULAR

## CYLINDRICAL FRAMELESS LINEAR VCA

Part Number	Peak Force (N / lb)	Continuous Stall Force (N / lb)	Actuator Constant (N/√watt lb/ √watt)	Outside Diameter/ Width (mm / in)	Length at Mid-stroke (mm / in)	Total Stroke (mm / in)
LA08-10-000A	6.67 / 1.50	1.96 / 0.44	0.97 / 0.21	19.0 / 0.75	24.5 / 0.96	4.06 / 0.16
LA10-08-000A	6.67 / 1.50	2.71 / 0.60	1.14 / 0.25	24.1 / 0.95	19.6 / 0.77	5.08 / 0.20
LA10-12-027A	13.3 / 3.00	4.94 / 1.11	1.76 / 0.39	25.4 / 1.00	28.5 / 1.12	9.14 / 0.36
LA12-17-000A	44.4 / 10.0	15.5 / 3.50	4.38 / 0.98	30.4 / 1.20	43.1 / 1.70	7.62 / 0.30
LA13-11-000A	15.5 / 3.50	5.07 / 1.14	2.36 / 0.53	31.6 / 1.24	27.3 / 1.07	6.36 / 0.25
LA13-12-000A	15.5 / 3.50	7.12 / 1.60	2.36 / 0.53	31.6 / 1.25	28.5 / 1.13	6.36 / 0.25
LA14-17-000A	22.2 / 5.00	7.12 / 1.60	2.18 / 0.49	35.5 / 1.40	41.9 / 1.65	10.1 / 0.40
LA15-16-002A	62.6 / 14.1	19.6 / 4.40	4.72 / 1.06	38.1 / 1.50	39.6 / 1.56	6.36 / 0.25
LA15-16-020A	33.8 / 7.60	11.6 / 2.60	2.80 / 0.62	38.1 / 1.50	39.6 / 1.56	10.1 / 0.40
LA15-16-024A	88.9 / 20.0	24.4 / 5.50	5.82 / 1.31	38.1 / 1.50	39.6 / 1.56	6.35 / 0.25
LA15-26-000A	44.4 / 10.0	11.5 / 2.60	2.93 / 2.60	37.5 / 1.48	65.4 / 2.58	25.4 / 1.00
LA16-16-000A	89.0 / 20.0	24.4 / 5.50	5.83 / 1.31	40.0 / 1.57	39.6 / 1.16	6.36 / 0.25

Part Number	Peak Force (N / lb)	Continuous Stall Force (N / lb)	Actuator Constant (N/√watt lb/ √watt)	Outside Diameter/ Width (mm / in)	Length at Mid-stroke (mm / in)	Total Stroke (mm / in)
LA16-19-001A	22.2 / 5.00	9.30 / 2.10	2.31 / 0.52	40.0 / 1.58	47.6 / 1.88	12.7 / 5.00
LA17-28-000A	71.1 / 16.0	28.4 / 6.40	6.89 / 1.55	58.4 / 2.30	66.0 / 2.60	15.2 / 0.60
LA18-12-000A	44.5 / 10.0	15.1 / 3.40	4.80 / 1.10	44.4 / 1.75	28.4 / 1.12	6.10 / 0.24
LA18-12-002A	27 / 6.07	7.79 / 1.75	2.97 / 0.67	44.45 / 1.75	28.40 / 1.12	3.05/0.12
LA18-12-006Z	44.4 / 10.0	15.1 / 3.40	4.84 / 1.09	44.4 / 1.75	28.4 / 1.12	6.10 / 0.24
LA19-40-000A	22.2 / 5.00	8.54 / 1.92	2.37 / 0.53	47.6 / 1.88	101 / 4.00	45.7 / 1.80
LA23-55-000A	89.0 / 20.0	27.1 / 6.10	4.34 / 0.98	57.1 / 2.25	139 / 5.50	57.1 / 2.25
LA24-20-000A	111 / 25.0	26.3 / 5.90	7.51 / 1.69	60.3 / 2.37	50.8 / 2.00	16.5 / 0.65
LA24-33-000A	35.6 / 8.00	13.8 / 3.10	3.02 / 0.68	59.7 / 2.35	82.5 / 3.25	22.9 / 0.90
LA25-42-000A	266 / 60.0	86.3 / 19.4	13.78 / 3.10	63.5 / 2.50	105.9 / 4.17	25.4 / 1.00
LA28-22-000A	266 / 60.0	87.7 / 19.7	13.78 / 3.10	69.8 / 2.75	55.8 / 2.20	11.4 / 0.45
LA28-22-001A	201 / 45.2	45.7 / 10.3	10.4 / 2.34	69.8 / 2.75	55.9 / 2.20	11.4 / 0.45
LA28-43-000A	266 / 60.0	75.6 / 17.0	13.0 / 2.90	70.0 / 2.76	109 / 4.30	25.0 / 0.98
LA30-43-000A	445 / 100	185 / 41.6	21.8 / 4.90	76.2 / 3.00	112 / 4.42	25.4 / 1.00
LA30-48-000A	445 / 100	133 / 30.1	21.8 / 4.90	76.2 / 3.00	120 / 4.72	25.4 / 1.00
LA30-75-001A	444 / 100	96.2 / 21.7	16.6 / 3.75	76.2 / 3.00	188 / 7.43	50.8 / 2.00
LA34-37-000A	444 / 100	127 / 28.6	20.2 / 4.56	85.8 / 3.38	95.2 / 3.75	19.0 / 0.75
LA43-67-000A	1378 / 110	282 / 63.6	28.0 / 6.30	107.9 / 4.25	169 / 6.69	31.7 / 1.25
LA50-65-000A	1861 / 418	500 / 112	57.8 / 13.0	127 / 5.00	163 / 6.43	31.75/ 1.25.

## CYLINDRICAL SEMI-HOUSED LINEAR VCA

Part Number	Peak Force (N / lb)	Continuous Stall Force (N / lb)	Actuator Constant (N/√watt lb/ √watt)	Outside Diameter/ Width (mm / in)	Length at Mid-stroke (mm / in)	Total Stroke (mm / in)
LA13-11-001A-3E	15.5 / 3.50	5.07 / 1.14	2.36 / 0.53	31.6 / 1.24	27.3 / 1.07	6.36 / 0.25
LA13-11-001A-3S	15.5 / 3.50	5.07 / 1.14	2.36 / 0.53	31.6 / 1.24	27.3 / 1.07	6.36 / 0.25
LA16-16-001A-4E	89.0 / 20.0	24.4 / 5.50	5.83 / 1.31	40.0 / 1.57	39.6 / 1.56	6.36 / 0.25
LA16-16-001A-4S	89.0 / 20.0	24.4 / 5.50	5.83 / 1.31	40.0 / 1.57	39.6 / 1.56	6.36 / 0.25
LA28-43-001A-12E	266 / 60.0	75.6 / 17.0	13.0 / 2.90	70.0 / 2.76	129 / 5.10	25.0 / 0.98
LA28-43-001A-12I	266 / 60.0	75.6 / 17.0	13.0 / 2.90	70.0 / 2.76	129 / 5.10	25.0 / 0.98
LA28-43-001A-12S	266 / 60.0	75.6 / 17.0	13.0 / 2.90	70.0 / 2.76	129 / 5.10	25.0 / 0.98
LA100-93-001A-50I	2447 / 500	1443 / 325	86.2 / 19.4	254 / 10.0	236 / 5.90	50.8 / 2.00
LA100-93-001A-50S	2447 / 500	1443 / 325	86.2 / 19.4	254 / 10.0	236 / 5.90	50.8 / 2.00

## CYLINDRICAL HOUSED LINEAR VCA

Part Number	Peak Force (N / lb)	Continuous Stall Force (N / lb)	Actuator Constant (N/√watt lb/√watt)	Outside Diameter/ Width (mm / in)	Length at Mid-stroke (mm / in)	Total Stroke (mm / in)
LAH04-10-000A	1.89 / 0.42	1.11 / 0.25	0.84 / 0.19	10.1 / 0.40	25.4 / 1.00	4.00 / 0.16
LAH13-18-000A-3E	15.5 / 3.50	5.07 / 1.14	2.36 / 0.53	31.6 / 1.24	45.7 / 1.80	6.36 / 0.25
LAH13-18-000A-3S	15.5 / 3.50	5.07 / 1.14	2.36 / 0.53	31.6 / 1.24	45.7 / 1.80	6.36 / 0.25
LAH16-23-000A-4E	89.0 / 20.0	17.0 / 3.82	5.83 / 1.31	40.0 / 1.57	58.4 / 2.30	6.08 / 0.24
LAH16-23-000A-4S	89.0 / 20.0	17.0 / 3.82	5.83 / 1.31	40.0 / 1.57	58.4 / 2.30	6.08 / 0.24
LAH28-53-000A-12E	266 / 60.0	60.1 / 13.5	13.0 / 2.94	70.0 / 2.76	132 / 5.22	25.0 / 0.98
LAH28-53-000A-12I	266 / 60.0	60.1 / 13.5	13.0 / 2.94	70.0 / 2.76	132 / 5.22	25.0 / 0.98
LAH28-53-000A-12S	266 / 60.0	60.1 / 13.5	13.0 / 2.94	70.0 / 2.76	132 / 5.22	25.0 / 0.98
LAH43-86-001Z	1512 / 340	386 / 86.9	38.3 / 8.61	218 / 8.60	108 / 4.25	31.7 / 1.25

## RECTANGULAR LINEAR VCA

Part Number	Peak Force (N / lb)	Continuous Stall Force (N / lb)	Actuator Constant (N/√watt lb/√watt)	Outside Diameter/ Width (mm / in)	Length at Mid-stroke (mm / in)	Total Stroke (mm / in)
LA05-30-001Z	37.8 / 8.5	15.1 / 3.39	4.13 / 0.93	12 / 0.47	74 / 2.91	10 / 0.394
LA13-30-000A	13.3 / 3	5.5 / 1.2	1.7 / 0.38	33.66 / 1.325	7602 / 3	25 / 1.26
LA15-65-000A	66.72 / 15	18.9 / 4.25	4.003 / 0.9	38.1 / 1.5	165.1 / 605	101.6 / 4
LA09-19-000A	6.25 / 1.406	2.31 / .52	1.25 / .28	22.6 / .89	48.2 / 1.90	10.16 / .40
LA12-50-001A	2.22 / .50	.14 / 0.62	.072 / 0.322	33.02 / 1.3	114.3 / 4.5	76.2 / 3.00
LA14-24-000A	31.13 / 7.0	14.9 / 3.35	3.2 / 0.72	80.77 / 3.18	60.3 / 2.375	22.2 / 0.87
LA18-32-000A	142.34 / 32.0	43.15 / 9.7	9.03 / 2.03	88.9 / 3.5	82.5 / 3.25	12.7 / 0.50

## ROTARY VCA

Part Number	Peak Torque (N-m / oz-in)	Continuous Stall Force (N / lb)	Actuator Constant (N/√watt lb/√watt)	Width (mm / in)	Height (mm / in)	Total Excursion Angle (Degrees)
RA27-10-000A	.106 / 15	.029 / 4.09	.017 / 2.39	68.6 / 2.70	24 / 0.94	100
RA27-10-001A	.106 / 15	.029 / 4.09	.017 / 2.39	68.6 / 2.70	24 / 0.94	100
RA29-11-002A	.226 / 32	.093 / 13.2	.031 / 4.44	27.4 / 1.08	45.2 / 1.78	32
RA60-10-001A	.847 / 120	.396 / 56.1	.097 / 13.8	30.5 / 1.20	38.1 / 1.50	30
RA68-12-001A	1.20 / 170	.649 / 92	.158 / 22.4	30.2 / 1.19	45.2 / 1.78	20
RA54-18-000A	1.85 / 262	.798 / 113	.209 / 29.7	45.7 / 1.8	60.9 / 2.4	7.5
RA68-19-000A	7.06 / 1000	1.76 / 250	.376 / 53.3	46.5 / 1.83	55.9 / 2.20	14

## CYLINDRICAL HOUSED LINEAR VCA WITH SENSOR

Part Number	Peak Force (N / lb)	Continuous Stall Force (N / lb)	Actuator Constant (N/√watt lb/√watt)	Outside Diameter/ Width (mm / in)	Length at Mid- stroke (mm / in)	Total Stroke (mm / in)	Resolution
LAS13-18-000A-P01-3E	15.57 / 3.5	5.07 / 1.14	2.36 / 0.53	31.62 / 1.25	45.72 / 1.8	6.36 / 0.25	10
LAS13-18-000A-P01-3S	15.57 / 3.5	5.07 / 1.14	2.36 / 0.53	31.62 / 1.25	45.72 / 1.8	6.36 / 0.25	10
LAS13-56-000A-P01-6E	97.36 / 21.9	23.1 / 5.19	7.63 / 1.72	33 / 1.3	142.2 / 5.6	12.8 / 0.5	20
LAS16-23-000A-P01-4E	89 / 20	17 / 3.82	5.83 / 1.31	40 / 1.58	58.42 / 2.3	6.08 / 0.24	10
LAS16-23-000A-P01-4S	89 / 20	17 / 3.82	5.83 / 1.31	40 / 1.58	58.42 / 2.3	6.08 / 0.24	10
LAS22-42-000A-P01-6E	106.7 / 60	23.2 / 5.2	5.57 / 1.25	55.9 / 2.2	106.7 / 4.2	25.4 / 1	40
LAS22-42-000A-P01-6I	106.7 / 60	23.2 / 5.2	5.57 / 1.25	55.9 / 2.2	106.7 / 4.2	25.4 / 1	40
LAS28-53-000A-P01-12E	266.9 / 60	60.1 / 13.5	13.09 / 2.94	70 / 2.76	132.7 / 5.22	25 / 0.98	40
LAS28-53-000A-P01-12I	266.9 / 60	60.1 / 13.5	13.09 / 2.94	70 / 2.76	132.7 / 5.22	25 / 0.98	40
LAS28-53-000A-P01-12S	266.9 / 60	60.1 / 13.5	13.09 / 2.94	70 / 2.76	132.7 / 5.22	25 / 0.98	40
LAS43-88-000A-P01-10E	1512.4 / 30	386.7 / 86.9	38.3 / 8.61	109.22 / 4.3	223.52 / 8.8	31.74 / 1.25	50
LAS43-88-000A-P01-10I	1512.4 / 340	386.7 / 86.9	38.3 / 8.61	109.22 / 4.3	223.52 / 8.8	31.74 / 1.25	50



## ABOUT US

Sensata Technologies is a global industrial technology company striving to create a cleaner, more efficient, electrified and connected world. Through its broad portfolio of sensors, electrical protection components and sensor-rich solutions which create valuable business insights, Sensata helps its customers address increasingly complex engineering and operating performance requirements.

With more than 21,000 employees and global operations in 16 countries, Sensata serves customers in the automotive, heavy vehicle & off-road, industrial and aerospace markets.

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