

Specifications LZ-050-0-XXX

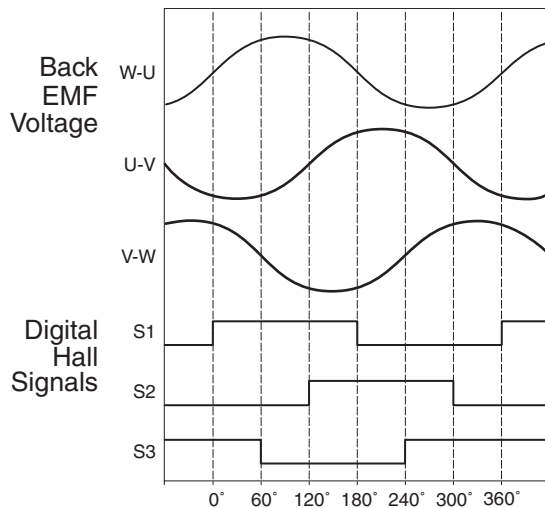


Performance Parameters	Symbol	Units	LZ-050-0-120				LZ-050-0-240				LZ-050-0-360				LZ-050-0-480			
Continuous Force ^{1,5,6,7}	F_{cTmax}	$\frac{N}{(lb_f)}$	106 (24)				212 (48)				317 (71)				423 (95)			
Peak Force ²	F_p	$\frac{N}{(lb_f)}$	529 (119)				1058 (238)				1587 (357)				2116 (476)			
Motor Constant ¹	K_M	$\frac{N/\sqrt{-W}}{(lb_f/\sqrt{-W})}$	12.7 (2.8)				17.9 (4.0)				21.9 (4.9)				25.3 (5.7)			
Thermal Resistance	R_{th}	$^{\circ}C/W$	1.58				0.79				0.53				0.39			
Max Power Dissipation	P_{cTmax}	W	70				139				209				279			
Maximum Applied Bus Voltage ⁸	V_{DC}	$Volts$	325				325				325				325			
Electrical Cycle Length	E_c	mm	60				60				60				60			
Electrical Time Constant	τ_e	$msec$	1.6				1.6				1.6				1.6			
Maximum Coil Temperature	T_{max}	$^{\circ}C$	130				130				130				130			
Winding Type			D	E	F	G	D	E	F	G	D	E	F	G	D	E	F	G
Force Constant ¹	K_F	$\frac{N/A_{pk}}{(lb_f/A_{pk})}$	35.0 (7.9)	N/A	20.2 (4.5)	N/A	35.0 (7.9)	70.0 (15.7)	20.2 (4.5)	40.4 (9.1)	35.0 (7.9)	105.0 (23.6)	20.2 (4.5)	60.6 (13.6)	35.0 (7.9)	70.0 (15.7)	N/A	40.4 (9.1)
Back EMF Constant p-p ^{3,4}	K_e	$\frac{V_p/m/s}{(V_p/in/s)}$	41.3 (1.1)	N/A	23.9 (0.6)	N/A	41.3 (1.1)	82.7 (2.1)	23.9 (0.6)	47.7 (1.2)	41.3 (1.1)	124.0 (3.2)	23.9 (0.6)	71.6 (1.8)	41.3 (1.1)	82.7 (2.1)	N/A	47.7 (1.2)
Peak Current ^{2,4}	I_p	$\frac{A_{pk}}{(A_{rms})}$	15.1 (10.7)	N/A	26.2 (18.5)	N/A	30.2 (21.4)	15.1 (10.7)	52.3 (37.0)	26.2 (18.5)	45.3 (32.0)	15.1 (10.7)	78.5 (55.5)	26.2 (18.5)	60.4 (42.7)	30.2 (21.4)	N/A	52.3 (37.0)
Continuous Current ^{1,4,5,6}	I_{cTmax}	$\frac{A_{pk}}{(A_{rms})}$	3.0 (2.1)	N/A	5.2 (3.7)	N/A	6.0 (4.3)	3.0 (2.1)	10.5 (7.4)	5.2 (3.7)	9.1 (6.4)	3.0 (2.1)	15.7 (11.1)	5.2 (3.7)	12.1 (8.5)	6.0 (4.3)	N/A	10.5 (7.4)
Resistance p-p ³ @20°C	R_{20}	ohm	7.11	N/A	2.37	N/A	3.56	14.22	1.19	4.74	2.37	21.33	0.79	7.11	1.78	7.11	N/A	2.37
Inductance p-p ³	L	mH	11.08	N/A	3.69	N/A	5.54	22.16	1.85	7.39	3.69	33.25	1.23	11.08	2.77	11.08	N/A	3.69
Mechanical Parameters																		
Magnetic Attraction	F_a	$\frac{N}{(lb_f)}$	0 (0)				0 (0)				0 (0)				0 (0)			
Coil Mass	M_c	$\frac{kg}{(lb_m)}$	0.75 (1.66)				1.39 (3.07)				2.03 (4.47)				2.67 (5.88)			
Magnetic Channel Mass	M_n	$\frac{kg/m}{(lb/in)}$	15.59 (0.87)				15.59 (0.87)				15.59 (0.87)				15.59 (0.87)			

Notes: Motor performance specifications are with sinusoidal commutation.

- Continuous forces, motor constant and currents listed are with coils at maximum temperature 130°C, mounted to a heat sink that is equivalent to an aluminum slide 25.4mm (1.0") thick with the following areas: 120 coil 774cm² (120in²), 240 coil 1160cm² (180in²), 360 coil 1680cm² (260 in²), 480 coil 2060cm² (320 in²).
- Calculated at 4% duty cycle with a maximum on time of 1 second.
- All winding parameters listed are measured line-to-line (phase-to-phase).
- All currents and voltages are measured 0-peak of the sine wave unless noted rms.
- Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
- For stand still conditions multiply continuous force and continuous current by 0.9.
- Coil mountings on either of the two narrow sides reduces continuous force by 10%.
- Maximum cable length 10 meters. Please consult factory concerning applications requiring longer cables
All specifications are ±10%. Phase-to-phase inductance is ±30%.

Motor Phasing Diagram



Note: Phasing direction is coil moving towards motor power cable

Dimensions mm [in]

Size	Winding Code	Power Cable Dia.	Gauge
050-120	D F	φ6.1 (.24)	0.75mm ² (18)
050-240	D E F G	φ6.1 (.24)	0.75mm ² (18)
050-360	D E F G	φ6.1 (.24)	0.75mm ² (18)
050-480	D E G	φ6.1 (.24)	0.75mm ² (18)