

## Specifications LZ-050-0-XXX

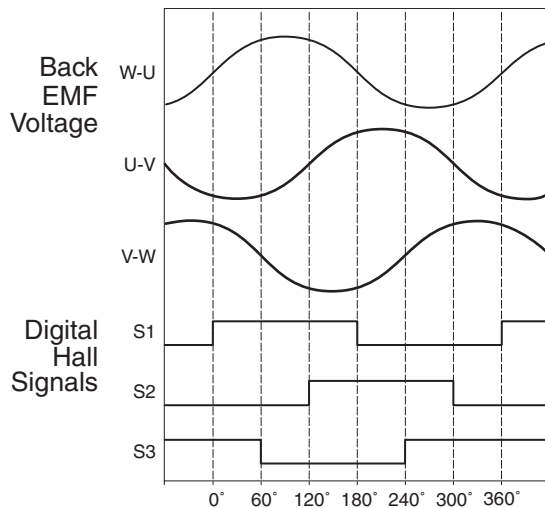


Performance Parameters	Symbol	Units	LZ-050-0-120				LZ-050-0-240				LZ-050-0-360				LZ-050-0-480			
Continuous Force <sup>1,5,6,7</sup>	$F_{cTmax}$	N (lbf)	106 (24)				212 (48)				317 (71)				423 (95)			
Peak Force <sup>2</sup>	$F_p$	N (lbf)	529 (119)				1058 (238)				1587 (357)				2116 (476)			
Motor Constant <sup>1</sup>	$K_M$	$\frac{N}{\sqrt{W}}$ ( $\frac{lbf}{\sqrt{W}}$ )	12.7 (2.8)				17.9 (4.0)				21.9 (4.9)				25.3 (5.7)			
Thermal Resistance	$R_{th}$	°C/W	1.58				0.79				0.53				0.39			
Max Power Dissipation	$P_{cTmax}$	W	70				139				209				279			
Maximum Applied Bus Voltage <sup>8</sup>	$V_{DC}$	Volts	325				325				325				325			
Electrical Cycle Length	$E_c$	mm	60				60				60				60			
Electrical Time Constant	$\tau_e$	msec	1.6				1.6				1.6				1.6			
Maximum Coil Temperature	$T_{max}$	°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 <sup>1</sup>	$K_F$	$\frac{N/A_{pk}}{(lbf/A_{pk})}$	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 <sup>3,4</sup>	$K_e$	$\frac{V_p/m/s}{(V_p/in/s)}$	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 <sup>2,4</sup>	$I_p$	$A_{pk}$ ( $A_{rms}$ )	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 <sup>1,4,5,6</sup>	$I_{cTmax}$	$A_{pk}$ ( $A_{rms}$ )	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 <sup>3</sup> @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 <sup>3</sup>	$L$	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
<b>Mechanical Parameters</b>																		
Magnetic Attraction	$F_a$	N (lbf)	0 (0)				0 (0)				0 (0)				0 (0)			
Coil Mass	$M_c$	kg (lbf <sub>m</sub> )	0.75 (1.66)				1.39 (3.07)				2.03 (4.47)				2.67 (5.88)			
Magnetic Channel Mass	$M_n$	kg/m (lbf/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 774cm<sup>2</sup> (120in<sup>2</sup>), 240 coil 1160cm<sup>2</sup> (180in<sup>2</sup>), 360 coil 1680cm<sup>2</sup> (260 in<sup>2</sup>), 480 coil 2060cm<sup>2</sup> (320 in<sup>2</sup>).
- 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 <sup>2</sup> (18)
050-240	D E F G	φ6.1 (.24)	0.75mm <sup>2</sup> (18)
050-360	D E F G	φ6.1 (.24)	0.75mm <sup>2</sup> (18)
050-480	D E G	φ6.1 (.24)	0.75mm <sup>2</sup> (18)

