

Specifications LZ-030-0-XXX

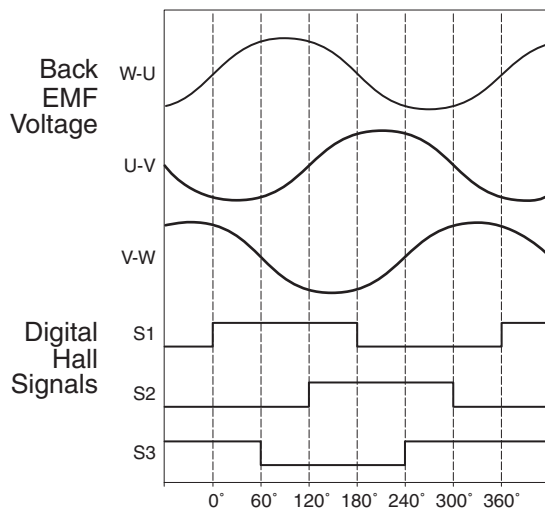


Performance Parameters	Symbol	Units	LZ-030-0-120				LZ-030-0-240				LZ-030-0-360				LZ-030-0-480			
Continuous Force ^{1,5,6,7}	F_{cTmax}	$\frac{N}{(lb_f)}$	70 (16)				139 (31)				209 (47)				278 (63)			
Peak Force ²	F_p	$\frac{N}{(lb_f)}$	348 (78)				695 (156)				1043 (234)				1390 (313)			
Motor Constant ¹	K_M	$\frac{N/\sqrt{-W}}{(lb_f/\sqrt{-W})}$	8.7 (2.0)				12.3 (2.8)				15.1 (3.4)				17.4 (3.9)			
Thermal Resistance	R_{th}	$^{\circ}C/W$	1.73				0.86				0.58				0.43			
Max Power Dissipation	P_{cTmax}	W	64				127				191				255			
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	$\frac{N/A_{pk}}{(lb_f/A_{pk})}$	21.0 (4.7)	N/A	12.1 (2.7)	N/A	21.0 (4.7)	42.0 (9.4)	12.1 (2.7)	24.3 (5.5)	21.0 (4.7)	63.0 (14.2)	N/A	36.4 (8.2)	21.0 (4.7)	42.0 (9.4)	N/A	24.3 (5.5)
Back EMF Constant p-p ^{3,4}	K_e	$\frac{V_p/m/s}{(V_p/in/s)}$	24.8 (0.6)	N/A	14.3 (0.4)	N/A	24.8 (0.6)	49.6 (1.3)	14.3 (0.4)	28.6 (0.7)	24.8 (0.6)	74.4 (1.9)	N/A	43.0 (1.1)	24.8 (0.6)	49.6 (1.3)	N/A	28.6 (0.7)
Peak Current ^{2,4}	I_p	$\frac{A_{pk}}{(A_{rms})}$	16.5 (11.7)	N/A	28.7 (20.3)	N/A	33.1 (23.4)	16.5 (11.7)	57.3 (40.5)	28.7 (20.3)	49.6 (35.1)	16.5 (11.7)	N/A	28.7 (20.3)	66.2 (46.8)	33.1 (23.4)	N/A	57.3 (40.5)
Continuous Current ^{1,4,5,6}	I_{cTmax}	$\frac{A_{pk}}{(A_{rms})}$	3.3 (2.3)	N/A	5.7 (4.1)	N/A	6.6 (4.7)	3.3 (2.3)	11.5 (8.1)	5.7 (4.1)	9.9 (7.0)	3.3 (2.3)	N/A	5.7 (4.1)	13.2 (9.4)	6.6 (4.7)	N/A	11.5 (8.1)
Resistance p-p ³ @20 $^{\circ}C$	R_{20}	ohm	5.41	N/A	1.80	N/A	2.70	10.82	0.90	3.61	1.80	16.23	N/A	5.41	1.35	5.41	N/A	1.80
Inductance p-p ³	L	mH	8.43	N/A	2.81	N/A	4.22	16.86	1.41	5.62	2.81	25.29	N/A	8.43	2.11	8.43	N/A	2.81
Mechanical Parameters																		
Magnetic Attraction	F_a	$\frac{N}{(lb_f)}$	0 (0)				0 (0)				0 (0)				0 (0)			
Coil Mass	M_c	$\frac{kg}{(lb_m)}$	0.63 (1.38)				1.14 (2.51)				1.65 (3.64)				2.16 (4.76)			
Magnetic Channel Mass	M_n	$\frac{kg/m}{(lb/in)}$	11.49 (0.64)				11.49 (0.64)				11.49 (0.64)				11.49 (0.64)			

Notes: Motor performance specifications are with sinusoidal commutation.

- Continuous forces, motor constant and currents listed are with coils at maximum temperature 130 $^{\circ}C$, 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 $\pm 10\%$. Phase-to-phase inductance is $\pm 30\%$.

Motor Phasing Diagram



Note: Phasing direction is coil moving towards motor power cable

Dimensions mm [in]

Size	Winding Code	Power Cable Dia.	Gauge
030-120	D F	$\phi 6.1 (.24)$	0.75mm ² (18)
030-240	D E F G	$\phi 6.1 (.24)$	0.75mm ² (18)
030-360	D E G	$\phi 6.1 (.24)$	0.75mm ² (18)
030-480	D E G	$\phi 6.1 (.24)$	0.75mm ² (18)