

Specifications LZ-030-0-XXX

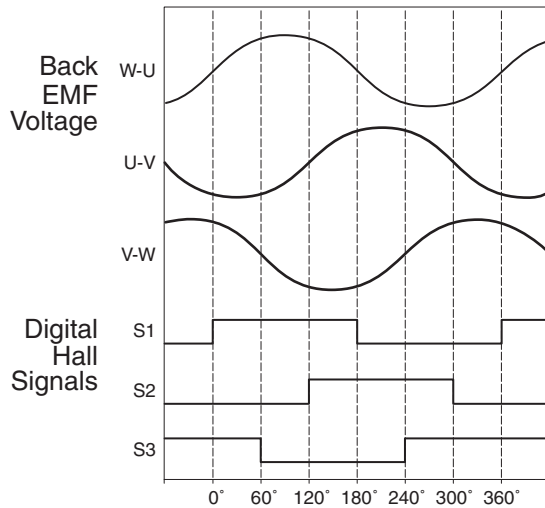


Performance Parameters	Symbol	Units	LZ-030-0-120				LZ-030-0-240				LZ-030-0-360				LZ-030-0-480			
Continuous Force ^{1,5,6,7}	F_{cTmax}	$\frac{N}{(lb_f)}$	70 (16)				139 (31)				209 (47)				278 (63)			
Peak Force ²	F_p	$\frac{N}{(lb_f)}$	348 (78)				695 (156)				1043 (234)				1390 (313)			
Motor Constant 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°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°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



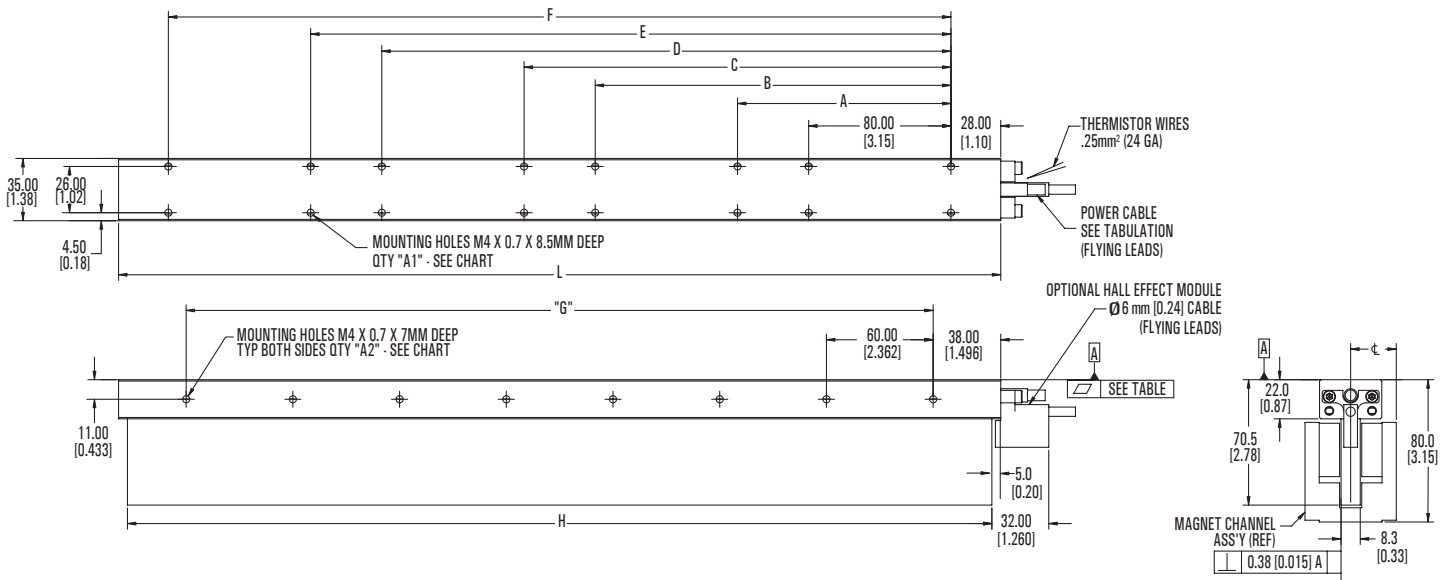
Note: Phasing direction is coil moving towards motor power cable

Dimensions mm [in]

Size	Winding Code	Power Cable Dia.	Gauge
030-120	D F	φ6.1 (.24)	0.75mm ² (18)
030-240	D E F G	φ6.1 (.24)	0.75mm ² (18)
030-360	D E G	φ6.1 (.24)	0.75mm ² (18)
030-480	D E G	φ6.1 (.24)	0.75mm ² (18)

Coil Assembly LZ-030-0-XXX

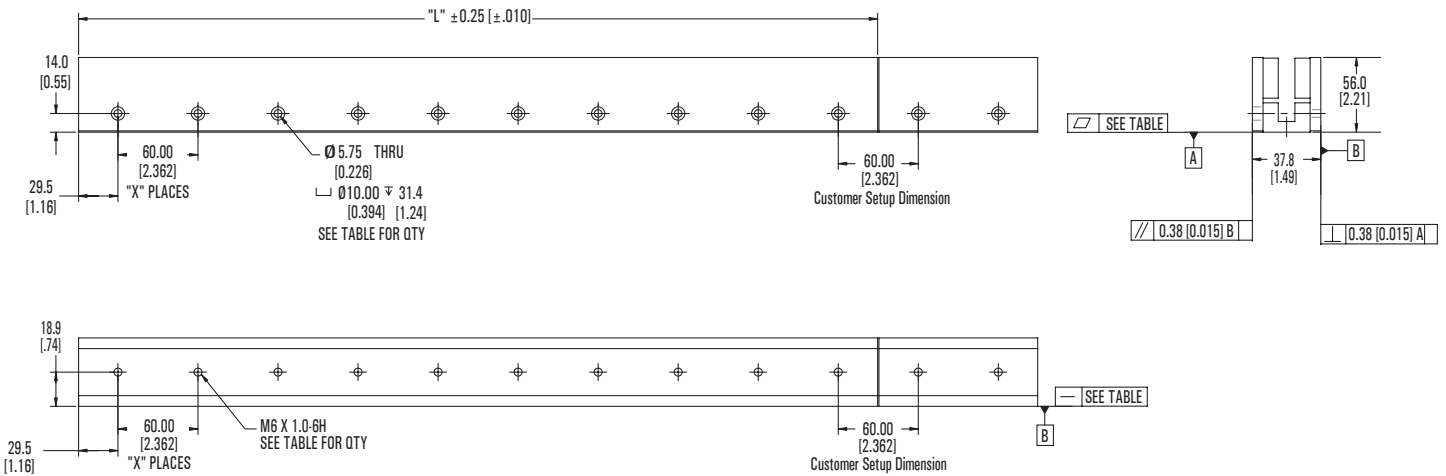
Dimensions mm [in]



Coil												
Size	L	A	B	C	D	E	F	G	H	A1 QTY	A2 QTY	Flatness A
030-120	136.00 (5.35)	---	---	---	---	---	---	60.00 (2.362)	126.0 (4.96)	4	3	0.25 (.010)
030-240	256.00 (10.08)	120.00 (4.724)	200.00 (7.874)	---	---	---	---	180.00 (7.087)	246.0 (9.69)	8	5	0.25 (.010)
030-360	376.00 (14.80)	120.00 (4.724)	200.00 (7.874)	240.00 (9.449)	320.00 (12.598)	---	---	300.00 (11.811)	366.0 (14.41)	12	7	0.38 (.015)
030-480	496.00 (19.53)	120.00 (4.724)	200.00 (7.874)	240.00 (9.449)	320.00 (12.598)	360.00 (14.173)	440.00 (17.323)	420.00 (16.535)	486.0 (19.13)	16	9	0.64 (.025)

Magnet Channel					
Size	L	X	Hole Qty	—	▤
-120	119.0 (4.69)	1	2	0.13 (.005)	0.13 (.005)
-180	179.0 (7.05)	2	3	0.13 (.005)	0.13 (.005)
-240	239.0 (9.41)	3	4	0.13 (.005)	0.13 (.005)
-480	479.0 (18.86)	7	8	0.26 (.010)	0.26 (.010)
-600	599.0 (23.58)	9	10	0.26 (.010)	0.26 (.010)

Magnet Channel LZM-030-0-XXX



Tolerances

Metric	English
.x ± .25	[.xx] ± .01
.xx ± .13	[.xxx] ± .005