



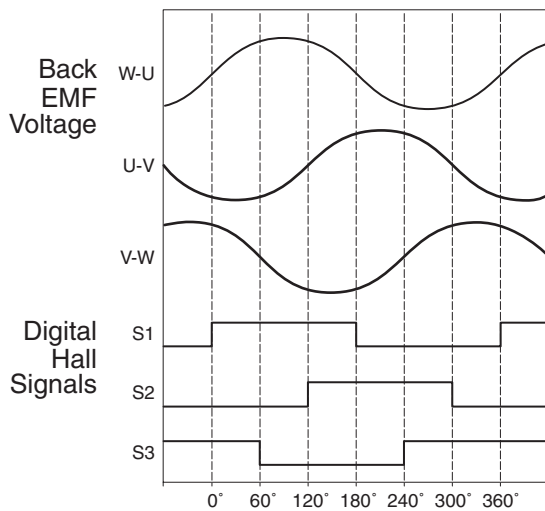
## Specifications LZ-030-T-XXX

Performance Parameters	Symbol	Units	LZ-030-T-120				LZ-030-T-240				LZ-030-T-360				LZ-030-T-480			
Continuous Force <sup>1,5,6,7</sup>	$F_{cTmax}$	N (lbf)	80 (18)				160 (36)				239 (54)				319 (72)			
Peak Force <sup>2</sup>	$F_p$	N (lbf)	399 (90)				798 (179)				1197 (269)				1595 (359)			
Motor Constant <sup>1</sup>	$K_M$	$\frac{N}{\sqrt{W}}$ ( $\frac{lbf}{\sqrt{W}}$ )	8.7 (2.0)				12.3 (2.8)				15.1 (3.4)				17.4 (3.9)			
Thermal Resistance	$R_{th}$	°C/W	1.31				0.65				0.44				0.33			
Max Power Dissipation	$P_{cTmax}$	W	84				168				252				336			
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	1.9				1.9				1.9				1.9			
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>	$K_F$	$\frac{N/A_{pk}}{(lbf/A_{pk})}$	24.1 (5.4)	N/A	13.9 (3.1)	N/A	24.1 (5.4)	48.2 (10.8)	13.9 (3.1)	27.8 (6.3)	24.1 (5.4)	72.3 (16.3)	N/A	41.8 (9.4)	24.1 (5.4)	48.2 (10.8)	N/A	27.8 (6.3)
Back EMF Constant p-p <sup>3,4</sup>	$K_e$	$\frac{V_p/m/s}{(V_p/in/s)}$	28.5 (0.7)	N/A	16.4 (0.4)	N/A	28.5 (0.7)	56.9 (1.4)	16.4 (0.4)	32.9 (0.8)	28.5 (0.7)	85.4 (2.2)	N/A	49.3 (1.3)	28.5 (0.7)	56.9 (1.4)	N/A	32.9 (0.8)
Peak Current <sup>2,4</sup>	$I_p$	$A_{pk}$ ( $A_{rms}$ )	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 <sup>1,4,5,6</sup>	$I_{cTmax}$	$A_{pk}$ ( $A_{rms}$ )	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 <sup>3</sup> @20°C	$R_{20}$	ohm	7.15	N/A	2.38	N/A	3.57	14.29	1.19	4.76	2.38	21.44	N/A	7.15	1.79	7.15	N/A	2.38
Inductance p-p <sup>3</sup>	L	mH	13.40	N/A	4.47	N/A	6.70	26.80	2.23	8.93	4.47	40.20	N/A	13.40	3.35	13.40	N/A	4.47
<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> )	0.74 (1.64)				1.37 (3.02)				2.00 (4.41)				2.63 (5.79)			
Magnetic Channel Mass	$M_n$	kg/m (lbf/in)	11.66 (0.65)				11.66 (0.65)				11.66 (0.65)				11.66 (0.65)			

**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



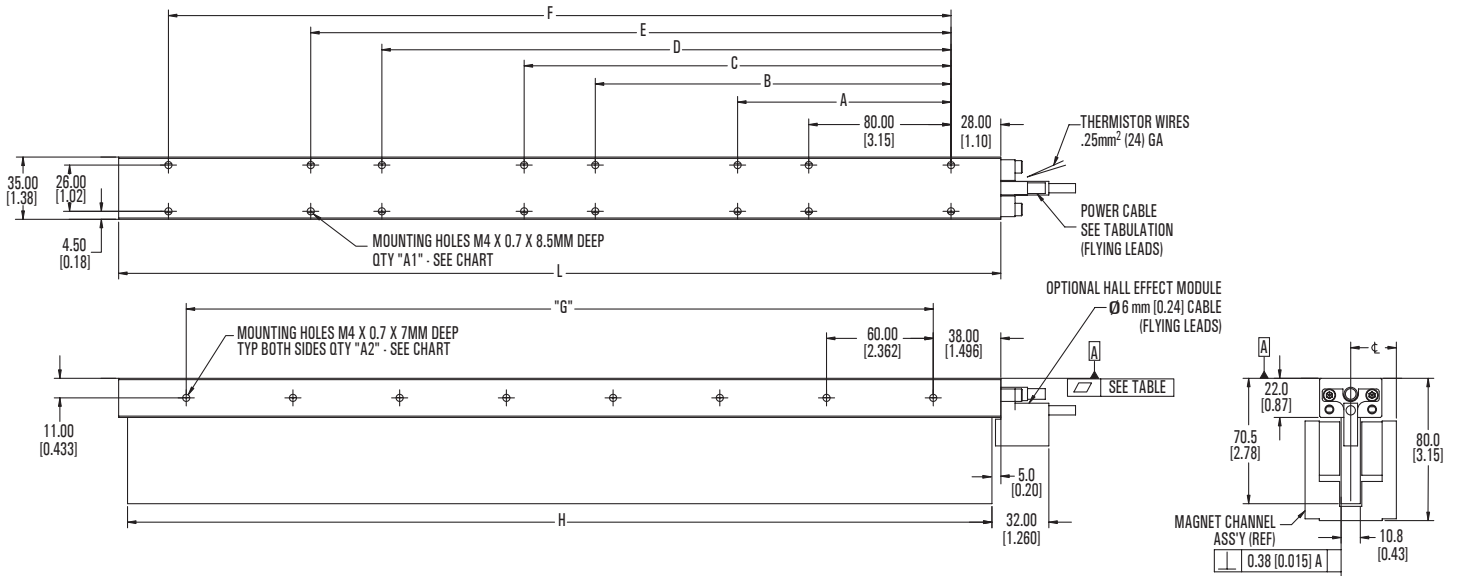
Note: Phasing direction is coil moving towards motor power cable

### Dimensions mm [in]

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

# Coil Assembly LZ-030-T-XXX

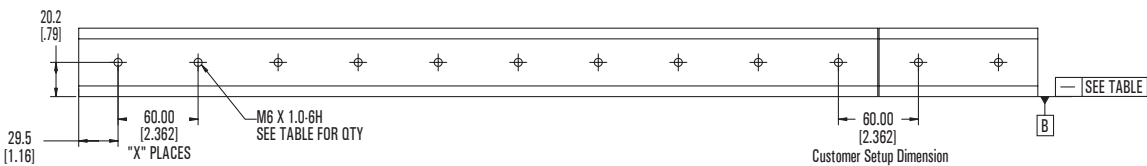
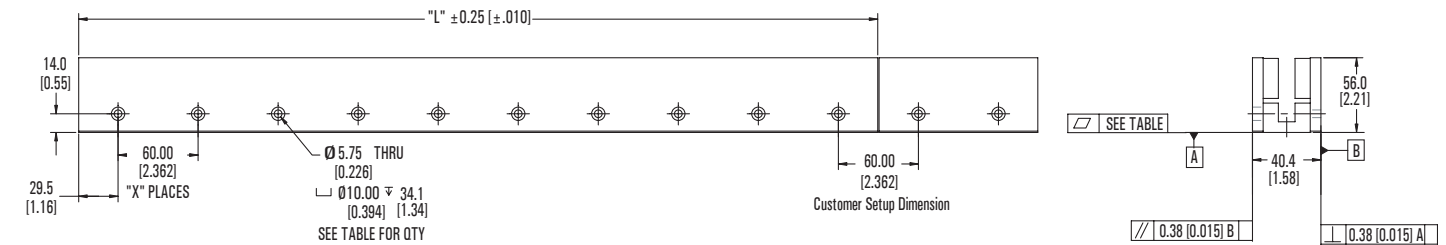
Dimensions mm [in]



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-T-XXX



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