

1500 Series Brushless Linear Servo Motor



1500 LMST Motor Data

	Units	1500-1	1500-2	1500-3	1500-4
Coil Length	IN[mm]	2.4[60.96]	4.8[121.92]	7.2[182.88]	9.6[243.84]
Bracket Length****	IN[mm]	3.6[91.44]	6.0[152.40]	8.4[213.36]	10.8[274.32]
Coil Weight	LBS[Kg]	0.23[0.104]	0.55[0.249]	0.78[0.353]	1.10[0.498]
Magnet Track Weight***	LBS/FT[gr/mm]	3.7[5.51]	3.7[5.51]	3.7[5.51]	3.7[5.51]
Max. Operating Temp	°C	125	125	125	125

Series Connected Coils	Units	1500-1	1500-2	1500-3	1500-4
Force Constant	LBS[N]/AMP	1.58[7.03]	3.15[14.01]	4.73[21.04]	6.30[28.02]
Continuous Force	LBS[N]	5.04[22.42]	10.14[45.01]	15.17[67.76]	20.16[89.68]
Continuous Current**	AMPS	3.3	3.3	3.3	3.3
Continuous Power at 125°C	WATTS	103.0	206.3	310.0	413.0
Peak Force	LBS[N]	16.07[71.48]	32.14[142.97]	48.16[214.23]	63.84[283.97]
Peak Current	AMPS	10.44	10.44	10.44	10.44
Peak Power at 125°C	WATTS	1032.0	2063.0	3095.0	4126.0
Coil Resistance* at 25°C at Motor	OHMS	10.20	20.40	30.60	40.80
Phase Resistance* at 25°C in Delta	OHMS	6.80	13.60	20.40	27.20
Coil Resistance* at max operating temp at Coil	OHMS	14.21	28.42	42.63	56.83
Phase Resistance* at max operating temp in Delta	OHMS	9.47	18.94	28.42	37.89
Inductance at 1KHZ	mH	2.02	4.04	6.06	8.08
Back EMF Constant	V/IPS[V/MPS]	0.16[6.30]	0.31[12.20]	0.47[18.50]	0.62[24.41]
Electrical Time Constant*	MSEC	0.17	0.17	0.17	0.17

Parallel Connected Coils	Units	1500-1	1500-2	1500-3	1500-4
Force Constant	LBS[N]/AMP	0.79[3.51]	1.57[6.98]	2.35[10.45]	3.08[13.70]
Continuous Force	LBS[N]	5.04[22.42]	10.14[45.10]	15.12[67.26]	20.16[89.68]
Continuous Current**	AMPS	6.6	6.6	6.6	6.6
Continuous Power at 125°C	WATTS	103.0	206.3	310.0	413.0
Peak Force	LBS[N]	16.07[71.48]	32.14[142.97]	48.16[214.23]	63.84[283.97]
Peak Current	AMPS	20.87	20.87	20.87	20.87
Peak Power at 125°C	WATTS	1032.0	2063.0	3100.0	4126.0
Coil Resistance* at 25°C at Motor	OHMS	2.55	5.10	7.65	10.20
Phase Resistance* at 25°C in Delta	OHMS	1.70	3.40	5.10	6.80
Coil Resistance* at max operating temp at Coil	OHMS	3.55	7.10	10.66	14.21
Phase Resistance* at max operating temp in Delta	OHMS	2.37	4.74	7.10	9.47
Inductance at 1KHZ	mH	0.51	1.01	1.52	2.02
Back EMF Constant	V/IPS[V/MPS]	0.08[3.15]	0.16[6.30]	0.23[9.06]	0.31[12.20]
Electrical Time Constant*	MSEC	0.08	0.08	0.08	0.08

*These specifications reflect a 6-lead or delta connection coil with 1 foot of cable. A 6-lead motor has starts/finishes available at the cable end for control of each individual phase. Additional cable will increase resistance values.
 **An appropriate heatsink is required to dissipate the continuous power generated by the motor coil, thus maintaining the coil assembly at or below the maximum specified operating temperature. Consult the Compumotor applications manual for more detail on thermal management.
 ***Magnet track weight specified for 1500-LMST model. Lightweight magnet tracks are available. Please consult with your local representative or Compumotor for more information.
 ****Without Hall Effect Device

1500 LMDT Motor Data

	Units	1500-1	1500-2	1500-3	1500-4
Coil Length	IN[mm]	2.4[60.96]	4.8[121.92]	7.2[182.88]	9.6[243.84]
Bracket Length****	IN[mm]	3.6[91.44]	6.0[152.40]	8.4[213.36]	10.8[274.32]
Coil Weight	LBS[Kg]	0.23[0.104]	0.55[0.249]	0.78[0.353]	1.1[0.498]
Magnet Track Weight***	LBS/FT[gr/mm]	3.7[5.51]	3.7[5.51]	3.7[5.51]	3.7[5.51]
Max. Operating Temp	°C	125	125	125	125

Series Connected Coils	Units	1500-1	1500-2	1500-3	1500-4
Force Constant	LBS[N]/AMP	2.8[12.46]	5.5[24.47]	8.3[36.92]	11.0[48.93]
Continuous Force	LBS[N]	9.0[40.03]	18.1[80.51]	27.0[120.10]	36.0[160.14]
Continuous Current**	AMPS	3.3	3.3	3.3	3.3
Continuous Power at 125°C	WATTS	103.0	206.3	310.0	413.0
Peak Force	LBS[N]	28.7[127.66]	57.4[255.33]	86.0[382.55]	114.0[507.10]
Peak Current	AMPS	10.44	10.44	10.44	10.44
Peak Power at 125°C	WATTS	1032.0	2063.0	3095.0	4126.0
Coil Resistance* at 25°C at Motor	OHMS	10.20	20.40	30.60	40.80
Phase Resistance* at 25°C in Delta	OHMS	6.80	13.60	20.40	27.20
Coil Resistance* at max operating temp at Coil	OHMS	14.21	28.42	42.63	56.83
Phase Resistance* at max operating temp in Delta	OHMS	9.47	18.94	28.42	37.89
Inductance at 1KHZ	mH	2.02	4.04	6.06	8.08
Back EMF Constant	V/IPS[V/MPS]	0.28[11.02]	0.55[21.65]	0.83[32.68]	1.10[43.31]
Electrical Time Constant*	MSEC	0.30	0.30	0.30	0.30

Parallel Connected Coils	Units	1500-1	1500-2	1500-3	1500-4
Force Constant	LBS[N]/AMP	1.4[6.23]	2.8[12.46]	4.2[18.68]	5.5[24.47]
Continuous Force	LBS[N]	9.0[40.03]	18.1[80.51]	27.0[120.10]	36.0[160.14]
Continuous Current**	AMPS	6.6	6.6	6.6	6.6
Continuous Power at 125°C	WATTS	103.0	206.3	310.0	413.0
Peak Force	LBS[N]	28.7[127.66]	57.4[255.33]	86.0[382.55]	114.0[507.10]
Peak Current	AMPS	20.87	20.87	20.87	20.87
Peak Power at 125°C	WATTS	1032.0	2063.0	3100.0	4126.0
Coil Resistance* at 25°C at Motor	OHMS	2.55	5.10	7.65	10.20
Phase Resistance* at 25°C in Delta	OHMS	1.70	3.40	5.10	6.80
Coil Resistance* at max operating temp at Coil	OHMS	3.55	7.10	10.66	14.21
Phase Resistance* at max operating temp in Delta	OHMS	2.37	4.74	7.10	9.47
Inductance at 1KHZ	mH	0.51	1.01	1.52	2.02
Back EMF Constant	V/IPS[V/MPS]	0.14[5.51]	0.28[11.02]	0.41[16.14]	0.55[21.65]
Electrical Time Constant*	MSEC	0.14	0.14	0.14	0.14

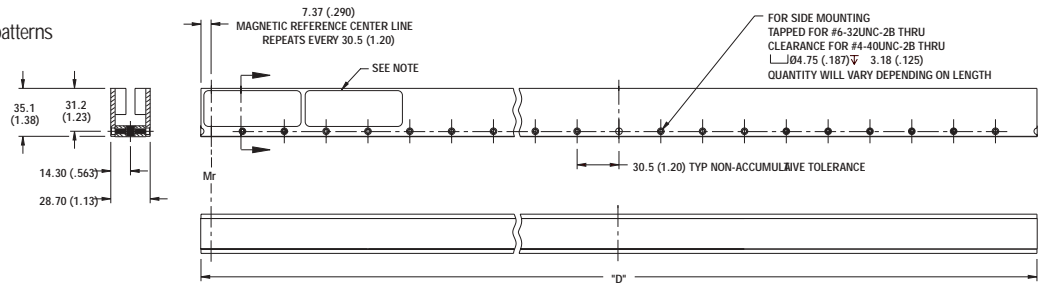
*These specifications reflect a 6-lead or delta connection coil with 1 foot of cable. A 6-lead motor has starts/finishes available at the cable end for control of each individual phase. Additional cable will increase resistance values.
 **An appropriate heatsink is required to dissipate the continuous power generated by the motor coil, thus maintaining the coil assembly at or below the maximum specified operating temperature. Consult the Compumotor applications manual for more detail on thermal management.
 ***Magnet track weight specified for 1500-LMDT model. Lightweight magnet tracks are available. Please consult with your local representative or Compumotor for more information.
 ****Without Hall Effect Device

1500 Series Magnet Track

Customer will also have 1/4-28UNF-2Bholes in the bottom for mounting.

Consult factory for specific mounting patterns for different magnet track lengths.

Note: Labels are placed on non-flat side of track.

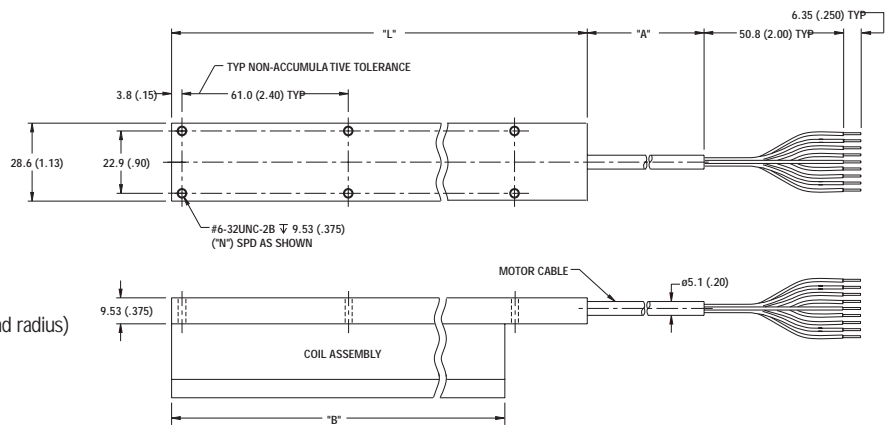


1500 Series Coil

Coil Length	"L" in / mm	"N" # of Holes	"B" in / mm
1	3.6 / 91.4	4	2.41 / 61.2
2	6.0 / 152.4	6	4.81 / 122.2
3	8.4 / 213.4	8	7.21 / 183.1
4	10.8 / 274.3	10	9.61 / 244.1

Travel distance (no vertical obstruction) = Magnet track length ("D") – Coil length ("B")

Travel distance (with vertical obstruction) = Magnet track length ("D") – (Coil length ("L") + 2.0" Cable bend radius)

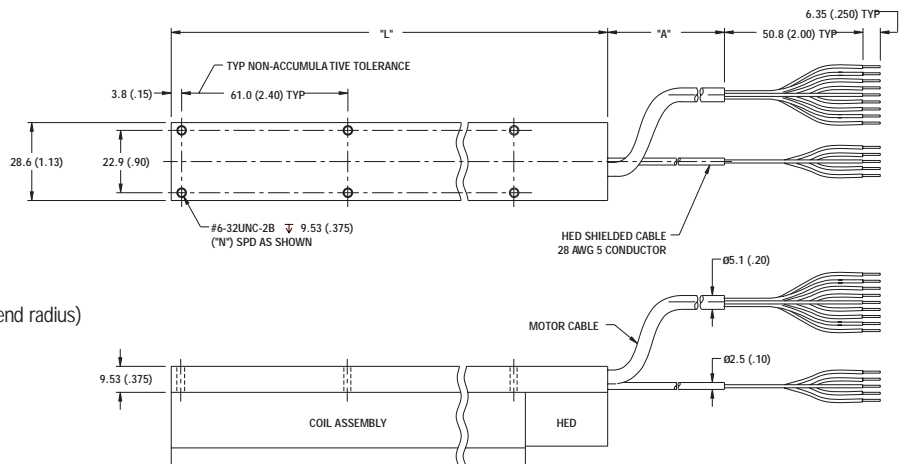


1500 Series Coil/120° HED

Coil Length	"L" in / mm	"N" # of Holes
1	3.9 / 99.1	4
2	6.3 / 160.0	6
3	8.7 / 221.0	8
4	11.1 / 281.9	10

Travel distance (no vertical obstruction) = Magnet track length ("D") – Coil length ("L")

Travel distance (with vertical obstruction) = Magnet track length ("D") – (Coil length ("L") + 2.0" Cable bend radius)

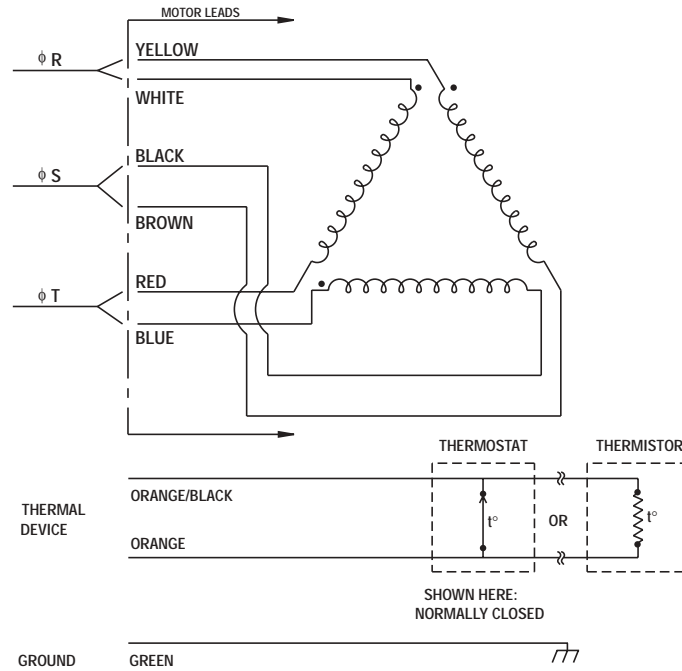


Motor/Hall Wiring

Hall Commutation

SHLD	SHLD
BLK	GND
RED	+5VDC
GRN	W
BLUE	V
WHT	U

Care should be taken to center coil within the track as evenly as possible in all directions when mounting the magnet track and coil.



For Detailed Commutation, Consult Factory.

Additional Products

To meet all of your linear motion requirements, these additional products and linear system capabilities are available:

- Custom Mounting Holes/Brackets
- Clean Room Compatibility
- Cable/Connector Options
- Air Cooling
- Water Cooling