

## 1200 Series PERFORMANCE SPECIFICATIONS

### 1200 LMDT Motor Data

	Units	1200-1	1200-2	1200-3	1200-4
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]	0.22[0.099]	0.44[0.199]	0.66[0.299]	0.88[0.399]
Magnet Track Weight****	LBS/FT[gr/mm]	2.0[2.98]	2.0[2.98]	2.0[2.98]	2.0[2.98]
Max. Operating Temp	°C	125	125	125	125

Series Connected Coils	Units	1200-1	1200-2	1200-3	1200-4
Force Constant	LBS[N]/AMP	2.0[8.90]	4.0[17.79]	6.0[26.69]	8.0[35.59]
Continuous Force	LBS[N]	6.0[26.69]	12.0[53.38]	18.0[80.07]	24.0[106.76]
Continuous Current**	AMPS	3.0	3.0	3.0	3.0
Continuous Power at 125°C	WATTS	98.19	193.83	290.74	387.66
Peak Force	LBS[N]	18.97[84.38]	37.95[168.81]	56.94[253.26]	75.89[337.58]
Peak Current	AMPS	9.49	9.49	9.49	9.49
Peak Power at 125°C	WATTS	982.0	1938.0	2907.0	3877.0
Coil Resistance* at 25°C at Motor	OHMS	10.86	21.72	32.58	43.44
Phase Resistance* at 25°C in Delta	OHMS	7.24	14.48	21.72	28.96
Coil Resistance* at max operating temp at Coil	OHMS	16.37	32.30	48.46	64.61
Phase Resistance* at max operating temp in Delta	OHMS	10.91	21.54	32.30	43.07
Inductance at 1kHz	mH	1.98	3.96	5.94	7.92
Back EMF Constant	V/IPS[V/MPS]	0.23[9.06]	0.47[18.50]	0.70[27.56]	0.93[36.61]
Electrical Time Constant*	MSEC	0.18	0.18	0.18	0.18

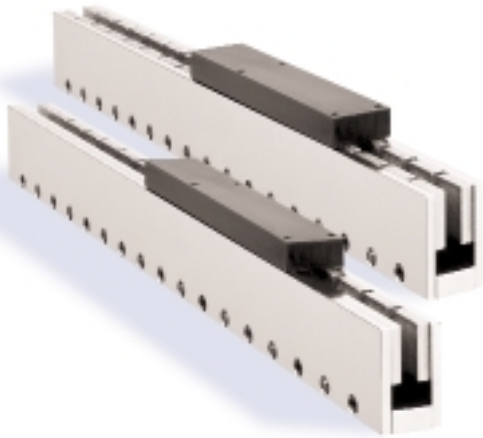
Parallel Connected Coils	Units	1200-1	1200-2	1200-3	1200-4
Force Constant	LBS[N]/AMP	1.0[4.45]	2.0[8.90]	3.0[13.34]	4.0[17.79]
Continuous Force	LBS[N]	6.0[26.69]	12.0[53.38]	18.0[80.07]	24.0[106.76]
Continuous Current**	AMPS	6.0	6.0	6.0	6.0
Continuous Power at 125°C	WATTS	98.19	193.83	290.74	387.66
Peak Force	LBS[N]	18.97[84.38]	37.95[168.81]	56.94[253.26]	75.89[337.58]
Peak Current	AMPS	18.97	18.97	18.97	18.97
Peak Power at 125°C	WATTS	982.0	1938.0	2907.0	3877.0
Coil Resistance* at 25°C at Motor	OHMS	2.72	5.43	8.15	10.86
Phase Resistance* at 25°C in Delta	OHMS	1.81	3.62	5.43	7.24
Coil Resistance* at max operating temp at Coil	OHMS	4.09	8.08	12.11	16.15
Phase Resistance* at max operating temp in Delta	OHMS	2.73	5.38	8.08	10.77
Inductance at 1kHz	mH	0.50	0.99	1.49	1.98
Back EMF Constant	V/IPS[V/MPS]	0.12[4.53]	0.24[9.25]	0.35[13.78]	0.47[18.31]
Electrical Time Constant*	MSEC	0.18	0.18	0.18	0.18

\*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 MTS Automation applications manual for more detail on thermal management.

\*\*\*Magnet track weight specified for 1200-LMDT model. Lightweight magnet tracks are available. Please consult with your local representative or MTS Automation for more information.

\*\*\*\*Without Hall Effect Device



## 1200 Series

### PERFORMANCE SPECIFICATIONS

#### 1200 LMST Motor Data

	Units	1200-1	1200-2	1200-3	1200-4
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]	0.22[0.099]	0.44[0.199]	0.66[0.299]	0.88[0.399]
Magnet Track Weight****	LBS/FT[gr/mm]	2.0[2.98]	2.0[2.98]	2.0[2.98]	2.0[2.98]
Max. Operating Temp	°C	125	125	125	125

Series Connected Coils	Units	1200-1	1200-2	1200-3	1200-4
Force Constant	LBS[N]/AMP	1.12[4.98]	2.24[9.96]	3.36[14.95]	4.48[19.93]
Continuous Force	LBS[N]	3.36[14.95]	6.72[29.89]	10.08[44.84]	13.44[59.78]
Continuous Current**	AMPS	3.0	3.0	3.0	3.0
Continuous Power at 125°C	WATTS	98.19	193.83	290.74	387.66
Peak Force	LBS[N]	10.62[47.24]	21.25[94.52]	31.88[141.81]	42.50[189.05]
Peak Current	AMPS	9.49	9.49	9.49	9.49
Peak Power at 125°C	WATTS	982.0	1938.0	2907.0	3877.0
Coil Resistance* at 25°C at Coil	OHMS	10.86	21.72	32.58	43.44
Phase Resistance* at 25°C in Delta	OHMS	7.24	14.48	21.72	28.96
Coil Resistance* at max operating temp at Coil	OHMS	16.37	32.30	48.46	64.61
Phase Resistance* at max operating temp in Delta	OHMS	10.91	21.54	32.30	43.07
Inductance at 1kHz	mH	1.98	3.96	5.94	7.92
Back EMF Constant	V/IPS[V/MPS]	0.13[5.12]	0.26[10.23]	0.39[15.35]	0.52[20.47]
Electrical Time Constant*	MSEC	0.10	0.10	0.10	0.10

Parallel Connected Coils	Units	1200-1	1200-2	1200-3	1200-4
Force Constant	LBS[N]/AMP	0.56[2.49]	1.12[4.98]	2.24[9.96]	3.36[14.95]
Continuous Force	LBS[N]	3.36[14.95]	6.72[29.89]	10.08[44.84]	13.44[59.78]
Continuous Current**	AMPS	6.0	6.0	6.0	6.0
Continuous Power at 125°C	WATTS	98.19	193.83	290.74	387.66
Peak Force	LBS[N]	10.62[47.24]	21.25[94.52]	31.88[141.81]	42.50[189.05]
Peak Current	AMPS	18.97	18.97	18.97	18.97
Peak Power at 125°C	WATTS	982.0	1938.0	2907.0	3877.0
Coil Resistance* at 25°C at Coil	OHMS	2.72	5.43	8.15	10.86
Phase Resistance* at 25°C in Delta	OHMS	1.81	3.62	5.43	7.24
Coil Resistance* at max operating temp at Coil	OHMS	4.09	8.08	12.11	16.15
Phase Resistance* at max operating temp in Delta	OHMS	2.73	5.38	8.08	10.77
Inductance at 1kHz	mH	0.50	0.99	1.49	1.98
Back EMF Constant	V/IPS[V/MPS]	0.06[2.36]	0.13[5.12]	0.20[7.87]	0.26[10.23]
Electrical Time Constant*	MSEC	0.10	0.10	0.10	0.10

\*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 MTS Automation applications manual for more detail on thermal management.

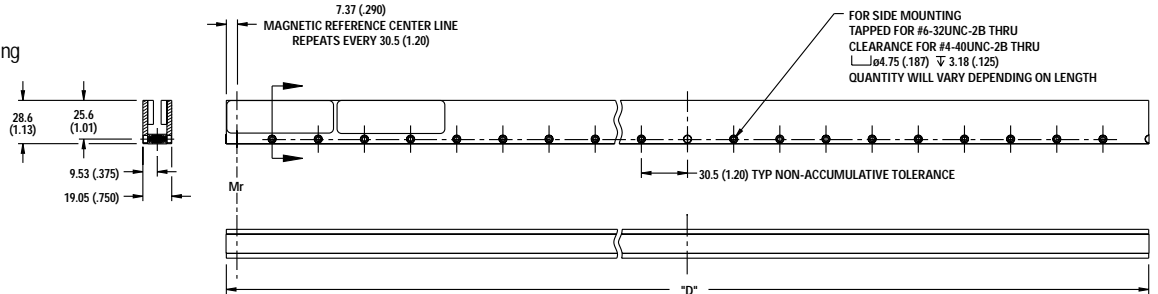
\*\*\*Magnet track weight specified for 1200-LMST model. Lightweight magnet tracks are available. Please consult with your local representative or MTS Automation for more information.

\*\*\*\*Without Hall Effect Device

## 1200 Series Magnet Track

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

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

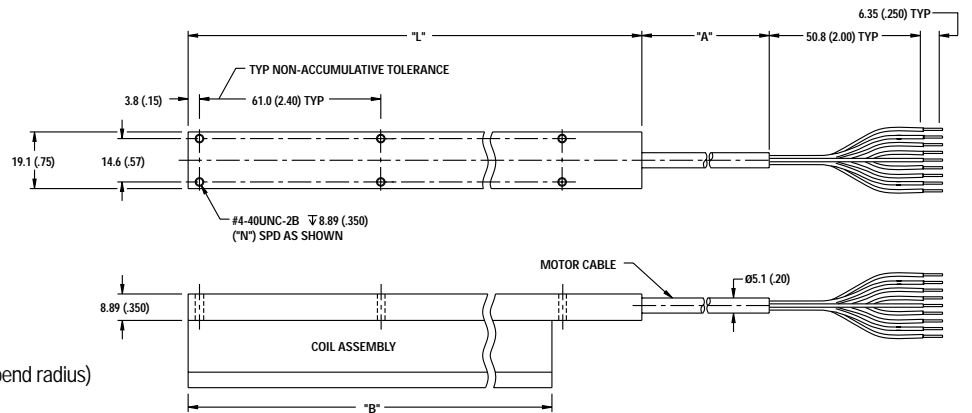


## 1200 Series Coil

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)

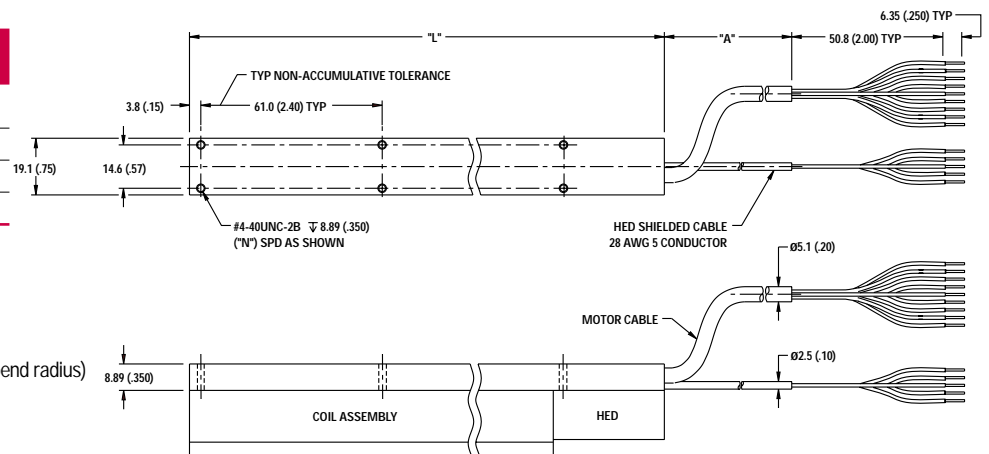


## 1200 Series Coil/120° HED

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)

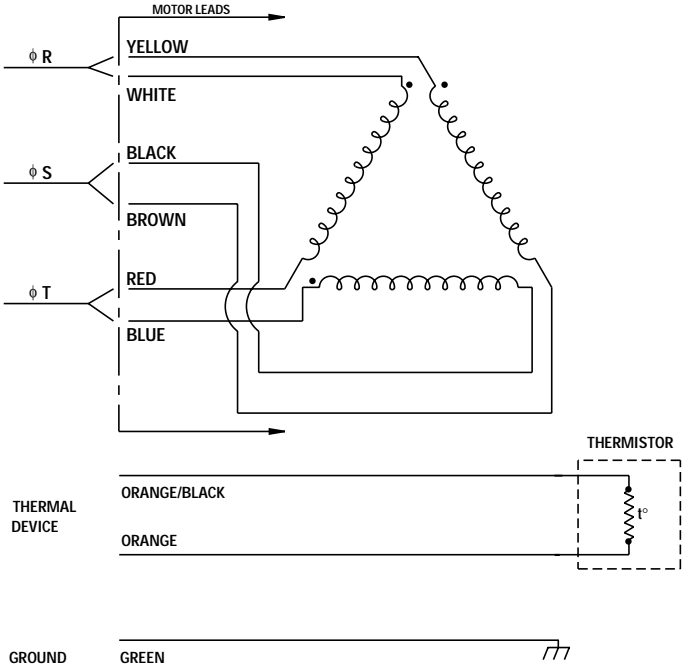


**Motor/Hall Wiring**

**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