LMFP64-Q40 Linear Motor DB100215-V1.00

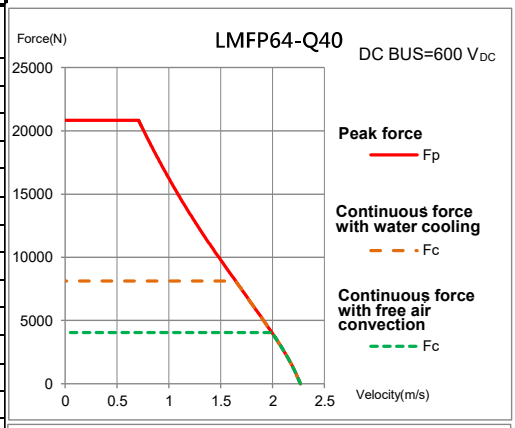
Electrical specifications

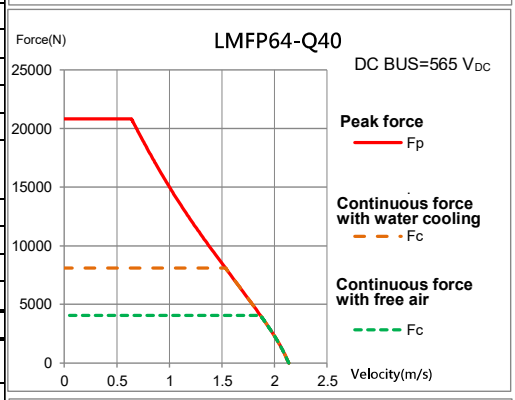
	Symbol	Unit	Free air convection	Water cooling
Continuous force	F_c	N	4058	8115
Continuous current	I_c	A_{rms}	13.9	27.8
Stall force	F_0	N	-	5693
Stall current	I_0	A_{rms}	-	19.5
Peak force (1s)	F_p	N	20827	
Peak current (1s)	I_p	A_{rms}	83.8	
Force constant	K_f	N/A_{rms}	291.7	
Attraction force	F_a	N	37454	
Max. winding tempurature	T_{max}	℃	120	
Electrical time constant	K_e	ms	12.4	
Resistance (line to line · 25℃)	R_{25}	Ω	2.6	
Resistance (line to line · 120℃)	R_{120}	Ω	3.6	
Inductance (line to line)	L	mH	32.2	
Pole pair pitch	2τ	mm	46	
Back emf constant(line to line)	K_v	$V_{rms}/(m/s)$	168.4	
Motor constant (25℃)	K_m	$N/\sqrt{W}$	147.8	
Thermal resistance	R_{th}	℃/W	0.09	0.02
Thermal time constant	t_{th}	s		150
Thermal switch			1 x Pt1000 + 1 x (3 PTC SNM 120 In Series)	
Maximum velocity at maximum force	$V_{MAX,FP}$	m/s	0.7	
Maximum electric power input	$P_{EL,MAX}$	W	-	52500
Maximum dissipated heat output	$Q_{P,H,MAX}$	W	-	4173
Max. DC bus voltage		V_{DC}	750	

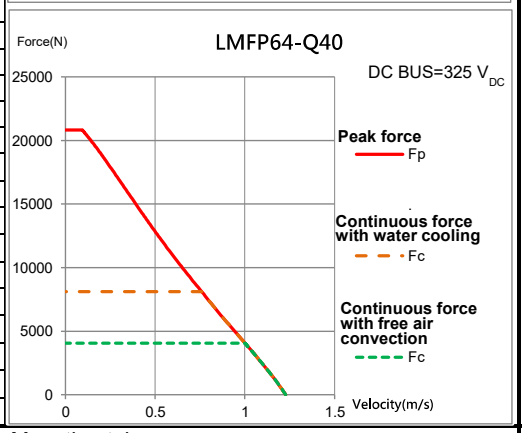
Mechanical specifications

	Symbol	Unit	Free air convection	Water cooling
Mass of forcer	M_f	kg	57.6	
Unit mass of stator	M_S	kg	40.1	
Total installation height	H	mm	66.1	
Minimum flow rate		L/min	-	7.8
Temperature of cooling water		℃	-	20
Pressure drop	△P	bar	-	3
Water temperture difference	$\triangle\theta_{P,H}$	K	-	7.7
Forcer precision cooler				
Maximum dissipated thermal output	$Q_{FC,Max}$	W	-	164
Pressure drop	$\triangle P_{FC}$	bar	-	6.8
Stator precision cooler				
Maximum dissipated thermal output	$Q_{SC,Max}$	W	-	491
Pressure drop per meter of cooling pipe	$\triangle P_S$	bar	-	0.09
Pressure drop per combi distributor	$\triangle P_{Sd}$	bar	-	0.4
Pressure drop per coupling point	$\triangle P_{SP}$	bar	-	0.09

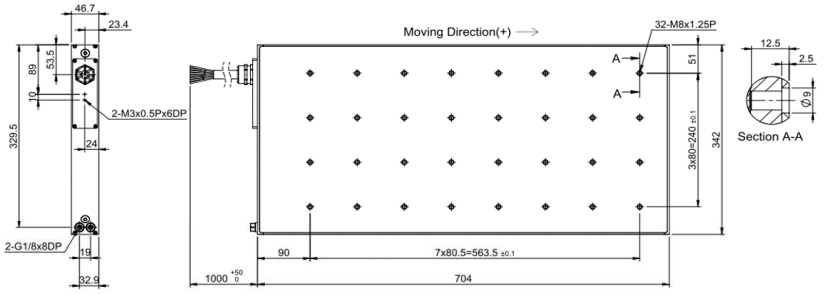
F-V curve



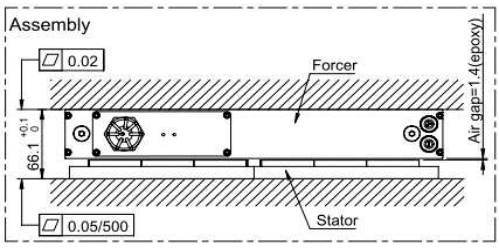




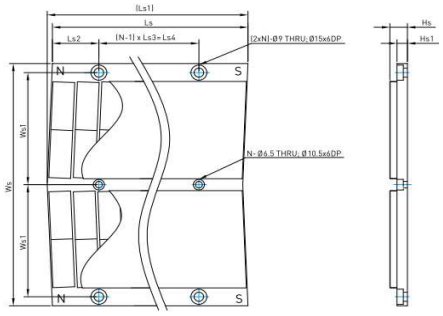
Forcer dimensions



Mounting tolerance



Stator dimensions



Wiring diagram

WIRING DIAGRAM		
Cable	Signal	
L1/U	U	
L2/V	V	
L3/W	W	
Yellow/Green	⏚	
Shield		
Red	T1+	PTC SNM120
Yellow	T1-	
Black	T2+	Pt1000
White	T2-	

Type	Ls	Ls1	Ls2	Ls3	Ls4	Hs	Hs1	Ws	Ws1	N
LMF6S1E	184	188.66	20.97	46	138	18	11.8	334	158	4

Except dimensions, all the specifications in the table are in ±10% of tolerance

Version: 1.00

Date: 2021/1/29