

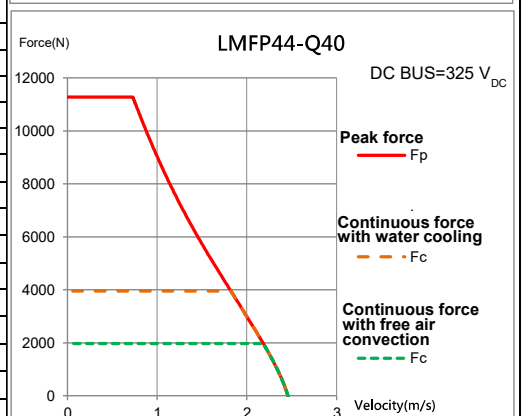
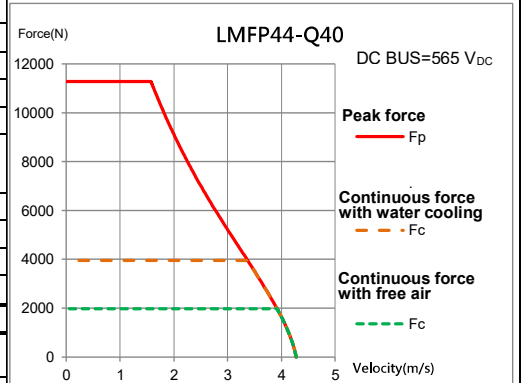
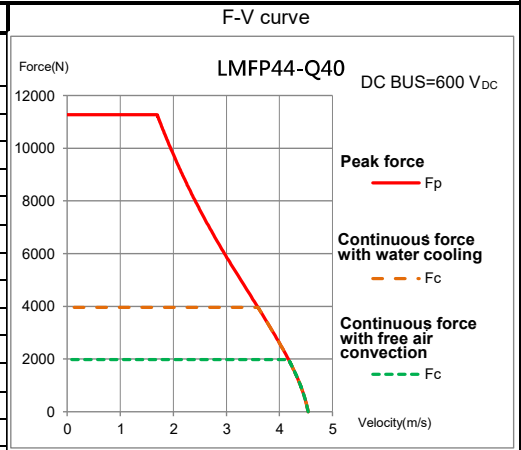
LMFP44-Q40

Linear Motor

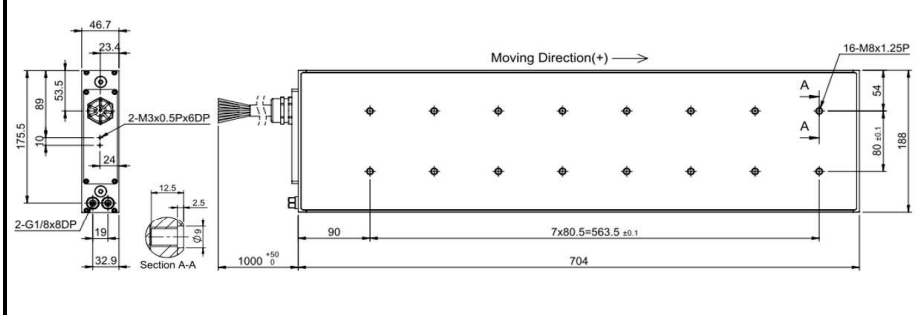
DB100204-V1.00

Electrical specifications				
	Symbol	Unit	Free air convection	Water cooling
Continuous force	F_c	N	1979	3958
Continuous current	I_c	A_{rms}	13.6	27.2
Stall force	F_0	N	-	2765
Stall current	I_0	A_{rms}	-	19
Peak force (1s)	F_p	N	11280	
Peak current (1s)	I_p	A_{rms}	90.9	
Force constant	K_f	N/A_{rms}	145.7	
Attraction force	F_a	N	18727	
Max. winding temperature	T_{max}	$^{\circ}C$	120	
Electrical time constant	K_e	ms	12.4	
Resistance (line to line · 25 $^{\circ}C$)	R_{25}	Ω	1.3	
Resistance (line to line · 120 $^{\circ}C$)	R_{120}	Ω	1.8	
Inductance (line to line)	L	mH	16.1	
Pole pair pitch	2τ	mm	46	
Back emf constant(line to line)	K_v	$V_{rms}/(m/s)$	84.1	
Motor constant (25 $^{\circ}C$)	K_m	$N/A_{rms}/W$	104.2	
Thermal resistance	R_{th}	$^{\circ}C/W$	0.19	0.05
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	1.7	
Maximum electric power input	$P_{EL,MAX}$	W	-	41486
Maximum dissipated heat output	$Q_{P,H,MAX}$	W	-	1998
Max. DC bus voltage		V_{DC}	750	

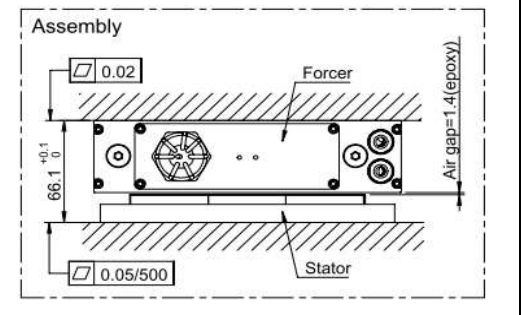
Mechanical specifications				
	Symbol	Unit	Free air convection	Water cooling
Mass of forcer	M_f	kg	29.8	
Unit mass of stator	M_s	kg	22.3	
Total installation height	H	mm	66.1	
Minimum flow rate		L/min	-	6.2
Temperature of cooling water		$^{\circ}C$	-	20
Pressure drop	ΔP	bar	-	1.8
Water temperature difference	$\Delta\theta_{P,H}$	K	-	4.6
Forcer precision cooler				
Maximum dissipated thermal output	$Q_{FC,Max}$	W	-	130
Pressure drop	ΔP_{FC}	bar	-	1.58
Stator precision cooler				
Maximum dissipated thermal output	$Q_{SC,Max}$	W	-	390
Pressure drop per meter of cooling pipe	ΔP_s	bar	-	0.16
Pressure drop per combi distributor	ΔP_{sd}	bar	-	0.85
Pressure drop per coupling point	ΔP_{sp}	bar	-	0.17



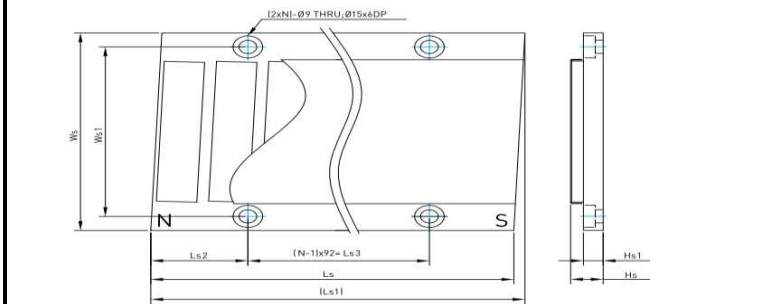
Forcer dimensions



Mounting tolerance



Stator dimensions



Wiring diagram

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

Type	Ls	Ls1	Ls2	Ls3	Hs	Hs1	Ws	Ws1	N
LMF4S1	184	189.03	48.9	92	18.5	12	180	161	2
LMF4S1E	184	189.03	48.9	92	18	11.8	180	161	2
LMF4S2	276	281.03	48.9	184	18.5	12	180	161	3
LMF4S2E	276	281.03	48.9	184	18	11.8	180	161	3
LMF4S3	460	465.03	48.9	368	18.5	12	180	161	5
LMF4S3E	460	465.03	48.9	368	18	11.8	180	161	5

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

Version: 1.00

Date: 2021/1/29