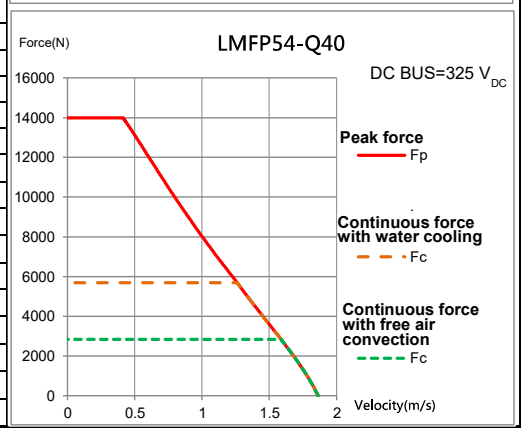
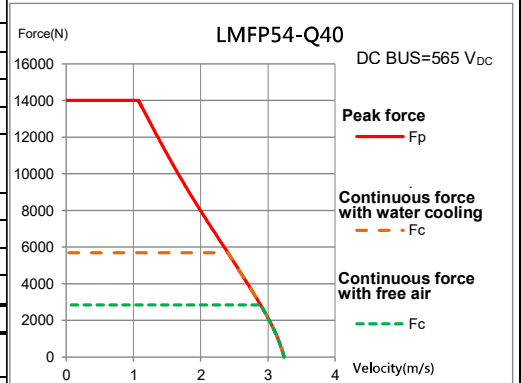
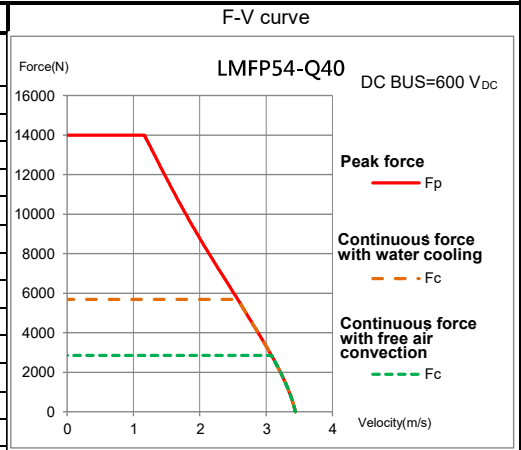


LMFP54-Q40

Linear Motor

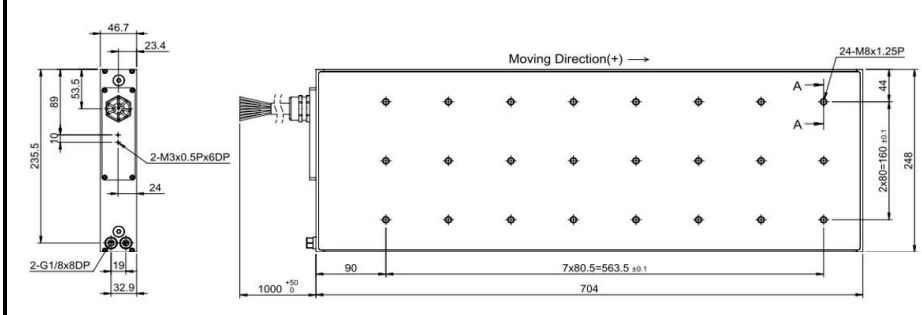
DB100209-V1.00

Electrical specifications				
	Symbol	Unit	Free air convection	Water cooling
Continuous force	$F_c$	N	2844	5688
Continuous current	$I_c$	$A_{rms}$	14.8	29.6
Stall force	$F_0$	N	-	3978
Stall current	$I_0$	$A_{rms}$	-	20.7
Peak force (1s)	$F_p$	N	14000	
Peak current (1s)	$I_p$	$A_{rms}$	92.7	
Force constant	$K_f$	$N/A_{rms}$	192.3	
Attraction force	$F_a$	N	24933	
Max. winding temperature	$T_{max}$	°C	120	
Electrical time constant	$K_e$	ms	12.6	
Resistance (line to line · 25°C)	$R_{25}$	$\Omega$	1.7	
Resistance (line to line · 120°C)	$R_{120}$	$\Omega$	2.3	
Inductance (line to line)	L	mH	21.5	
Pole pair pitch	$2\tau$	mm	46	
Back emf constant(line to line)	$K_v$	$V_{rms}/(m/s)$	111	
Motor constant (25°C)	$K_m$	$N/A_{rms}/W$	120.3	
Thermal resistance	$R_{th}$	°C/W	0.13	0.03
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	1.2	
Maximum electric power input	$P_{EL,MAX}$	W	-	46447
Maximum dissipated heat output	$Q_{P,H,MAX}$	W	-	3023
Max. DC bus voltage	$V_{DC}$		750	

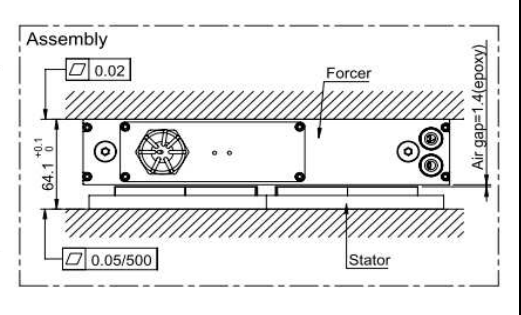


Mechanical specifications				
	Symbol	Unit	Free air convection	Water cooling
Mass of forcer	$M_f$	kg	42.3	
Unit mass of stator	$M_s$	kg	25	
Total installation height	H	mm	64.1	
Minimum flow rate		L/min	-	7.3
Temperature of cooling water		°C	-	20
Pressure drop	$\Delta P$	bar	-	2.3
Water temperature difference	$\Delta\theta_{P,H}$	K	-	5.9
<b>Forcer precision cooler</b>				
Maximum dissipated thermal output	$Q_{FC,Max}$	W	-	153
Pressure drop	$\Delta P_{FC}$	bar	-	6.9
<b>Stator precision cooler</b>				
Maximum dissipated thermal output	$Q_{SC,Max}$	W	-	459
Pressure drop per meter of cooling pipe	$\Delta P_s$	bar	-	0.07
Pressure drop per combi distributor	$\Delta P_{sd}$	bar	-	0.2
Pressure drop per coupling point	$\Delta P_{sp}$	bar	-	0.09

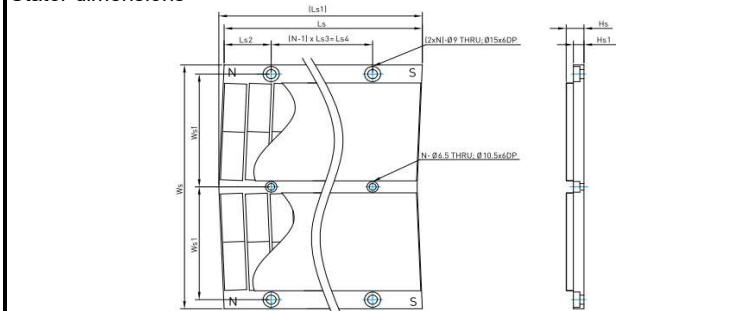
Forcer dimensions



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-

PTC SNM120  
Pt1000

Type	Ls	Ls1	Ls2	Ls3	Ls4	Hs	Hs1	Ws	Ws1	N
LMF5S1E	184	188.89	43.7	92	92	16	9.8	240	111	2
LMF5S2E	276	280.89	43.7	92	184	16	9.8	240	111	3
LMF5S3E	460	464.89	43.7	92	368	16	9.8	240	111	5

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

Version: 1.00

Date: 2021/1/29