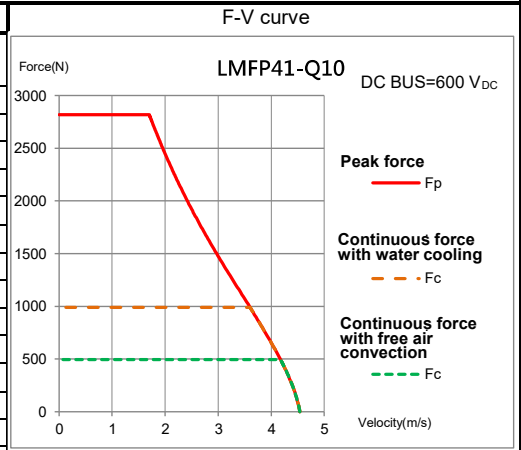


LMFP41-Q10

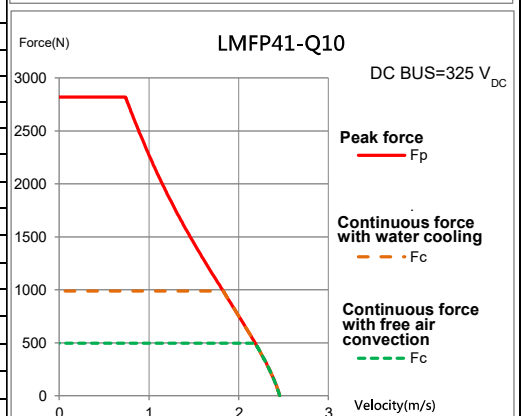
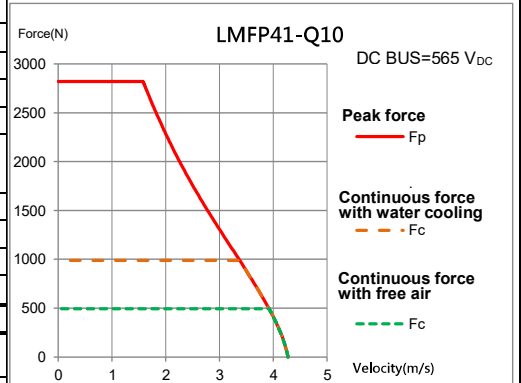
Linear Motor

DB100201-V1.00

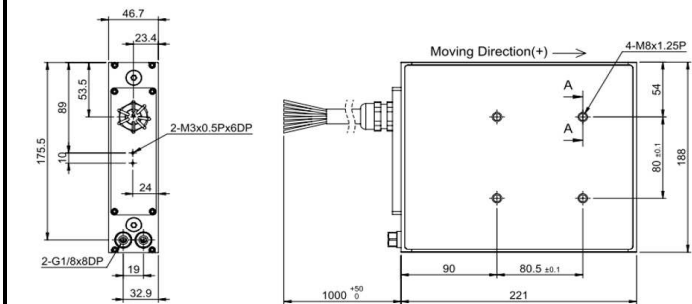
Electrical specifications				
	Symbol	Unit	Free air convection	Water cooling
Continuous force	$F_c$	N	495	990
Continuous current	$I_c$	$A_{rms}$	3.4	6.8
Stall force	$F_0$	N	-	699
Stall current	$I_0$	$A_{rms}$	-	4.8
Peak force (1s)	$F_p$	N	2820	
Peak current (1s)	$I_p$	$A_{rms}$	22.7	
Force constant	$K_f$	$N/A_{rms}$	145.7	
Attraction force	$F_a$	N	4682	
Max. winding temperature	$T_{max}$	°C	120	
Electrical time constant	$K_e$	ms	12.6	
Resistance (line to line · 25°C)	$R_{25}$	$\Omega$	5.1	
Resistance (line to line · 120°C)	$R_{120}$	$\Omega$	7	
Inductance (line to line)	$L$	mH	64.5	
Pole pair pitch	$2\tau$	mm	46	
Back emf constant(line to line)	$K_v$	$V_{rms}/(m/s)$	84.1	
Motor constant (25°C)	$K_m$	$N/A_{rms}/W$	52.6	
Thermal resistance	$R_{th}$	°C/W	0.78	0.2
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	-	10205
Maximum dissipated heat output	$Q_{P,H,MAX}$	W	-	486
Max. DC bus voltage		$V_{DC}$	750	



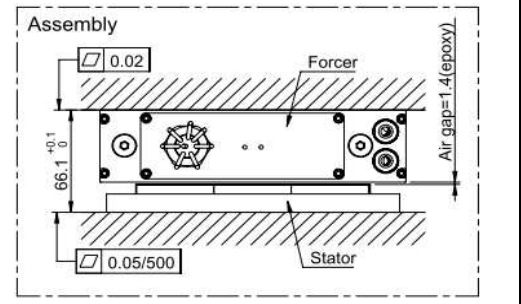
Mechanical specifications				
	Symbol	Unit	Free air convection	Water cooling
Mass of forcer	$M_f$	kg	9.9	
Unit mass of stator	$M_s$	kg	22.3	
Total installation height	$H$	mm	66.1	
Minimum flow rate		L/min	-	5.2
Temperature of cooling water		°C	-	20
Pressure drop	$\Delta P$	bar	-	0.89
Water temperature difference	$\Delta\theta_{P,H}$	K	-	1.3
<b>Forcer precision cooler</b>				
Maximum dissipated thermal output	$Q_{FC,Max}$	W	-	109
Pressure drop	$\Delta P_{FC}$	bar	-	0.82
<b>Stator precision cooler</b>				
Maximum dissipated thermal output	$Q_{SC,Max}$	W	-	327
Pressure drop per meter of cooling pipe	$\Delta P_s$	bar	-	0.16
Pressure drop per combi distributor	$\Delta P_{sd}$	bar	-	0.85
Pressure drop per coupling point	$\Delta P_{sp}$	bar	-	0.17



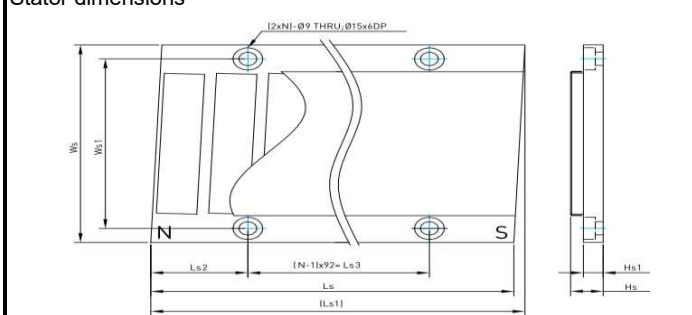
Forcer dimensions



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