

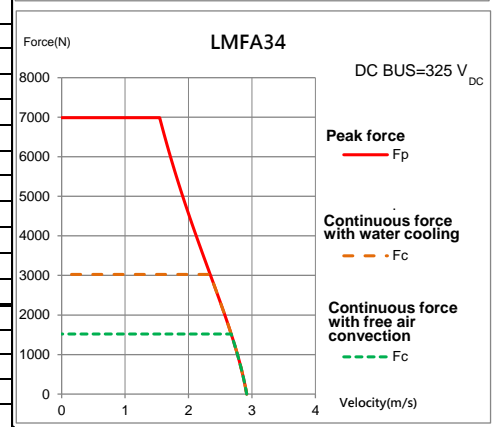
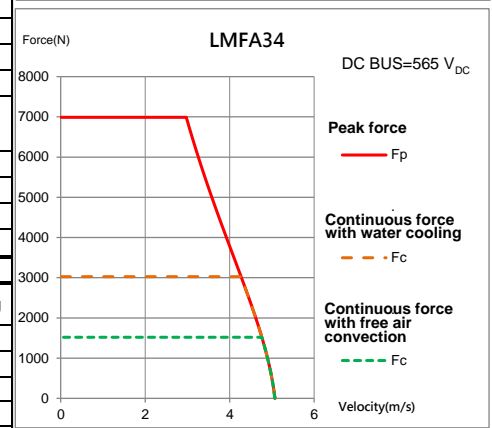
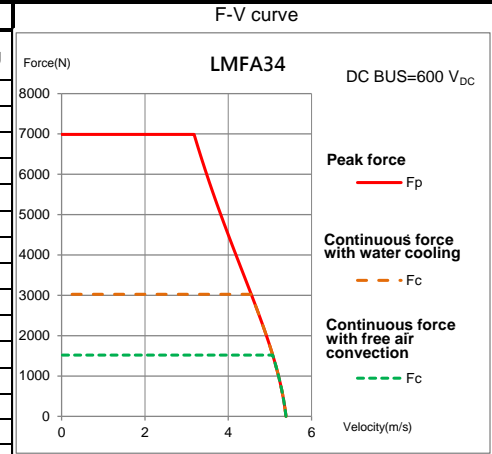
LMFA34

Linear Motor

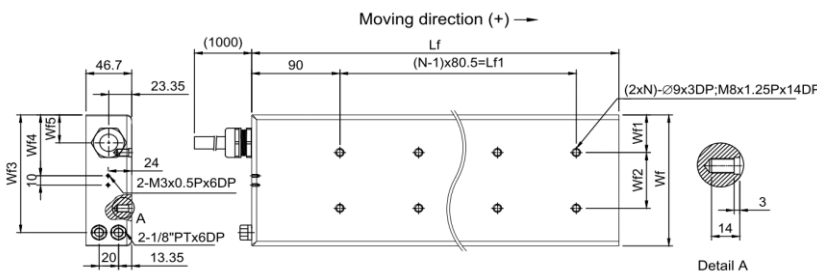
Electrical specifications				
	Symbol	Unit	Free air convection	Water cooling
Continuous force	F_c	N	1519	3037
Continuous current	I_c	A_{rms}	12.4	24.7
Stall force	F_0	N	-	2126
Stall current	I_0	A_{rms}	-	17.3
Peak force (1s)	F_p	N	-	7000
Peak current (1s)	I_p	A_{rms}	-	76.7
Force constant	K_f	N/A_{rms}	-	122.7
Attraction force	F_a	N	-	13720
Max. winding temperature	T_{max}	$^{\circ}C$	-	120
Electrical time constant	K_e	ms	-	11.3
Resistance (line to line · 25 $^{\circ}C$)	R_{25}	Ω	-	1.1
Resistance (line to line · 120 $^{\circ}C$)	R_{120}	Ω	-	1.4
Inductance (line to line)	L	mH	-	12.1
Pole pair pitch	2τ	mm	-	46
Back emf constant(line to line)	K_v	$V_{rms}/(m/s)$	-	70.9
Motor constant (25 $^{\circ}C$)	K_m	N/\sqrt{W}	-	96.9
Thermal resistance	R_{th}	$^{\circ}C/W$	0.29	0.07
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	-	4.08
Maximum electric power input	$P_{EL,MAX}$	W	-	41019
Maximum dissipated heat output	$Q_{P,H,MAX}$	W	-	1296
Max. DC bus voltage	V_{DC}	V	-	750

Mechanical specifications				
	Symbol	Unit	Free air convection	Water cooling
Mass of forcer	M_f	kg	-	22.5
Unit mass of stator	M_s	kg	-	16.2
Total installation height	H	mm	-	64.1
Minimum flow rate		L/min	-	6.2
Temperature of cooling water		$^{\circ}C$	-	20
Pressure drop	ΔP	bar	-	1.28
Water temperature difference	$\Delta\theta_{P,H}$	K	-	3
Forcer precision cooler				
Maximum dissipated thermal output	$Q_{FC,Max}$	W	-	130
Pressure drop	ΔP_{FC}	bar	-	2.16
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	-	0.35
Pressure drop per coupling point	ΔP_{sp}	bar	-	0.17

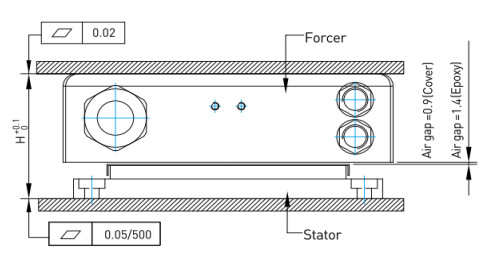
Lf	mm	697	Wf3	mm	126.5
Lf1	mm	563.5	Wf4	mm	65.5
Wf	mm	141	Wf5	mm	30
Wf1	mm	40.5	N	mm	8
Wf2	mm	60	n	mm	-



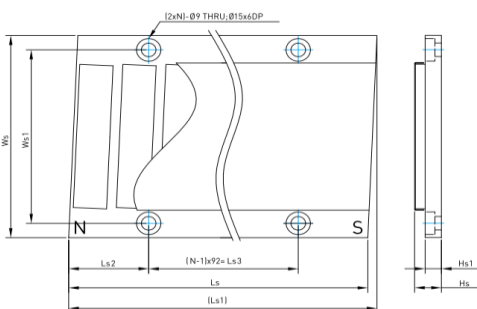
Forcer dimensions



Mounting tolerance



Stator dimensions



Type	Ls	Ls1	Ls2	Ls3	Hs	Hs1	Ws	Ws1	N
LMF3S1	184	189.62	49.2	92	16.5	10	134	115	2
LMF3S1E	184	189.62	49.2	92	16	9.8	134	115	2
LMF3S2	276	281.62	49.2	184	16.5	10	134	115	3
LMF3S2E	276	281.62	49.2	184	16	9.8	134	115	3
LMF3S3	460	465.62	49.2	368	16.5	10	134	115	5
LMF3S3E	460	465.62	49.2	368	16	9.8	134	115	5

Except dimensions, all the specifications in the table are in $\pm 10\%$ of tolerance

Version: 2.00

Date: 2020/5/8