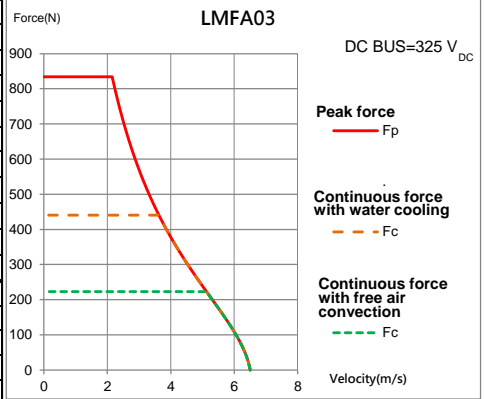
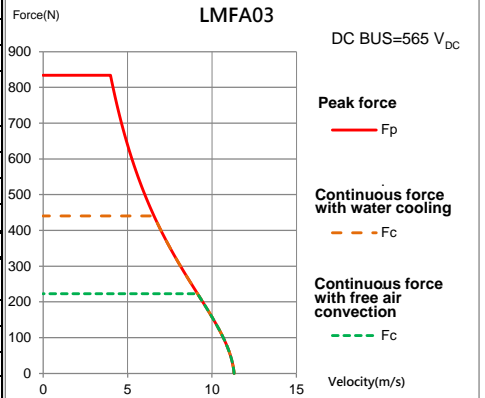
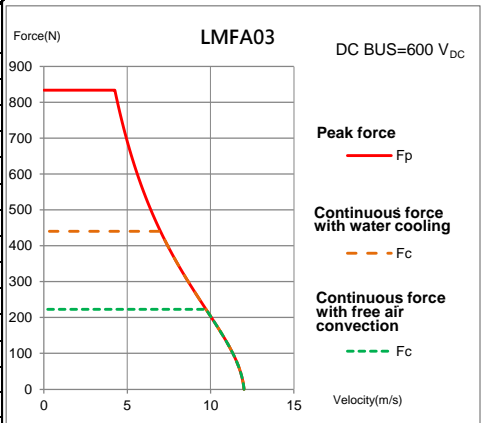


LMFA03 Linear Motor

Electrical specifications

	Symbol	Unit	Free air convection	Water cooling
Continuous force	$F_c$	N	223	446
Continuous current	$I_c$	$A_{rms}$	4.1	8.1
Stall force	$F_0$	N	-	312
Stall current	$I_0$	$A_{rms}$	-	5.7
Peak force (1s)	$F_p$	N	-	845
Peak current (1s)	$I_p$	$A_{rms}$	-	25.1
Force constant	$K_f$	$N/A_{rms}$	-	55.1
Attraction force	$F_a$	N	-	1372
Max. winding temperature	$T_{max}$	$^{\circ}C$	-	120
Electrical time constant	$K_e$	ms	-	7.2
Resistance (line to line · 25 $^{\circ}C$ )	$R_{25}$	$\Omega$	-	3.9
Resistance (line to line · 120 $^{\circ}C$ )	$R_{120}$	$\Omega$	-	5.1
Inductance (line to line)	L	mH	-	28.1
Pole pair pitch	$2\tau$	mm	-	30
Back emf constant(line to line)	$K_v$	$V_{rms}/(m/s)$	-	31.8
Motor constant (25 $^{\circ}C$ )	$K_m$	$N/\sqrt{W}$	-	22.8
Thermal resistance	$R_{th}$	$^{\circ}C/W$	0.75	0.19
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	-	5.39
Maximum electric power input	$P_{EL,MAX}$	W	-	9421
Maximum dissipated heat output	$Q_{P,H,MAX}$	W	-	506
Max. DC bus voltage	$V_{DC}$	V	-	750

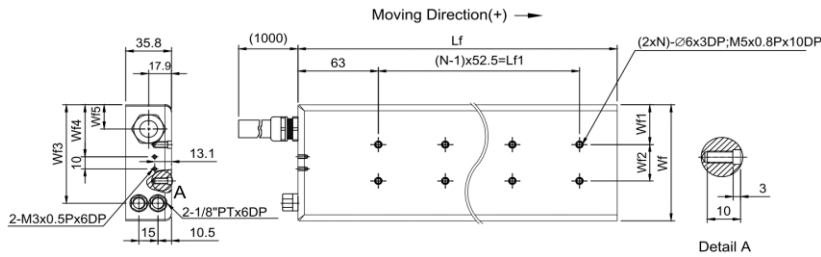
F-V curve



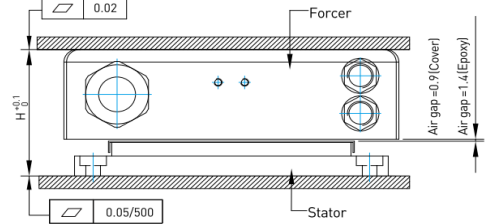
Mechanical specifications

	Symbol	Unit	Free air convection	Water cooling	
Mass of forcer	$M_f$	kg	-	3.1	
Unit mass of stator	$M_s$	kg	-	3.7	
Total installation height	H	mm	-	48.5	
Minimum flow rate		L/min	-	3.3	
Temperature of cooling water		$^{\circ}C$	-	20	
Pressure drop	$\Delta P$	bar	-	1.1	
Water temperture difference	$\Delta\theta_{P,H}$	K	-	2.2	
$L_f$	mm	355	$Wf3$	mm	55
$L_{f1}$	mm	262.5	$Wf4$	mm	33.75
$W_f$	mm	67	$Wf5$	mm	14.4
$W_{f1}$	mm	18.5	N	mm	6
$W_{f2}$	mm	30	n	mm	-

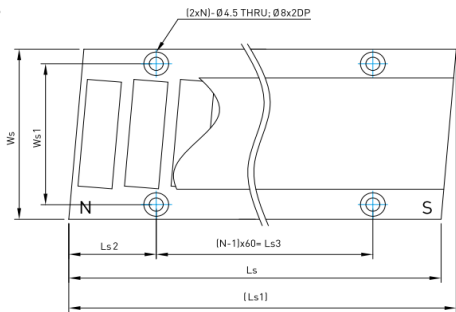
Forcer dimensions



Mounting tolerance



Stator dimensions



Type	Ls	Ls1	Ls2	Ls3	Hs	Hs1	Ws	Ws1	N
LMF0S1	120	124.87	31.25	60	11.8	5.9	58	48	2
LMF0S1E	120	124.87	31.25	60	11.3	5.7	58	48	2
LMF0S2	180	184.87	31.25	120	11.8	5.9	58	48	3
LMF0S2E	180	184.87	31.25	120	11.3	5.7	58	48	3
LMF0S3	300	304.87	31.25	240	11.8	5.9	58	48	5
LMF0S3E	300	304.87	31.25	240	11.3	5.7	58	48	5

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

Version: 2.00

Date: 2020/5/8