

Synchronous linear motors of series LNS

Ironless linear motors for dynamic drives

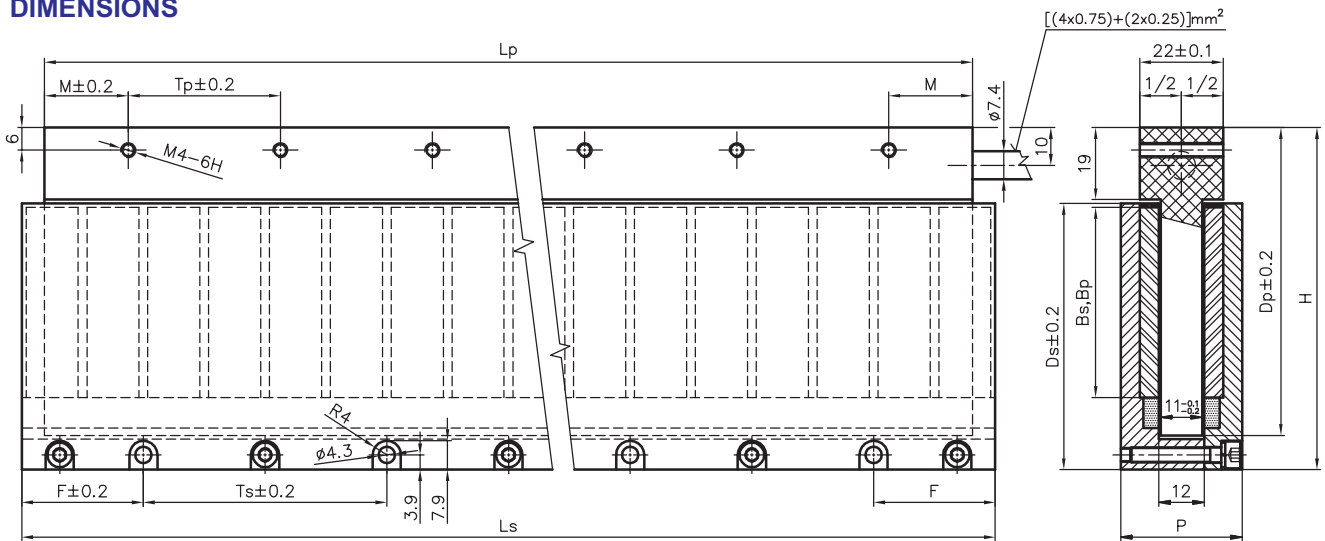
Thrust forces 80 - 1280 N
 Thrust speed up to 42 m.s⁻¹
 Air cooling IC 40
 Temperature class F
 Enclosure (electrical) IP 55



Technical data
 UDC = 330 V

Type	F _{peak} [N]	I _{peak} [A]	F ₁ [N]	I ₁ [A]	v ₁ [ms ⁻¹]	f ₁ [Hz]	ΔP ₁ [W]	F _{nc} [N]	I _{nc} [A]	v _{nc} [ms ⁻¹]	ΔP _{nc} [W]	I _{ULT} [A]	k _F [NA ⁻¹]	k _E [Vsm ⁻¹]	R _{U-V} [W]	L _{U-V} [mH]	t _{el} [ms]	k _M [NW ^{0.5}]	R _{th} [KW ⁻¹]
LNS025P-0314-BL	80	6,8	20	1,7	25	780	38	16	1,4	25	26	12	11,7	6,8	6,623	3,5	1	3	4,04
LNS025P-0614-BL	160	13,7	40	3,4	25	780	77	31	2,6	25	46	24	11,7	6,8	3,312	1,8	1	5	2,28
LNS025P-0914-BL	240	20,5	60	5,1	25	780	115	45	3,9	25	65	35	11,7	6,8	2,208	1,2	1	6	1,62
LNS025P-1214-BL	320	27,4	80	6,8	25	780	153	57	4,8	25	77	47	11,7	6,8	1,656	1,0	1	6	1,36
LNS050P-0314-DL	160	6,8	40	1,7	13	406	59	33	1,4	13	39	12	23,4	13,5	10,15	5,9	1,1	5	2,69
LNS050P-0614-DL	320	13,7	80	3,4	13	406	117	62	2,6	13	70	24	23,4	13,5	5,073	3,0	1,1	7	1,50
LNS050P-0914-DL	480	20,5	120	5,1	13	406	176	90	3,9	13	100	35	23,4	13,5	3,382	2,0	1,1	9	1,05
LNS050P-1214-DL	640	27,4	160	6,8	13	406	235	113	4,8	13	117	47	23,4	13,5	2,537	1,5	1,1	10	0,90
LNS075P-0314-EL	240	6,8	60	1,7	8,5	266	79	49	1,4	8,5	53	12	35,1	20,3	13,67	8,3	1,2	7	1,98
LNS075P-0614-EL	480	13,7	120	3,4	8,5	266	158	93	2,6	8,5	95	24	35,1	20,3	6,835	4,2	1,2	10	1,11
LNS075P-0914-EL	720	20,5	180	5,1	8,5	266	237	135	3,9	8,5	134	35	35,1	20,3	4,557	2,8	1,2	12	0,78
LNS075P-1214-EL	960	27,4	240	6,8	8,5	266	316	170	4,8	8,5	158	47	35,1	20,3	3,418	2,1	1,2	13	0,66
LNS100P-0314-FL	320	6,8	80	1,7	6,5	203	99	65	1,4	6,5	66	12	46,8	27,0	17,19	10,8	1,3	8	1,59
LNS100P-0614-FL	640	13,7	160	3,4	6,5	203	199	124	2,6	6,5	120	24	46,8	27,0	8,596	5,4	1,3	11	0,88
LNS100P-0914-FL	960	20,5	240	5,1	6,5	203	298	181	3,9	6,5	169	35	46,8	27,0	5,731	3,6	1,3	14	0,62
LNS100P-1214-FL	1280	27,4	320	6,8	6,5	203	398	225	4,8	6,5	196	47	46,8	27,0	4,298	2,7	1,3	16	0,54

DIMENSIONS



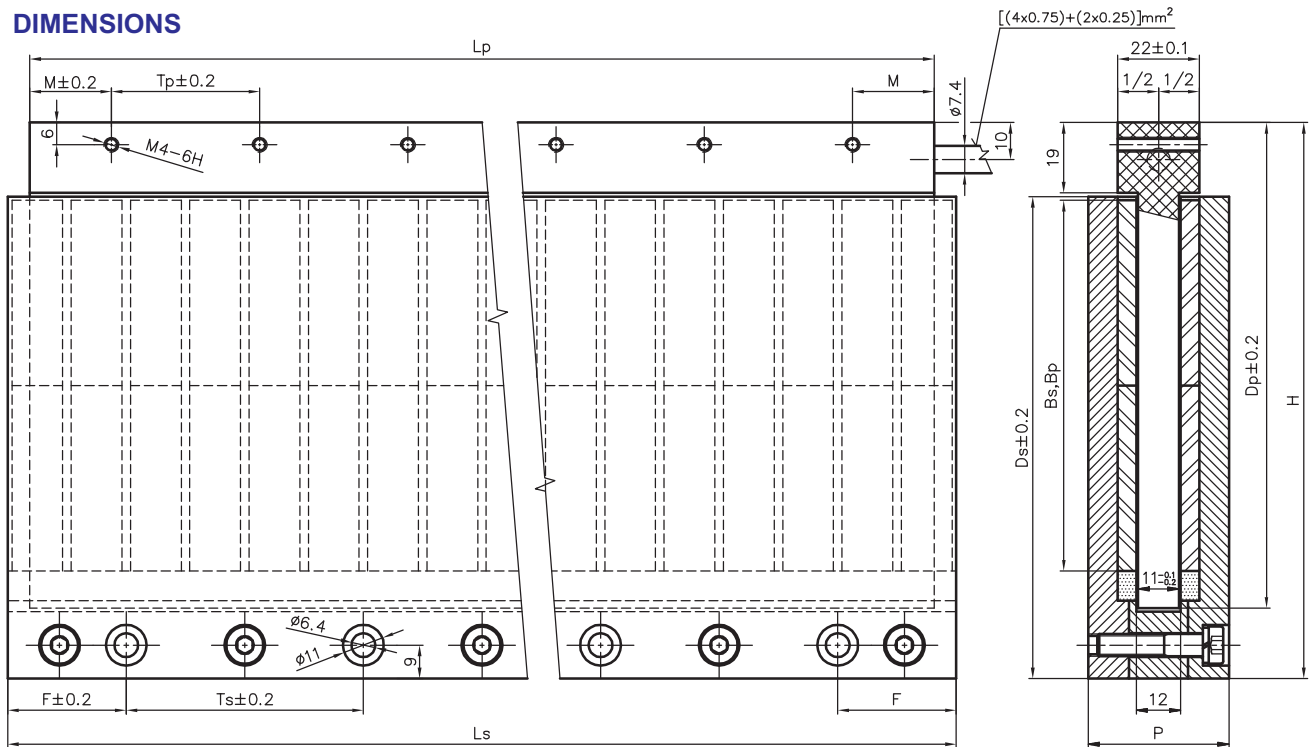
Primary parts

Type	B _p mm	D _p mm	H mm	L _p mm	T _p mm	M mm	m _p *) kg
LNS025P-0314	25	56	65	84	1 x 40	22	0,19
LNS025P-0614				164	3 x 40		0,36
LNS025P-0914				244	5 x 40		0,55
LNS025P-1214				324	7 x 40		0,73
LNS050P-0314	50	81	90	84	1 x 40	22	0,27
LNS050P-0614				164	3 x 40		0,52
LNS050P-0914				244	5 x 40		0,78
LNS050P-1214				324	7 x 40		1,03

Secondary parts

Type	B _s mm	D _s mm	P mm	H mm	L _s mm	T _s mm	F mm	m _s kg
LNS025S-0416	25	45	32	65	64	32	16	0,38
LNS025S-0616					96	64	16	0,58
LNS025S-1016					160	2x64	16	0,96
LNS025S-2016					320	4x64	32	1,92
LNS025S-3016					480	6x64	48	2,88
LNS050S-0416	50	70	32	90	64	32	16	0,64
LNS050S-0616					96	64	16	0,96
LNS050S-1016					160	2x64	16	1,60
LNS050S-2016					320	4x64	32	3,20
LNS050S-3016					480	6x64	48	4,80

DIMENSIONS



Primary parts

Type	B _p mm	D _p mm	H mm	L _p mm	T _p mm	M mm	m _p *) kg
LNS075P-0314	75	106	125	84	1 x 40	22	0,34
LNS075P-0614				164	3 x 40		0,67
LNS075P-0914				244	5 x 40		1,03
LNS075P-1214				324	7 x 40		1,33
LNS100P-0314	100	131	150	84	1 x 40	22	0,42
LNS100P-0614				164	3 x 40		0,82
LNS100P-0914				244	5 x 40		1,23
LNS100P-1214				324	7 x 40		1,63

Secondary parts

Typ / Type / Typ	B _s mm	D _s mm	P mm	H mm	L _s mm	T _s mm	F mm	m _s kg
LNS075S-0416	75	105	36	125	64	32	16	1,32
LNS075S-0616					96	64	16	1,98
LNS075S-1016					160	2x64	16	3,30
LNS075S-2016					320	4x64	32	6,60
LNS075S-3016					480	6x64	48	9,90
LNS100S-0416	100	130	38	150	64	32	16	1,75
LNS100S-0616					96	64	16	2,63
LNS100S-1016					160	2x64	16	4,38
LNS100S-2016					320	4x64	32	8,76
LNS100S-3016					480	6x64	48	13,13

Standard force constant

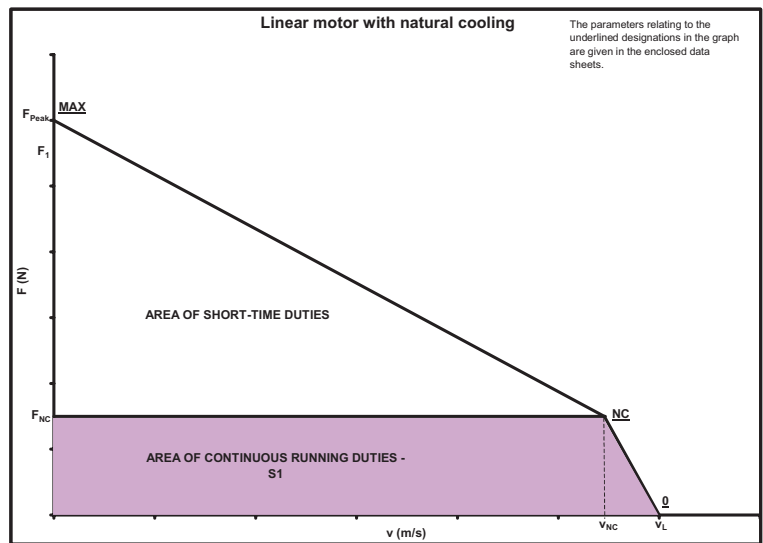
Description of force constants according to type key

- A - 5 I - 90
- B - 9 J - 100
- C - 15 L - 120
- D - 25 N - 150
- E - 30 P - 200
- M - 35 R - 250
- F - 45 S - 300
- G - 50 U - 350
- H - 60 T - 500
- K - 70

Other winding type on request

	kF (N/A)				
LNS025P-0314	A	B	C	M	
LNS025P-0614	B	D	E	K	
LNS025P-0914	B	C	M	F	L
LNS025P-1214	C	D	G	H	N
LNS050P-0314	B	D	E	K	
LNS050P-0614	C	D	G	H	N
LNS050P-0914	D	M	K	I	R
LNS050P-1214	M	G	J	L	U
LNS075P-0314	B	C	M	F	L
LNS075P-0614	D	M	K	I	R
LNS075P-0914	M	G	L	S	
LNS075P-1214	G	K	N	T	
LNS100P-0314	C	D	G	H	N
LNS100P-0614	M	G	J	L	S
LNS100P-0914	G	K	N	T	
LNS100P-1214	K	J	P	T	

Power characteristic for the type LNS



Used symbols

- | | | | |
|-----------------------------|--|-----------------------|---|
| F_{peak} [N] | - highest force developed by the motor (it is used as starting force) | L_{u-v} [mH] | - inductance of the winding |
| F_1 [N] | - max. force by current I_1 and speed v_1 | t_{el} [ms] | - electromagnetic time constant of the motor |
| v_1 [m/s] | - speed of the motor by current I_1 and force F_1 | U_{BUS} [V] | - DC voltage of intermediate circuit of the frequency converter for which the motor is produced |
| F_1, I_1 and v_1 values | determine the transition point of the motor. | k_F [N/A] | - force constant of the motor |
| F_{NC} [N] | - force being developed by the motor continuously at the air cooling by the motor surface | k_E [Vs/m] | - voltage constant of the motor |
| F_A [N] | - attractive force between the primary and secondary parts of the motor | k_M [N/ W] | - constant of the motor |
| I_{peak} [A] | - current corresponding to the force F_{peak} | v_L [m/s] | - theoretic no-load velocity |
| I_1 [A] | - maximum short-time permissible current (r.m.s. value) which is given by the intersection of current limitation of the servomotor and of limitation by the rated voltage of the converter | ΩP_1 [W] | - motor losses corresponding to the force F_1 at the winding temperature of 130°C |
| I_{NC} [A] | - current corresponding to the force F_{NC} | ΩP_{NC} [W] | - motor losses corresponding to the force F_{NC} at the winding temperature of 130°C |
| R_{u-v} [Ω] | - resistance of the motor winding at 20°C | m_p [kg] | - mass of the primary part of the motor |
| | | m_s [kg] | - mass of the secondary part of the motor |
| | | f_1 [Hz] | - supply current frequency corresponding to the velocity v_1 |
| | | I_{ult} [A] | - supply current the exceeding of which brings about demagnetization of magnets |