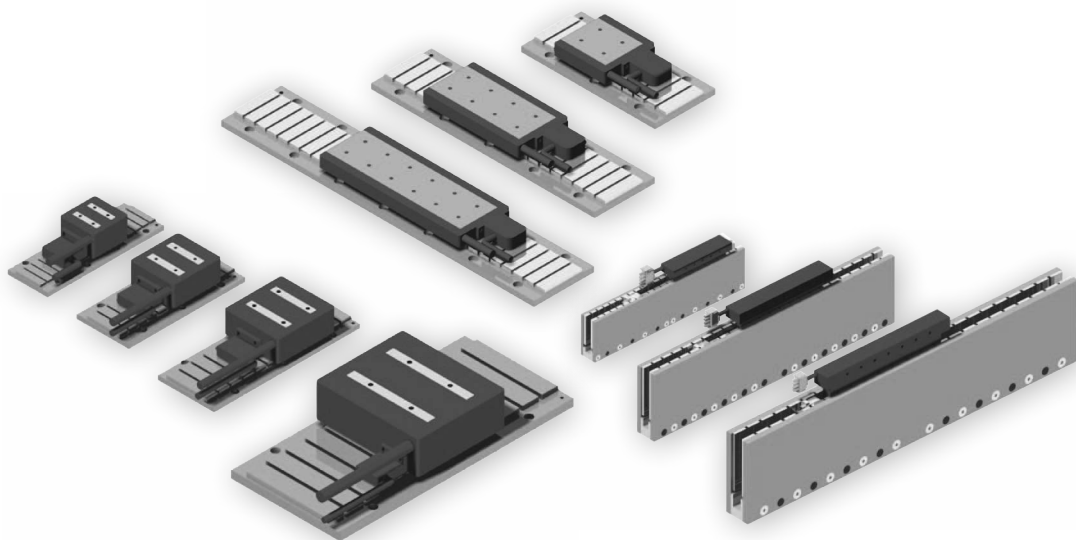


Linear Servo Motor

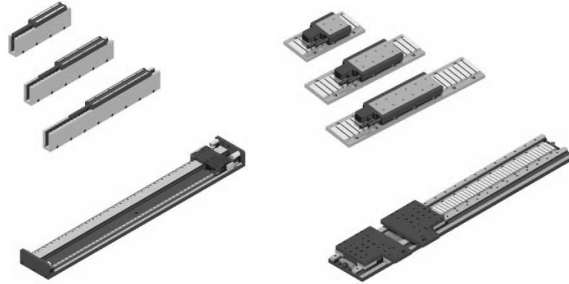
Linear Motor Iron Core Type F Series

Linear Motor Coreless Type G Series

Linear Motor Slotless Type S Series

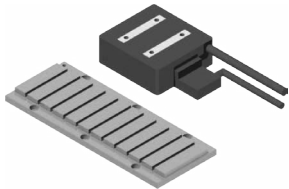


Features

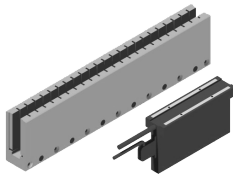


▣ Models

Iron core Type



Coreless Type



Slotless Type



❖ High speed/ high acceleration

Direct drive movement with high speed and high acceleration

❖ High efficiency

Less energy loss with no contact movement

❖ High precision

No backlash and little lost motion

❖ Fast response time

Fast response time and dynamic motion

❖ High degree of freedom

Smooth and precise movement

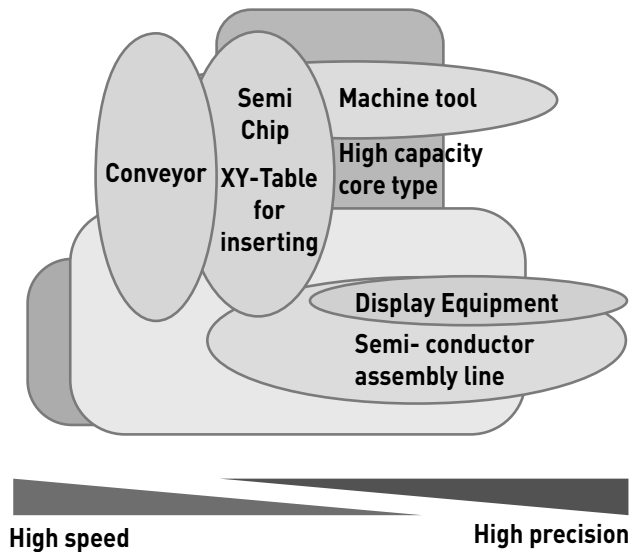
❖ Stable movement

High durability with movement by electromagnetic force

❖ Easy maintenance

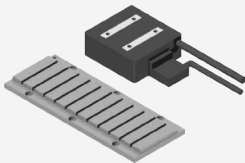
Easy maintenance with simple structure

Applications



Models

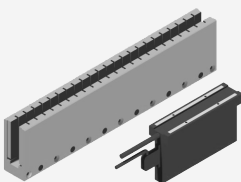
Core type



❖ Coil inserted type in core slot

- Strong molding structure
- Space saving
- High stiffness
- Simple motion

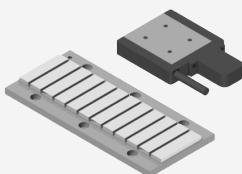
Coreless type



❖ Coil molding type without core

- Smooth movement with non-cogging
- Less thrust ripple, noise and vibration
- Less inertia moment
- Fast response time
- Less armature inductance
- High output

Slotless type

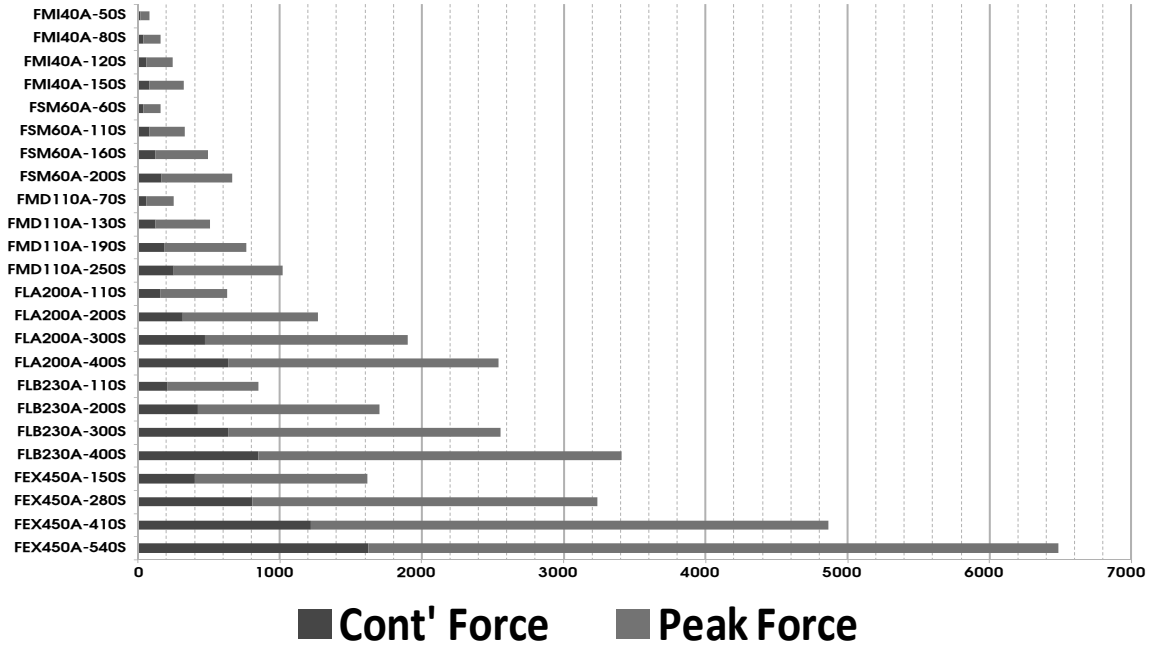


❖ No slot type

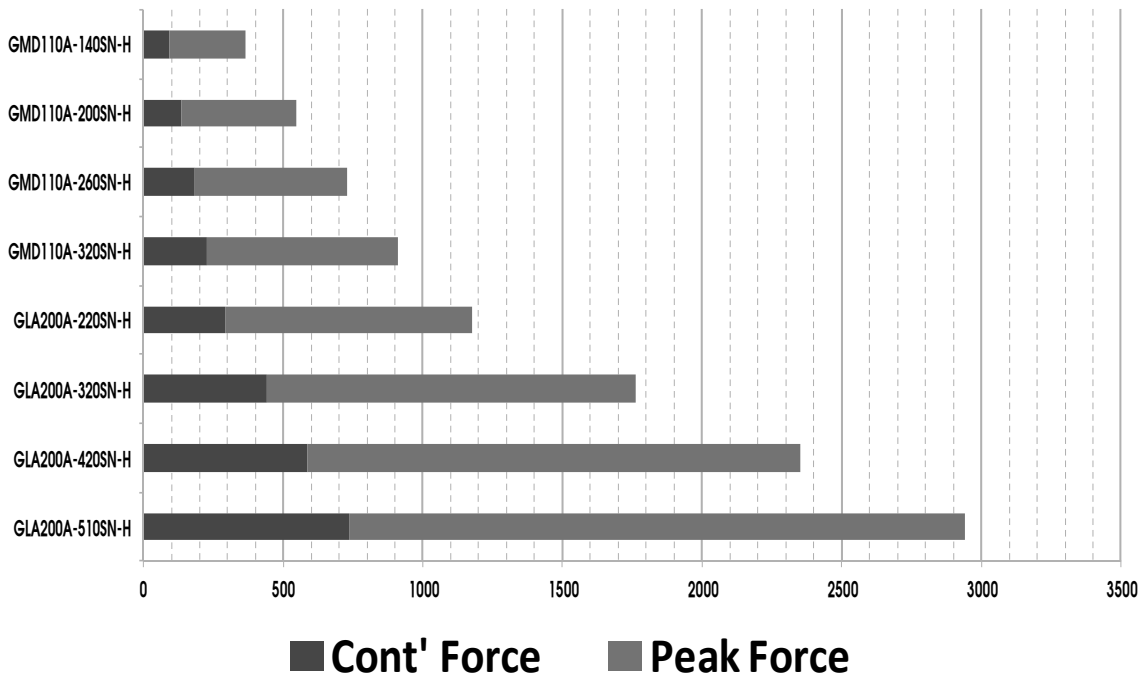
- Less thrust force ripple
- Smooth movement with non-cogging
- Stable constant thrust force
- Stable high thrust force
- Compact size
- Various customized options
- Long stroke and multi-slide available

Performance

IRON CORE LINEAR MOTOR FORCE

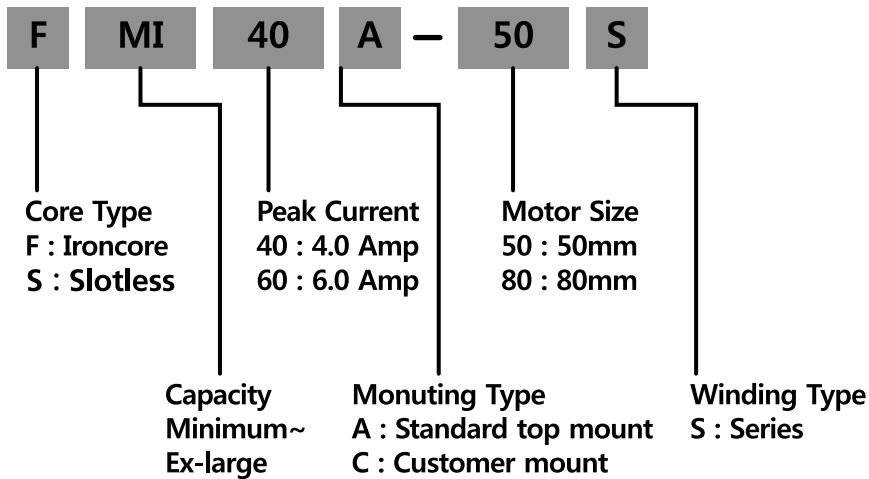


CORELESS LINEAR MOTOR FORCE

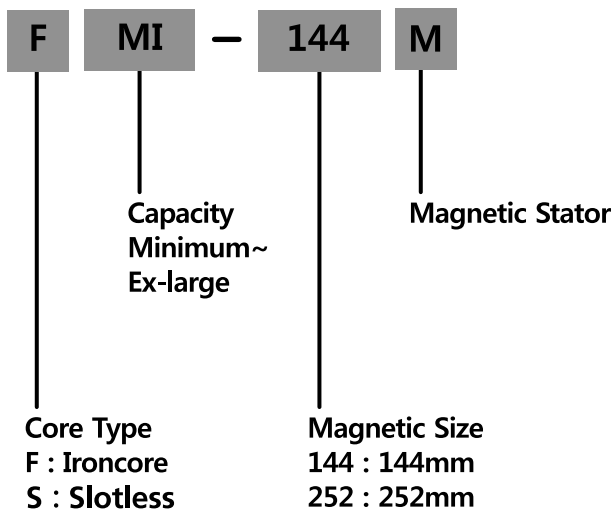


How to order

LINEAR MOTOR Model Selection

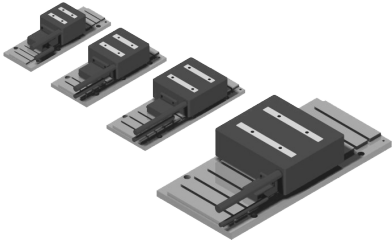


LINEAR STATOR Model Selection



Specifications

IRON CORE TYPE - FMI40A Series



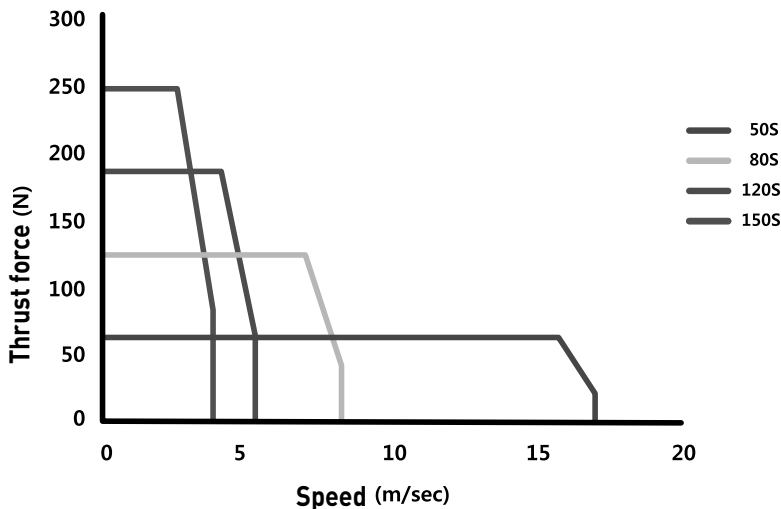
Basic specifications

- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155℃
- Protection : natural cooling
- Environment : 0-40℃
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FMI	Unit	40A			
		50S	80S	120S	150S
Continuous Force	N	20.37	40.75	61.12	81.49
Continuous Current	Arms	1.30	1.30	1.30	1.30
Peak Force	N	61.12	122.24	183.36	244.48
Peak Current	Arms	3.90	3.90	3.90	3.90
Resistance	$\Omega(p-p)$	2.71	5.42	8.13	10.84
Inductance	mH(P-P)	5.34	10.69	16.03	21.38
Force Constant	N/Arms	15.67	31.34	47.02	62.69
B-EMP Constant	Vrms/(m/s)	7.94	15.88	23.82	31.76
Motor Constant	N/W	7.77	10.99	13.46	15.55
Electrical Time Constant	ms	1.97	1.97	1.97	1.97
Normal Force	N	101.87	203.73	305.60	407.47
Power Loss	W	6.87	13.74	20.61	27.48
Mover Weight	kg	0.23	0.45	0.67	0.89

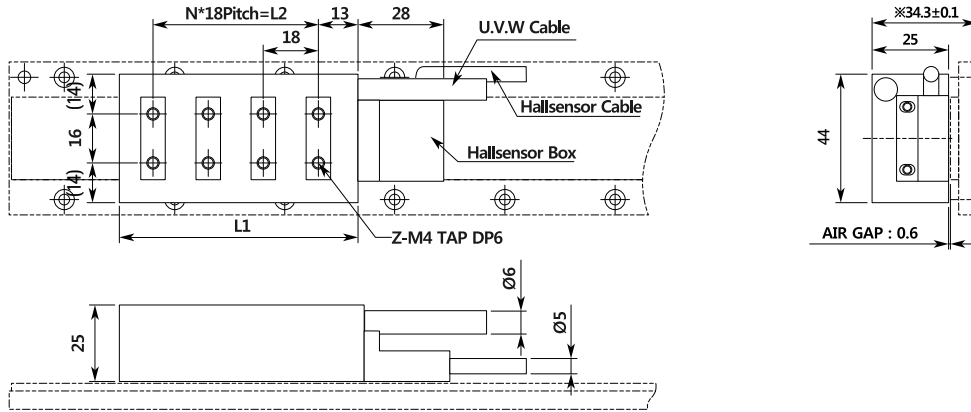
Thrust force VS Speed FMI40A-□□□S



MECHANICAL DIMENSIONS

(UNIT : mm)

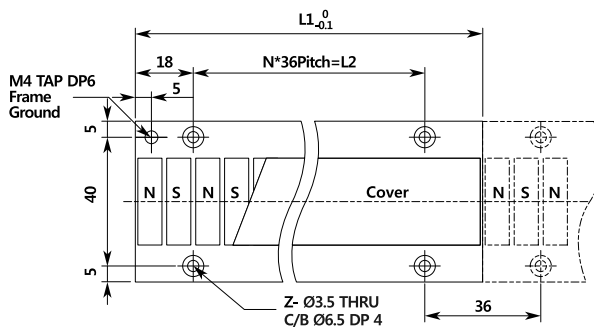
■ **Motor (FMI40A-□□□S)**



Linear Motor FMI40A	L1	L2	N	Z	Weight (kg)
50S	44	18	1	4	0.23
80S	80	54	3	8	0.45
120S	116	90	5	12	0.67
150S	152	126	7	16	0.89

●Motor Cable		●Hallsensor Cable	
Title	Color	Title	Color
U	Orange	5V	Red
V	Yellow	0V	Black
W	Black	HA	Yellow
G	Green	HB	White
		HC	Blue
		Shield	

■ **Stator (FMI-□□□M)**

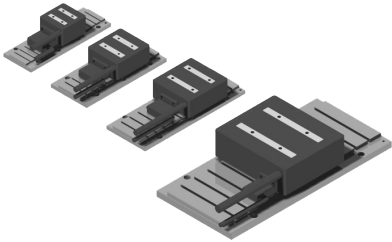


Linear Stator FMI	L1	L2	N	Z	Weight (kg)
144M	144	108	3	8	0.41
252M	252	216	6	14	0.71
324M	324	288	8	18	0.92

◎ M4 TAP is starting position of stator

Specifications

IRON CORE TYPE - FSM60A Series



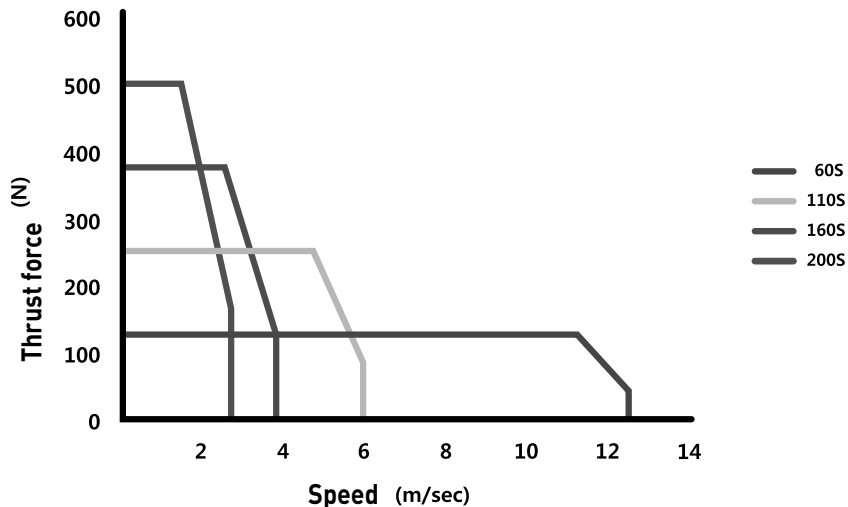
Basic specifications

- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155℃
- Protection : natural cooling
- Environment : 0-40℃
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FSM	Unit	60A			
		60S	110S	160S	200S
Continuous Force	N	41.52	83.05	124.57	166.09
Continuous Current	Arms	2.00	2.00	2.00	2.00
Peak Force	N	124.57	249.14	373.71	498.28
Peak Current	Arms	6.00	6.00	6.00	6.00
Resistance	Ω (p-p)	2.24	4.48	6.72	8.96
Inductance	mH(P-P)	6.30	12.61	18.91	25.22
Force Constant	N/Arms	20.76	41.52	62.29	83.05
B-EMP Constant	Vrms/(m/s)	10.75	21.50	32.25	43.00
Motor Constant	N/ \sqrt{W}	11.33	16.02	19.62	22.65
Electrical Time Constant	ms	2.81	2.81	2.81	2.81
Normal Force	N	207.62	415.23	622.85	830.47
Power Loss	W	13.44	26.88	40.32	53.76
Mover Weight	kg	0.44	0.84	1.06	1.42

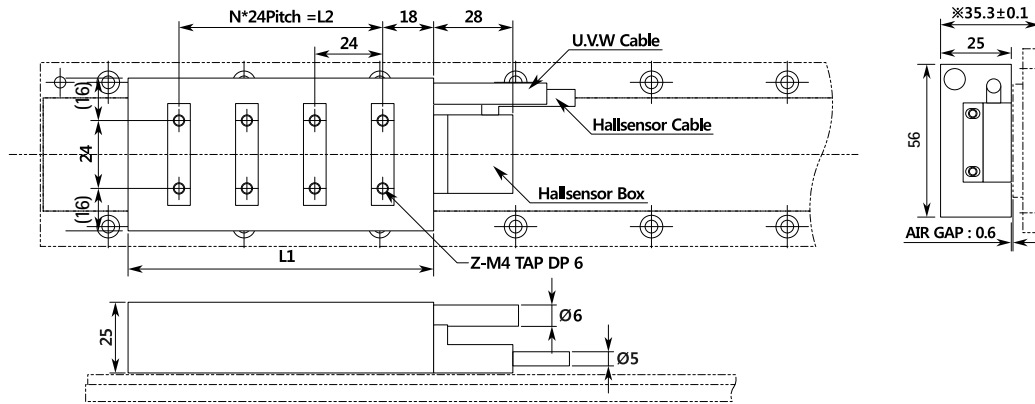
Thrust force VS Speed FSM60A-□□□S



MECHANICAL DIMENSIONS

(UNIT : mm)

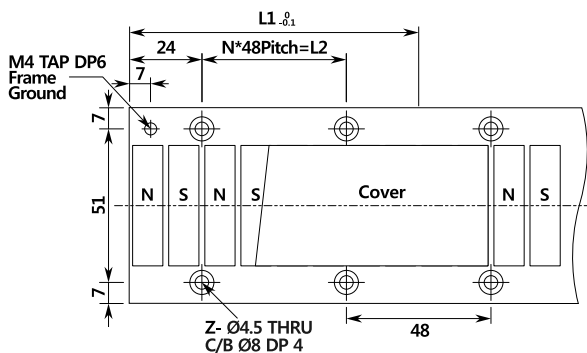
Motor (FSM60A-□□□S)



Linear Motor FSM60A	L1	L2	N	Z	Weight (kg)
60S	60	24	1	4	0.44
110S	108	72	3	8	0.84
160S	156	120	5	12	1.06
200S	204	168	7	16	1.42

•Motor Cable		•Hallsensor Cable	
Title	Color	Title	Color
U	Orange	5V	Red
V	Yellow	0V	Black
W	Black	HA	Yellow
G	Green	HB	White
		HC	Blue
		Shield	

Stator (FSM-□□□M)

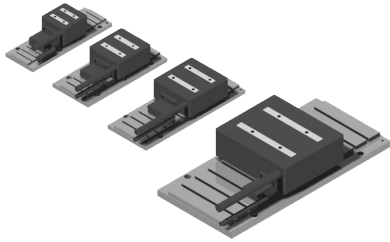


Linear Stator NMTL-FSM	L1	L2	N	Z	Weight (kg)
144M	144	96	2	6	0.57
240M	240	192	4	10	0.95
336M	336	288	6	14	1.33

◎ M4 TAP is starting position of stator

Specifications

IRON CORE TYPE FMD110A Series



Basic specifications

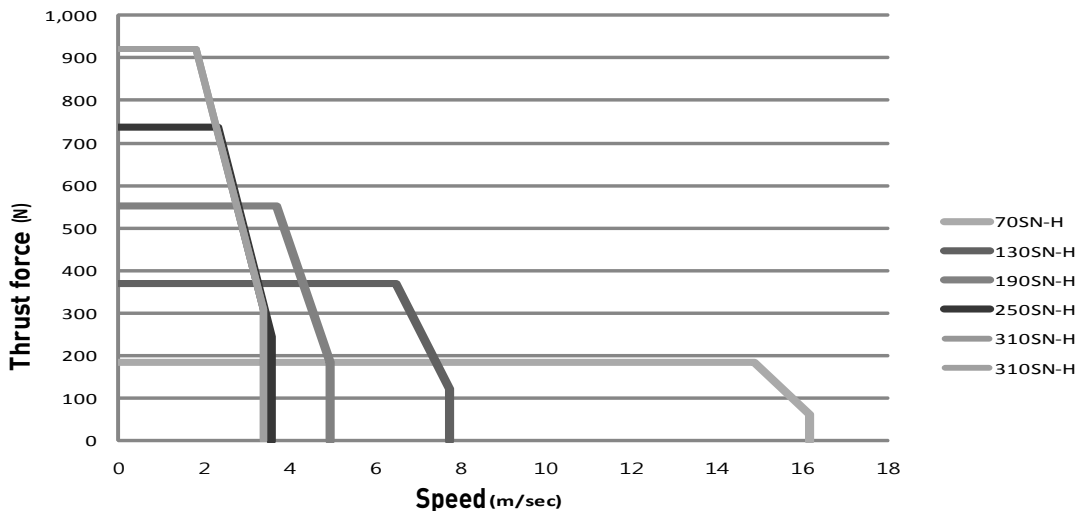
- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155°C
- Protection : natural cooling
- Environment : 0~40°C
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FMD		110A				
		70SN-H	130SN-H	190SN-H	250SN-H	310SN-H
Continuous Force	N	61.33	122.67	184.00	245.33	306.66
Continuous Current	Arms	3.80	3.80	3.80	3.80	3.80
Peak Force	N	184.00	368.00	552.00	736.00	920.00
Peak Current	Arms	11.40	11.40	11.40	11.40	11.40
Resistance	$\Omega(p-p)$	0.92	1.84	2.76	3.68	4.60
Inductance	mH(p-p)	3.95	7.90	11.84	15.79	19.74
Force Constant	N/Arms	16.14	32.28	48.42	64.56	80.70
B-Emp Constant	Vrms/(m/s)	8.35	16.70	25.05	33.40	41.75
Motor Constant	N/ \sqrt{W}	13.74	19.43	23.80	27.48	30.82
Electrical Time Constant	Ms	4.29	4.29	4.29	4.29	4.29
Normal Force	N	306.67	613.33	920.00	1226.67	1533.34
Power Loss	W	19.93	39.85	59.78	79.71	99.64
Mover Weight	Kg	0.82	1.37	1.91	2.48	3.03

Thrust force VS Speed

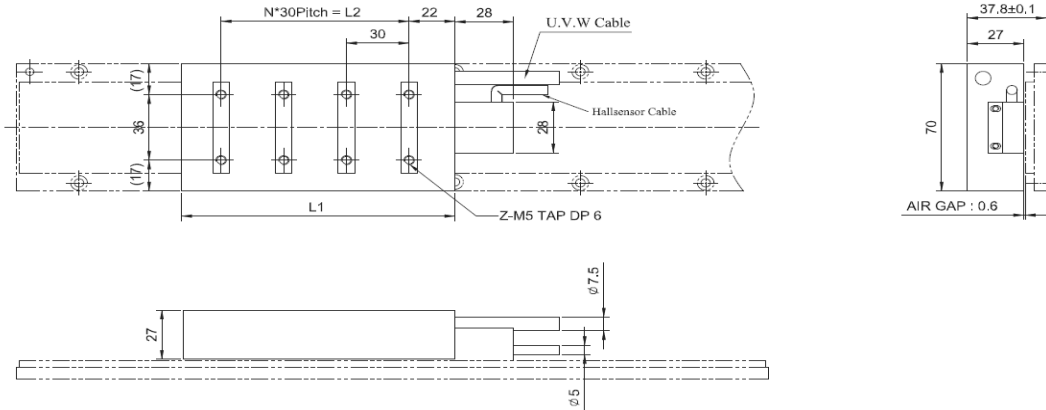
FMD110A-□□□SN-H



MECHANICAL DIMENSIONS

(UNIT : mm)

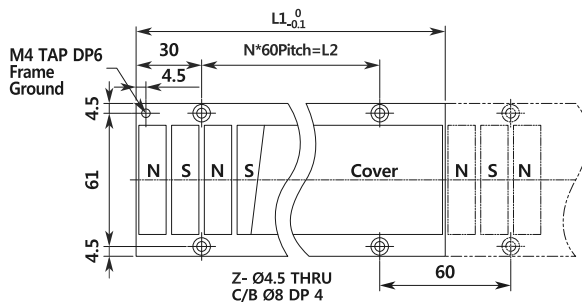
Motor (FMD110A-□□□SN-H)



Linear Motor FMD110A	L1	L2	N	Z	Weight (kg)
70SN-H	71	30	1	4	0.65
130SN-H	131	90	3	8	1.17
190SN-H	191	150	5	12	1.71
250SN-H	251	210	7	16	2.28

●Motor Cable		●Hallsensor Cable	
Title	Color	Title	Color
U	Orange	5V	Red
V	Yellow	0V	Black
W	Black	HA	Yellow
G	Green	HB	White
		HC	Blue
		Shield	

Stator (FMD-□□□M)

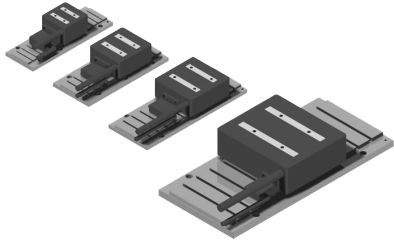


Linear Stator FMD	L1	L2	N	Z	Weight (kg)
180M	180	120	2	6	0.82
240M	240	180	3	8	1.09
360M	360	300	5	10	1.64

◎ M4 TAP is starting position of stator

Specifications

IRON CORE TYPE - FLA200A Series



Basic specifications

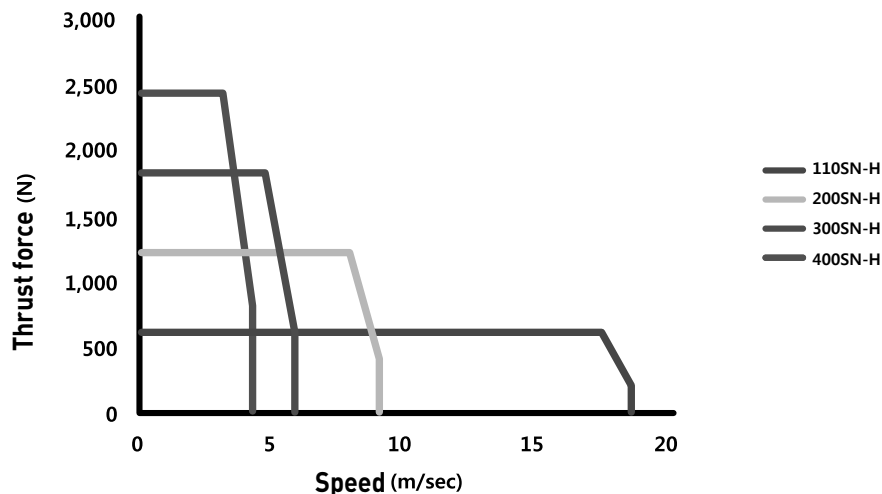
- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155°C
- Protection : natural cooling
- Environment : 0~40°C
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FLA		200A			
		110SN-H	200SN-H	300SN-H	400SN-H
Continuous Force	N	158.82	317.65	476.47	635.29
Continuous Current	Arms	6.4	6.4	6.4	6.4
Peak Force	N	476.47	952.94	1429.41	1905.88
Peak Current	Arms	19.20	19.20	19.20	19.20
Resistance	$\Omega(p-p)$	0.81	1.63	2.44	3.25
Inductance	mH(p-p)	6.70	13.39	20.09	26.78
Force Constant	N/Arms	24.82	49.63	74.45	99.26
B-EMF Constant	Vrms/(m/s)	19.74	39.48	59.22	78.96
Motor Constant	N/√W	22.46	31.77	38.91	44.93
Electrical Time Constant	ms	8.23	8.23	8.23	8.23
Normal Force	N	794.12	1588.23	2382.35	3176.46
Power Loss	W	49.99	99.97	149.96	199.95
Mover Weight	kg	2.10	4.20	6.30	8.40

Thrust force VS Speed

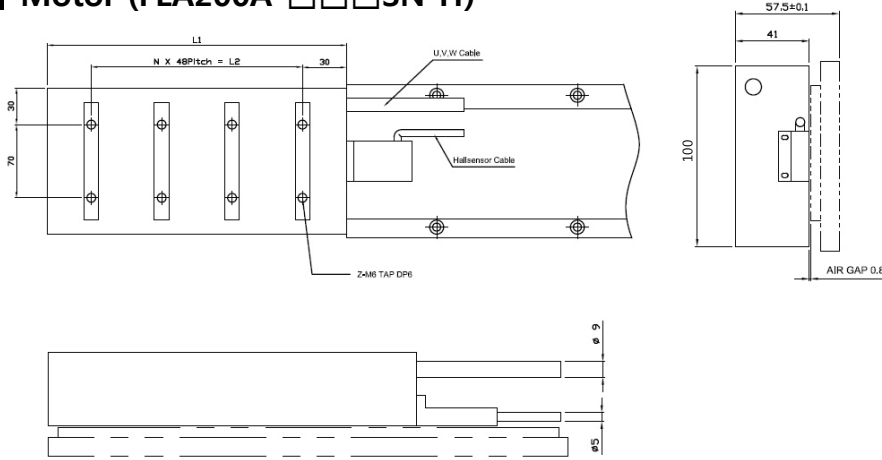
FLA200A-□□□SN-H



MECHANICAL DIMENSIONS

(UNIT : mm)

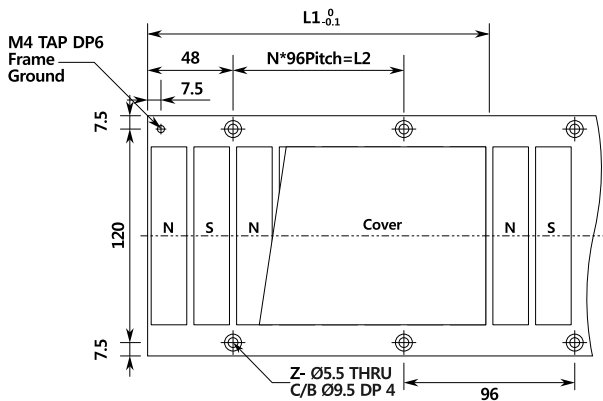
■ **Motor (FLA200A-□□□SN-H)**



Linear Motor FLA200A	L1	L2	N	Z	Weight (kg)
110S	108	48	1	4	2.86
200S	204	144	3	8	5.46
300S	300	240	5	12	8.14
400S	396	336	7	16	10.67

●Motor Cable		●Hallsensor Cable	
Title	Color	Title	Color
U	Orange	5V	Red
V	Yellow	0V	Black
W	Black	HA	Yellow
G	Green	HB	White
		HC	Blue
		Shield	

■ **Stator (FLA-□□□M)**

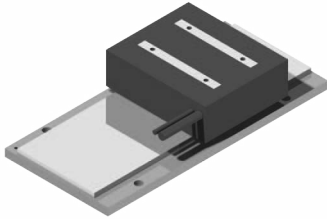


Linear Stator FLA	L1	L2	N	Z	Weight (kg)
192M	192	96	1	4	2.10
288M	288	192	2	6	3.10
384M	384	288	3	8	4.20

⊙ M4 TAP is starting position of stator

Specifications

IRON CORE TYPE FLB230A Series



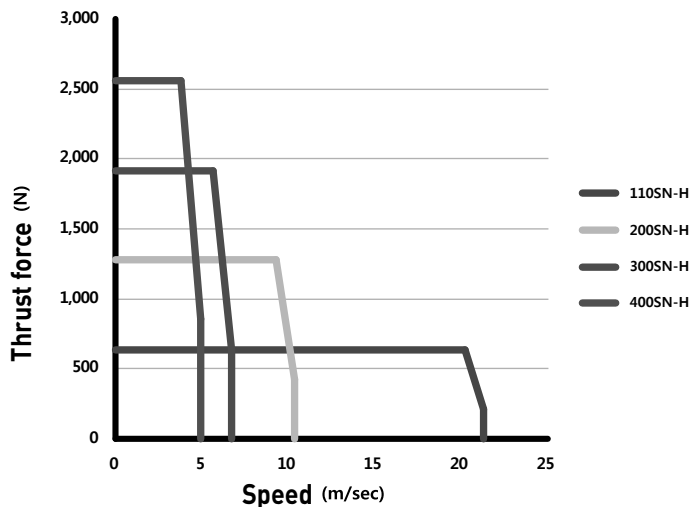
Basic specifications

- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155°C
- Environment : 0~40°C
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FLB		230A			
		110SN-H	200SN-H	300SN-H	400SN-H
Continuous Force	N	213.00	426.00	639.00	852.00
Continuous Current	Arms	7.80	7.80	7.80	7.80
Peak Force	N	639.00	1278.00	1917.00	2556.00
Peak Current	Arms	23.40	23.40	23.40	23.40
Resistance	$\Omega(p-p)$	0.66	1.32	1.98	2.65
Inductance	mH(p-p)	5.70	11.40	17.09	22.79
Force Constant	N/Arms	27.31	54.62	81.92	109.23
B-EMP Constant	Vrms/(m/s)	14.21	28.42	42.63	56.84
Motor Constant	N/ \sqrt{W}	27.42	38.77	47.49	54.83
Electrical Time Constant	ms	8.62	8.62	8.62	8.62
Normal Force	N	1065.00	2130.00	3195.00	4260.00
Power Loss	W	60.36	120.72	181.08	241.43
Mover Weight	kg	3.10	6.20	9.30	12.40

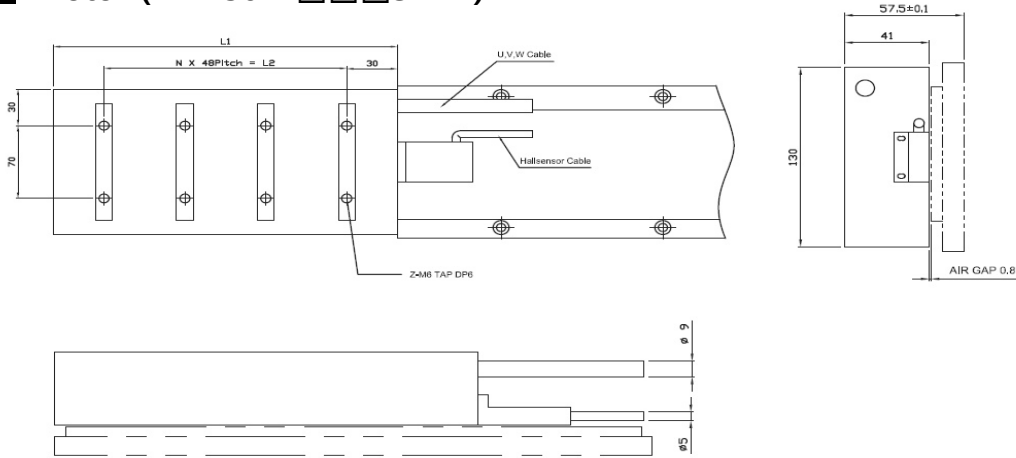
Thrust force VS Speed FLB230A-□□□SN-H



MECHANICAL DIMENSIONS

(UNIT : mm)

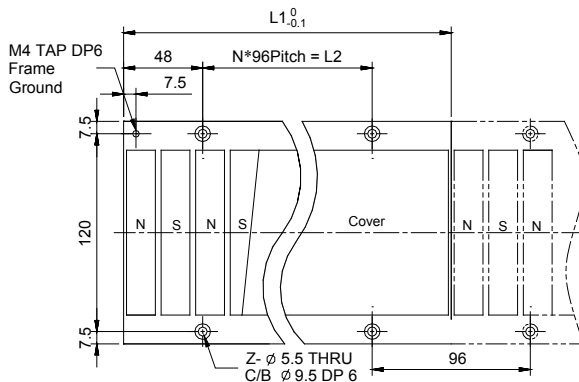
■ **Motor (FLB230A-□□□SN-H)**



Linear Motor FLB230A	L1	L2	N	Z	Weight (kg)
110SN-H	108	48	1	4	3.10
200SN-H	204	144	3	8	6.20
300SN-H	300	240	5	12	9.30
400SN-H	396	336	7	16	12.40

●Motor Cable		●Hallsensor Cable	
Title	Color	Title	Color
U	Orange	+5V	Red
V	Yellow	0V	Black
W	Blue	HA	Yellow
FG	Green	HB	White
		HC	Blue
		Shield	

■ **Stator (FLB-□□□M)**

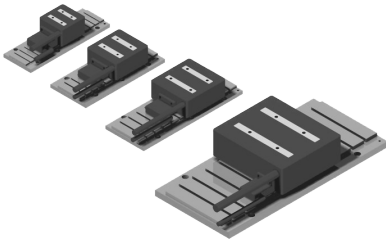


Linear Stator FLB	L1	L2	N	Z	Weight (kg)
192M	192	96	1	4	2.10
288M	288	192	2	6	3.10
384M	384	288	3	8	4.20

◎ M4 TAP is starting position of stator

Specifications

IRON CORE TYPE - FEX450A Series



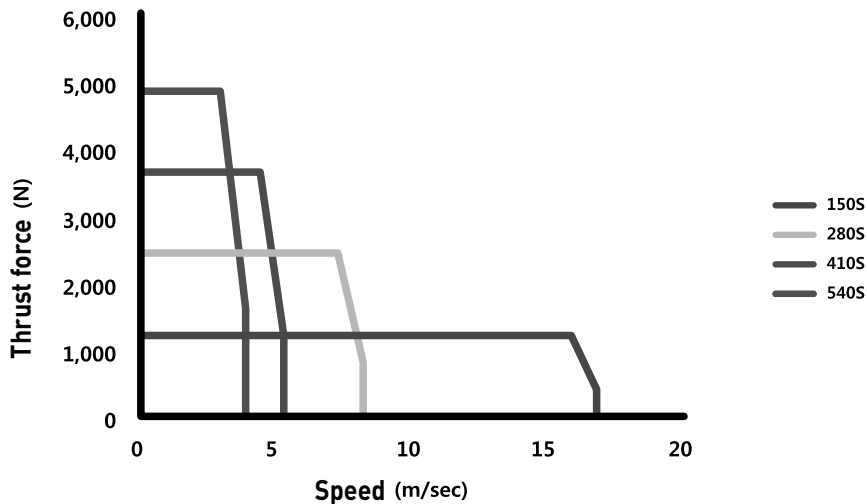
Basic specifications

- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155℃
- Protection : natural cooling
- Environment : 0~40℃
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FEX	Unit	450A			
		150S	280S	410S	540S
Continuous Force	N	405.33	810.67	1216.00	1621.33
Continuous Current	Arms	15.00	15.00	15.00	15.00
Peak Force	N	1216.00	2432.00	3648.00	4864.00
Peak Current	Arms	45.00	45.00	45.00	45.00
Resistance	$\Omega(p-p)$	0.37	0.74	1.11	1.48
Inductance	mH(P-P)	5.61	11.23	16.84	22.46
Force Constant	N/Arms	27.02	54.04	81.07	108.09
B-EMP Constant	Vrms/(m/s)	17.90	35.80	53.70	71.60
Motor Constant	N/√W	36.27	51.30	62.83	72.54
Electrical Time Constant	ms	15.17	15.17	15.17	15.17
Normal Force	N	2026.67	4053.00	6080.00	8107.00
Power Loss	W	124.88	249.75	374.63	499.50
Mover Weight	kg	5.46	10.61	15.88	21.85

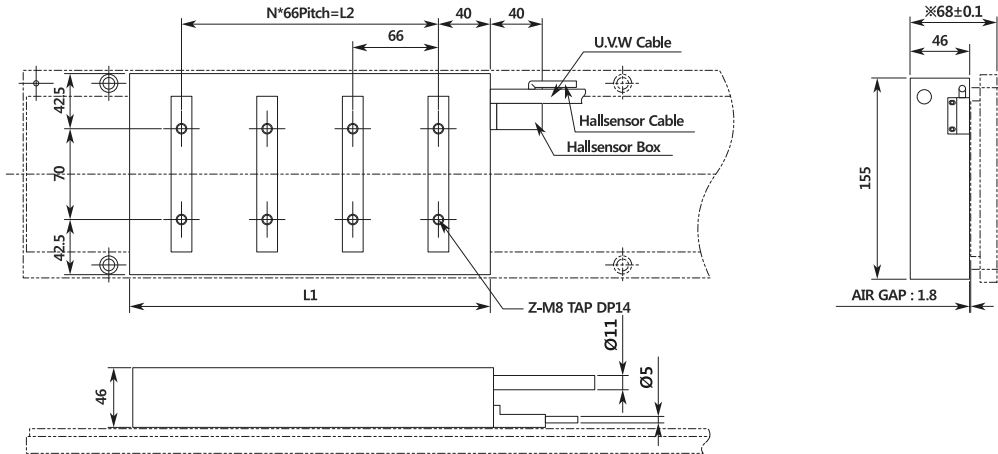
Thrust force VS Speed FEX450A-□□□S



MECHANICAL DIMENSIONS

(UNIT : mm)

■ **Motor (FEX450A-□□□S)**

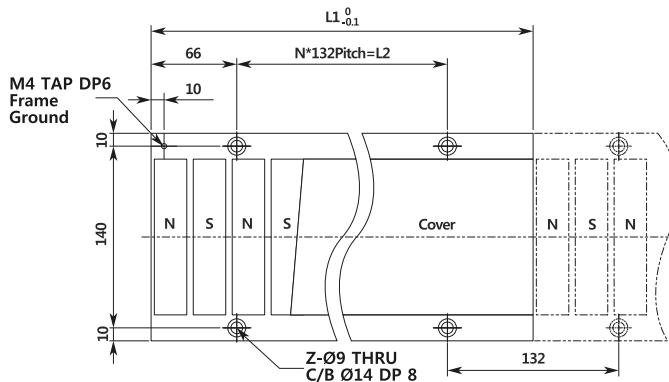


Linear Motor FEX450A	L1	L2	N	Z	Weight (kg)
150S	146	66	1	4	5.46
280S	278	198	3	8	10.61
410S	410	330	5	12	15.88
540S	542	462	7	16	21.85

● Motor Cable	
Title	Color
U	Orange
V	Yellow
W	Black
G	Green

● Hallsensor Cable	
Title	Color
SV	Red
OV	Black
HA	Yellow
HB	White
HC	Blue
Shield	

■ **Stator (FEX-□□□M)**

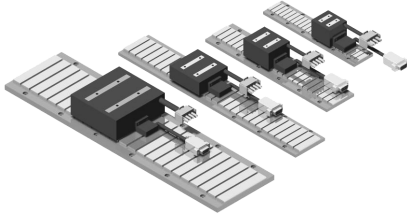


Linear Stator FEX	L1	L2	N	Z	Weight (kg)
264M	264	132	1	4	5.70
396M	396	264	2	6	8.50
528M	528	396	3	8	11.40

◎ M4 TAP is starting position of stator

Specifications

IRON CORE TYPE FMIC40A Series(Compact type)



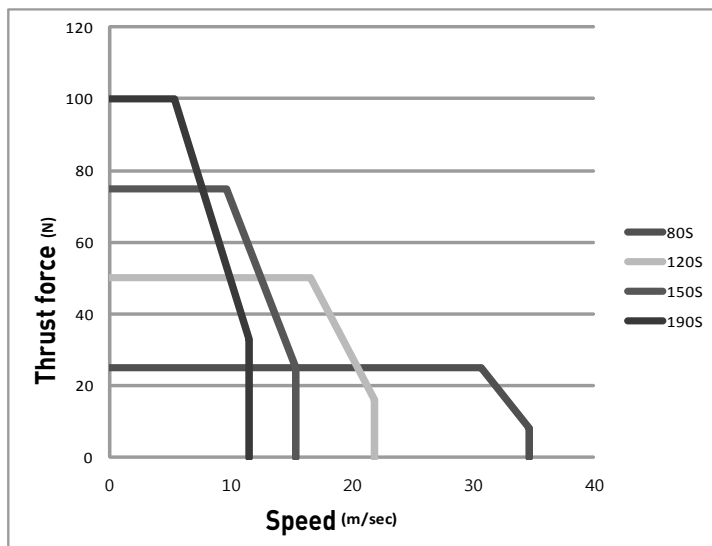
Basic specifications

- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155°C
- Protection : natural cooling
- Environment : 0~40°C
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FMIC		40A			
		50S	80S	120S	150S
Continuous Force	N	8.35	16.70	25.05	33.40
Continuous Current	Arms	1.30	1.30	1.30	1.30
Peak Force	N	25.05	50.10	75.15	100.20
Peak Current	Arms	3.90	3.90	3.90	3.90
Resistance	$\Omega(p-p)$	1.15	2.30	3.45	4.60
Inductance	mH(P-P)	1.00	2.00	3.00	4.00
Force Constant	N/Arms	6.42	12.85	19.26	25.68
B-EMP Constant	Vrms/(m/s)	5.57	11.14	16.71	22.28
Motor Constant	N/W	4.89	6.91	9.78	13.82
Electrical Time Constant	ms	0.87	0.87	0.87	0.87
Normal Force	N	41.75	83.50	125.25	167.00
Power Loss	W	2.92	5.84	8.76	11.68
Mover Weight	kg	0.15	0.29	0.69	0.89

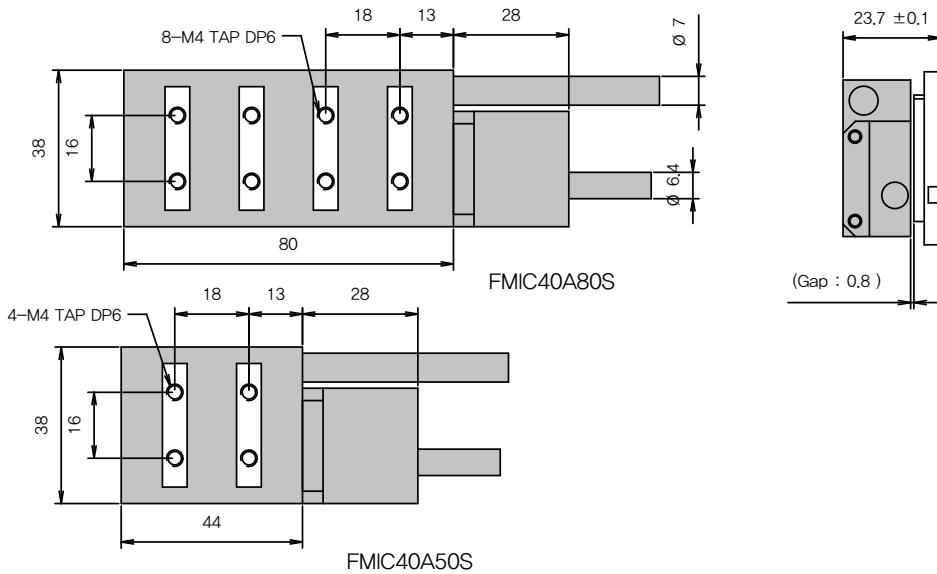
Thrust force VS Speed FMIC40A-□□□S



MECHANICAL DIMENSIONS

(UNIT : mm)

■ **Motor (FMIC40A-□□□S)**



Linear Motor FMIC 40A	L1	L2	N	Z	Weight (Kg)
50S	44	18	1	4	0.23
80S	80	54	3	8	0.45
120S	116	90	5	12	0.67
150S	152	126	7	16	0.89

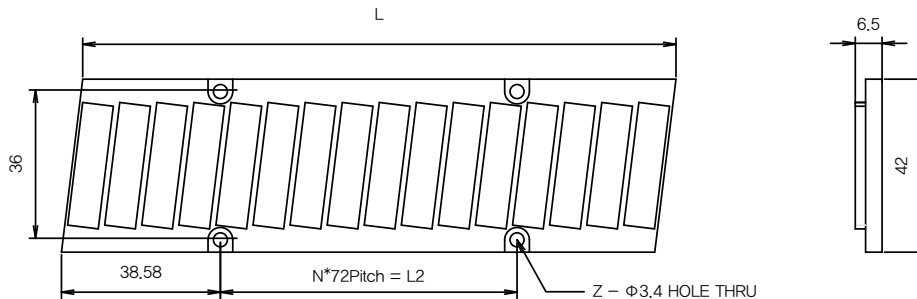
●Motor Cable

Title	Color
U	Orange
V	Yellow
W	Black
G	Green

●Hallsensor Cable

Title	Color
5V	Red
0V	Black
HA	Yellow
HB	White
HC	Blue
Shield	

■ **Stator (FMIC-□□□M)**

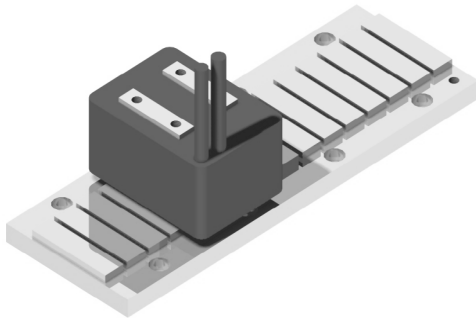


Linear Stator FMIC	L	L2	N	Z	Weight(kg)
144M	144	72	1	4	0.25
216M	216	144	2	6	0.37
288M	288	216	3	8	0.51

Specifications

(order made)

IRON CORE TYPE FMI35S (Ultra compact type)



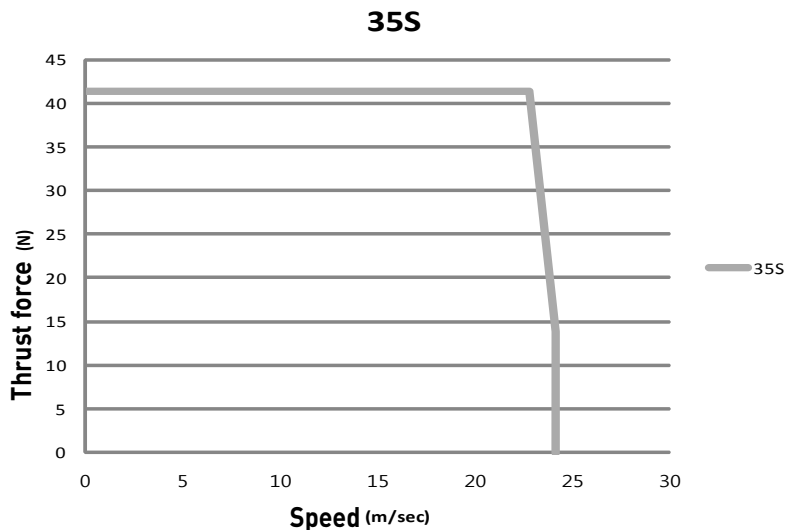
Basic specifications

- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155°C
- Environment : 0~40°C
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FMI		40A
		35S
Continuous Force	N	13.8
Continuous Current	Arms	1.30
Peak Force	N	41.4
Peak Current	Arms	3.90
Resistance	Ω (p-p)	1.84
Inductance	mH(P-P)	3.26
Force Constant	N/Arms	10.62
B-EMP Constant	Vrms/(m/s)	5.64
Motor Constant	N/ \sqrt{W}	6.4
Electrical Time Constant	ms	1.78
Normal Force	N	69
Power Loss	W	4.65
Mover Weight	kg	0.20

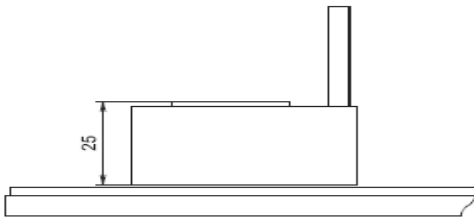
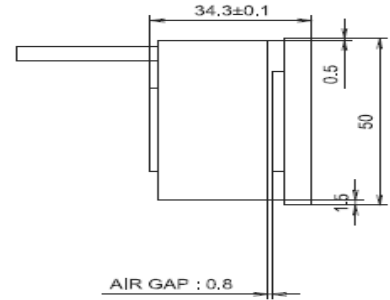
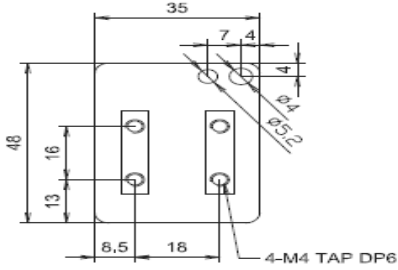
Thrust force VS Speed FMI40A-□□□S



MECHANICAL DIMENSIONS

(UNIT : mm)

Motor (FMI40A-35S)



Linear Motor FMI40A	L1	L2	N	Z	Weight (kg)
35S	35	18	1	4	0.20

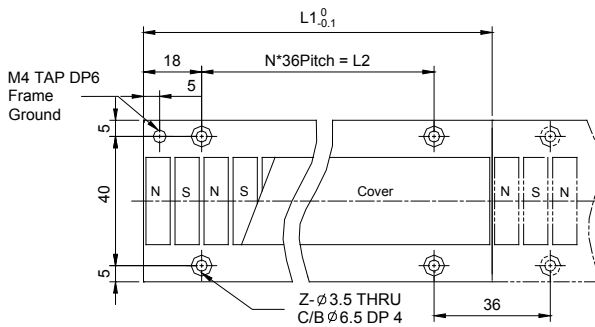
●Motor Cable

Title	Color
U	Orange
V	Yellow
W	Blue
G	Green

●Hallsensor Cable

Title	Color
5V	Red
0V	Black
HA	Yellow
HB	White
HC	Blue
Shield	

Stator (FMI-□□□M)



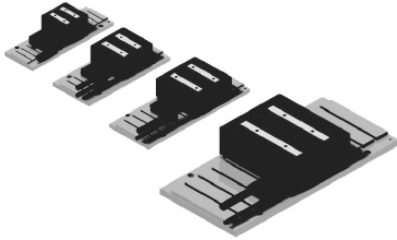
Linear Stator FMI	L1	L2	N	Z	Weight (kg)
144M	144	108	3	8	0.41
252M	252	216	6	14	0.71
324M	324	288	8	18	0.92

◎ M4 TAP is starting position of stator

Specifications

(order made)

IRON CORE TYPE-FMD110A Series



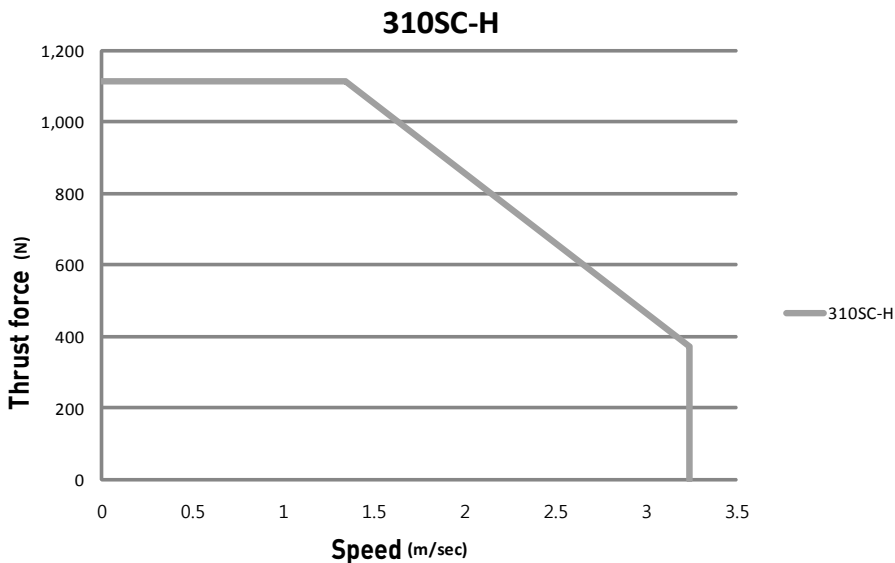
Basic specifications

- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155°C
- Protection : natural cooling
- Environment : 0~40°C
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor FMD		110A
		310SC-H
Continuous Force	N	371.00
Continuous Current	Arms	3.80
Peak Force	N	1113.00
Peak Current	Arms	11.40
Resistance	Ω (p-p)	4.60
Inductance	mH(p-p)	19.74
Force Constant	N/Arms	97.87
B-EMP Constant	Vrms/(m/s)	53.25
Motor Constant	N/ \sqrt{W}	37.79
Electrical Time Constant	ms	4.29
Normal Force	N	2169.45
Power Loss	W	96.40

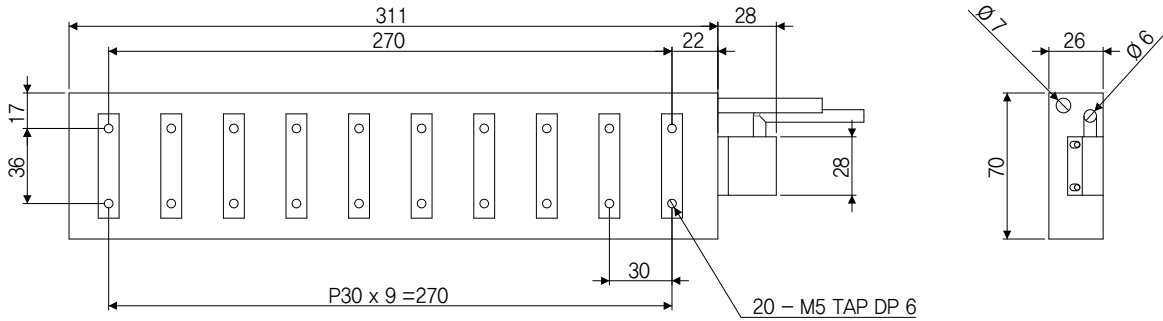
Thrust force VS Speed FMD110A-□□□SC-H



MECHANICAL DIMENSIONS

(UNIT : mm)

Motor (FMD110A-310SC-H)



Linear Motor FMD110A	L1	L2	N	Z	Weight (kg)
310SC-H	311	270	9	20	

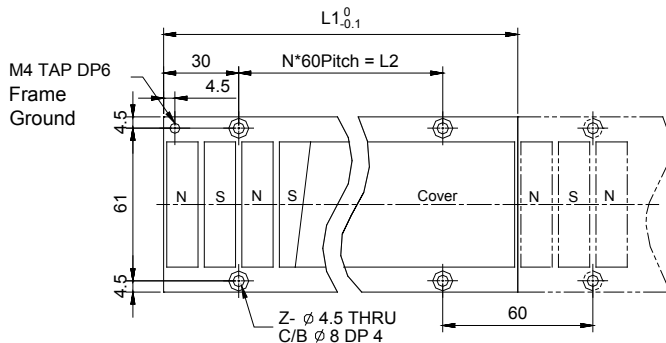
●Motor Cable

Title	Color
U	Orange
V	Yellow
W	Blue
G	Green

●Hallsensor Cable

Title	Color
5V	Red
0V	Black
HA	Yellow
HB	White
HC	Blue
Shield	

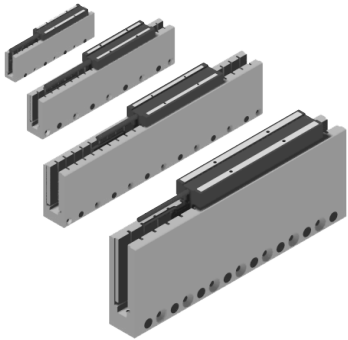
Stator (FMD-□□□M)



Linear Stator FMD	L1	L2	N	Z	Weight (kg)
180M	180	120	2	6	0.82
240M	240	180	3	8	1.09
360M	360	300	5	12	1.64

◎ M4 TAP is starting position of stator

Specifications



CORELESS TYPE GMD110A Series

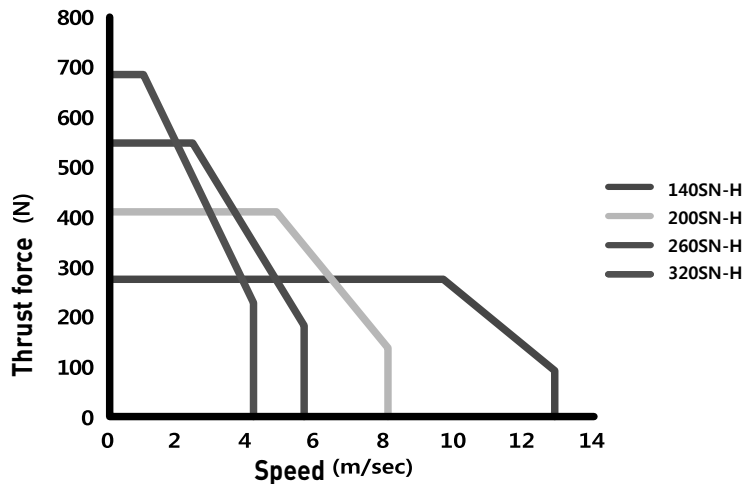
Basic specifications

- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155°C
- Protection : natural cooling
- Environment : 0~40°C
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor GMD	Unit	110A			
		140SN-H	200SN-H	260SN-H	320SN-H
Continuous Force	N	91.33	137.00	182.67	228.33
Continuous Current	Arms	3.80	3.80	3.80	3.80
Peak Force	N	274.00	411.00	548.00	685.00
Peak Current	Arms	11.40	11.40	11.40	11.40
Resistance	Ω (p-p)	2.73	4.10	5.46	6.83
Inductance	mH(P-P)	4.18	6.27	8.35	10.44
Force Constant	N/Arms	24.04	36.05	48.07	60.09
B-EMP Constant	Vrms/(m/s)	11.22	16.83	22.44	28.05
Motor Constant	N/ \sqrt{W}	11.24	13.76	15.89	17.77
Electrical Time Constant	ms	1.53	1.53	1.53	1.53
Normal Force	N	0.00	0.00	0.00	0.00
Power Loss	W	66.08	99.11	132.15	165.19
Mover Weight	kg	0.83	1.24	1.65	2.06

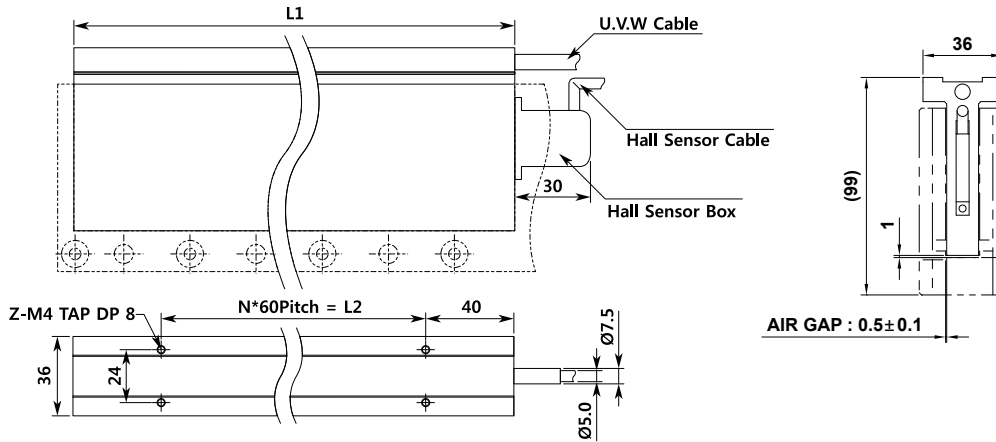
Thrust force VS Speed GMD110A-□□□SN-H



MECHANICAL DIMENSIONS

(UNIT : mm)

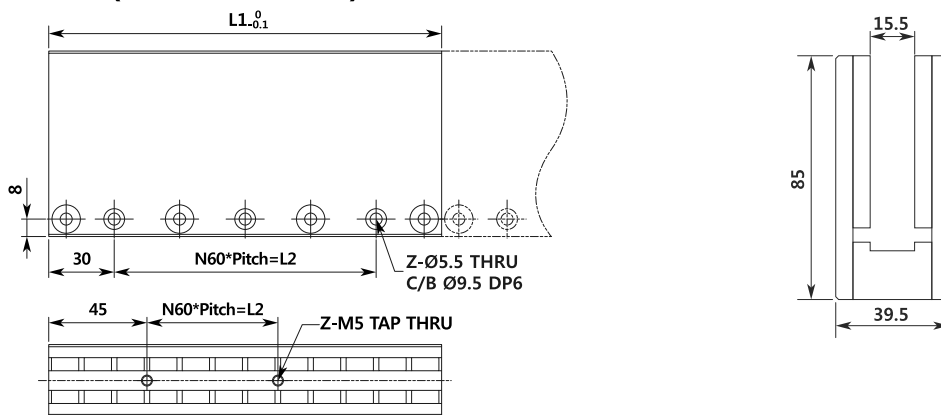
■ **Motor (GMD110A-□□□SN-H)**



Linear Motor GMD110A	L1	L2	N	Z	Weight (kg)
140SN-H	140	60	1	4	0.83
200SN-H	200	120	2	6	1.24
260SN-H	260	180	3	8	1.65
320SN-H	320	240	4	10	2.06

● Motor Cable		● Hallsensor Cable	
Title	Color	Title	Color
U	Orange	5V	Red
V	Yellow	0V	Black
W	Black	HA	Yellow
G	Green	HB	White
		HC	Blue
		Shield	

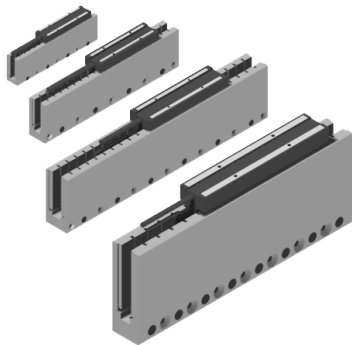
■ **Stator (GMD-□□□M)**



Linear Stator GMD	L1	L2	N	Z	Weight (kg)
180M	180	120	2	3	2.40
240M	240	180	3	4	3.22
360M	360	300	5	6	4.75

⊙ M4 TAP is starting position of stator

Specifications



CORELESS TYPE GLA200A Series

Basic specifications

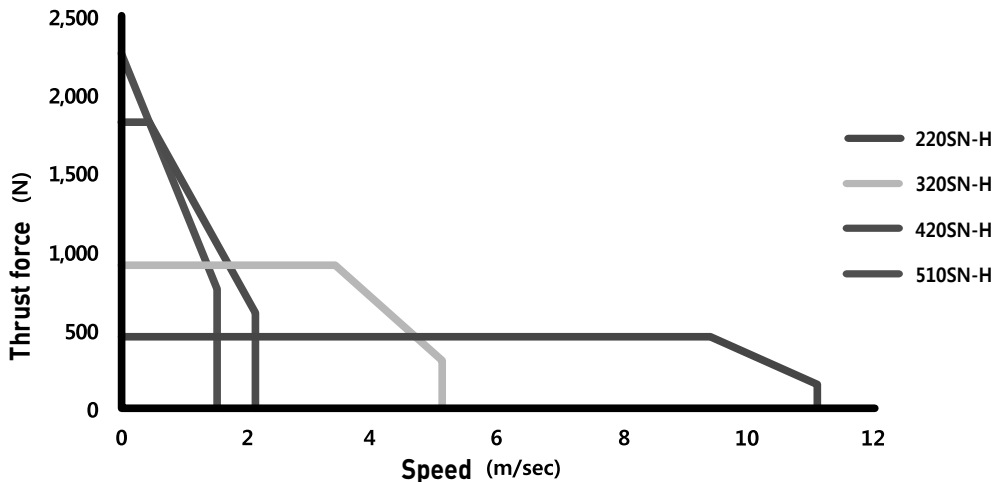
- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155°C
- Protection : natural cooling
- Environment : 0~40°C
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor GLA		200A			
		220SN-H	320SN-H	420SN-H	510SN-H
Continuous Force	N	294.00	441.00	588.00	735.00
Continuous Current	Arms	6.40	6.40	6.40	6.40
Peak Force	N	882.00	1323.00	1764.00	2205.00
Peak Current	Arms	19.20	19.20	19.20	19.20
Resistance	Ω (p-p)	2.66	3.99	5.32	6.65
Inductance	mH(p-p)	11.34	17.01	22.68	28.35
Force Constant	N/Arms	45.94	68.91	91.88	114.84
B-EMP Constant	Vrms/(m/s)	23.50	35.25	47.00	58.74
Motor Constant	N/ \sqrt{W}	21.80	26.70	30.83	34.46
Electrical Time Constant	ms	4.26	4.26	4.26	4.26
Normal Force	N	0	0	0	0
Power Loss	W	181.94	272.90	363.87	454.84
Mover Weight	kg	2.35	3.33	4.31	5.30

Thrust force VS Speed

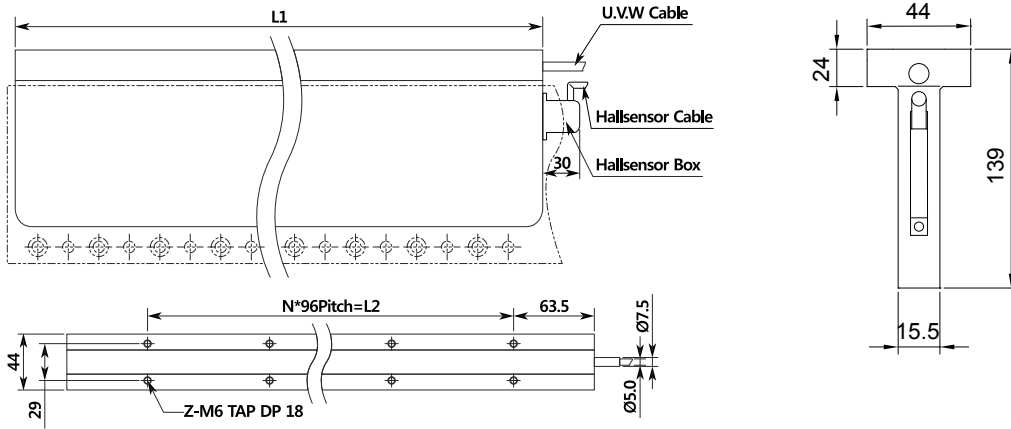
GLA200A-□□□SN-H



MECHANICAL DIMENSIONS

(UNIT : mm)

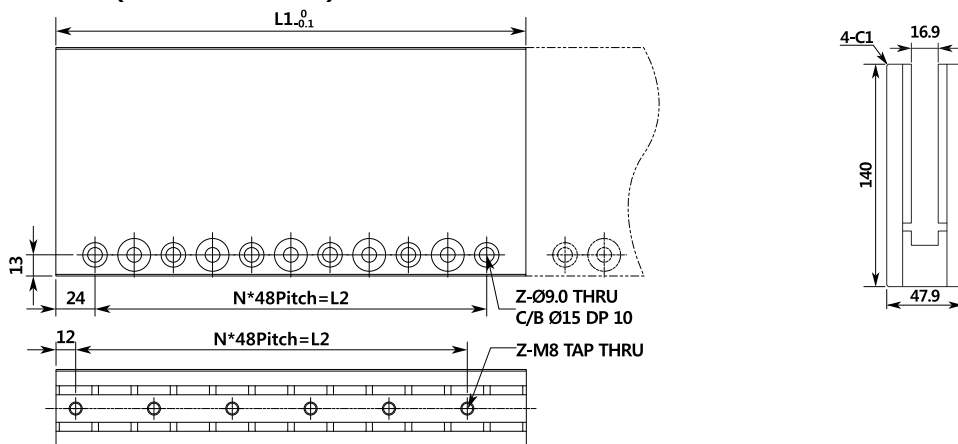
■ **Motor (GLA120A-□□□SN-H)**



Linear Motor GLA120A	L1	L2	N	Z	Weight (kg)
220SN-H	223	192	1	4	2.35
320SN-H	319	288	2	6	3.33
420SN-H	415	384	3	8	4.31
510SN-H	511	480	4	10	5.30

● Motor Cable		● Hallsensor Cable	
Title	Color	Title	Color
U	Orange	5V	Red
V	Yellow	0V	Black
W	Black	HA	Yellow
G	Green	HB	White
		HC	Blue
		Shield	

■ **Stator (GLA-□□□M)**

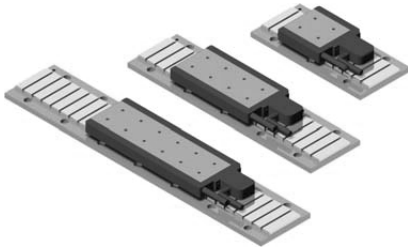


Linear Stator GLA	L1	L2	N	Z	Weight (kg)
192M	192	144	3	4	5.75
288M	288	240	5	6	8.62
384M	384	336	7	8	11.48

◎ M4 TAP is starting position of stator

Specifications

IRON CORE TYPE SSM60A Series



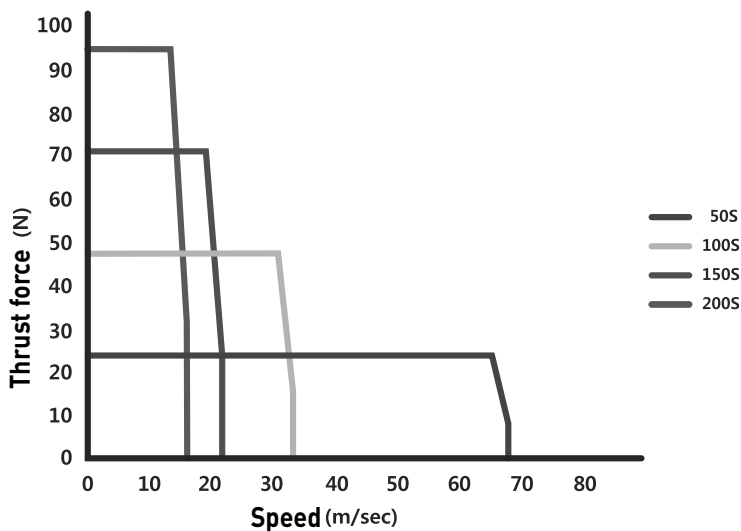
Basic specifications

- Rated condition : constant
- Insulation withstand voltage : AC1500v,1Min.
- Coil insulation degree :F degree, 155℃
- Protection : natural cooling
- Environment : 0~40℃
- Hall sensor : option
- Insulation resistance : DC500V, 10M Ohm
- Power option : square-wave or sine wave, 3 phase
- Connector : option
- Cable : 600mm

Performance

Linear Motor SSM	Unit	60A			
		50S	100S	150S	200S
Continuous Force	N	8.00	15.73	23.60	31.47
Continuous Current	Arms	2.00	2.00	2.00	2.00
Peak Force	N	24.00	47.20	70.80	94.40
Peak Current	Arms	6.00	6.00	6.00	6.00
Resistance	Ω (p-p)	0.88	1.75	2.63	3.50
Inductance	mH(P-P)	0.27	0.54	0.81	1.09
Force Constant	N/Arms	4.00	7.87	11.80	15.73
B-EMP Constant	Vrms/(m/s)	2.03	4.06	6.09	8.12
Motor Constant	N/ \sqrt{W}	3.00	4.69	5.74	6.63
Electrical Time Constant	ms	0.31	0.31	0.31	0.31
Normal Force	N	1.00	2.40	3.60	4.80
Power Loss	W	6.00	11.25	16.88	22.51
Mover Weight	kg	0.18	0.36	0.54	0.72

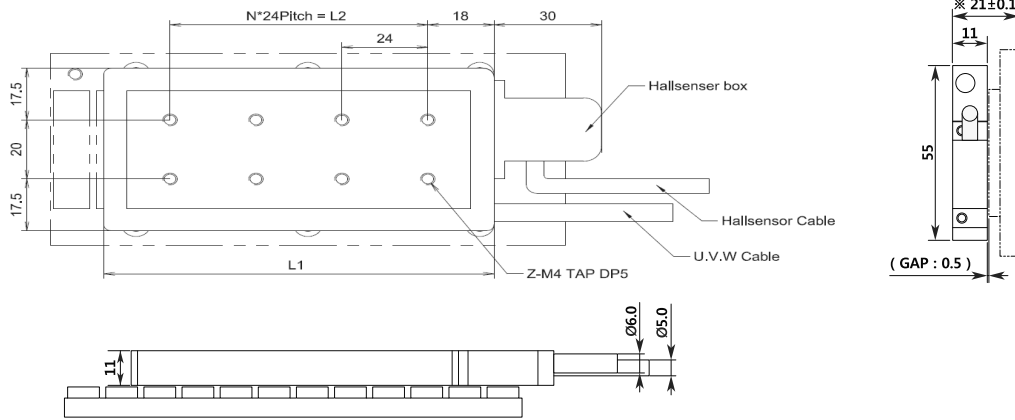
Thrust force VS Speed SSM60A-□□□S



MECHANICAL DIMENSIONS

(UNIT : mm)

Motor (SSM60A-□□□S)



Linear Motor SSM60A	L1	L2	N	Z	Weight (kg)
60SN	60	24	1	4	0.18
110SN	108	72	3	8	0.36
160SN	156	120	5	12	0.54
200SN	204	168	7	16	0.72

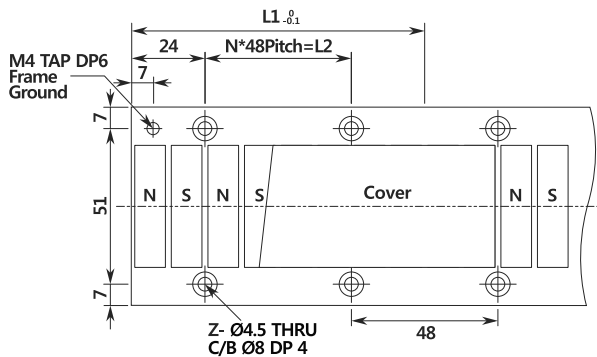
●Motor Cable

Title	Color
U	Orange
V	Yellow
W	Blue
G	Green

●Hallsensor Cable

Title	Color
5V	Red
0V	Black
HA	Yellow
HB	White
HC	Blue
Shield	

Stator (SSM-□□□M)



Linear Stator NMTL-SSM	L1	L2	N	Z	Weight (kg)
144M	144	96	2	6	0.57
240M	240	192	4	10	0.95
336M	336	288	6	14	1.33

■ M4 TAP is starting position of stator

How to select motor

■ Calculate max thrust force and continuous thrust force and then select motor

- V : Velocity(m/s)
- Aa : Acceleration(m/s²)
- Ad : Deceleration(m/s²)
- X : Stroke(m)
- u : Bearing friction coefficient
- Fe : Other resistance(N)
- Ef : Frictional force(N)
- Fa : Accelerating force(N)
- Fd : Decelerating force(N)
- Ft : Continuous thrust force(N)
- M : Total weight(Kg)

$$t_a = \frac{V}{A_a} \quad t_d = \frac{V}{A_d} \quad t_f = \frac{1}{V} \left(X - \frac{V(t_a+t_d)}{2} \right)$$

$$t = t_a + t_f + t_d + t_{dwell} \quad t_{dwell} = 0.2$$

$$F_f = u \times M \times (9.81 + A_a \times 5) + F_e$$

$$F_a = M \times A_a + F_f$$

$$F_d = F_f - M \times A_d$$

$$F_t = \sqrt{\frac{F_a^2 \times t_a + F_f^2 \times t_f + F_d^2 \times t_d}{t}}$$

- Continuous force on catalog should be bigger than (Ft/Efficiency)and peak force should be bigger than(Fa× safety factor)
- Safety factor : standard safty factor 1.2 applied
- Efficiency : standard efficiency 0.6 applied

Example

- V : 3 m/s
- Aa : 19.6 m/s²
- Ad : 9.8 m/s²
- M : Load3Kg + Mover[table]2Kg + Mover 1Kg
- X : 1.5 m
- u : 0.005
- Fe : 20 N

$$t_a = \frac{V}{A_a} = 0.153s$$

$$t_d = \frac{V}{A_d} = 0.306s$$

$$t_{dwell} = 0.2$$

$$t_f = \frac{1}{V} \left(X - \frac{V(t_a+t_d)}{2} \right) = 0.270s$$

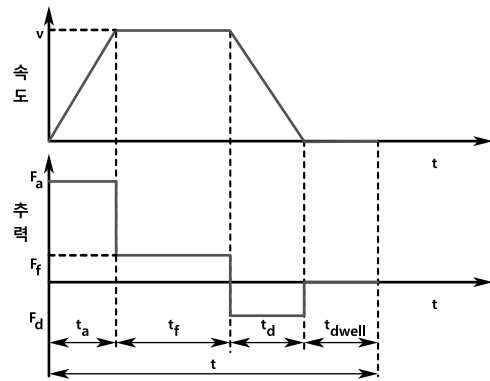
$$t = t_a + t_f + t_d + t_{dwell} = 0.929s$$

$$F_t = u \times M \times (9.81 + A_a \times 5) + F_e = 23.23N$$

$$F_a = M \times A_a + F_f = 140.83N$$

$$F_d = F_f - M \times A_d = -35.57N$$

$$F_t = \sqrt{\frac{F_a^2 \times t_a + F_f^2 \times t_f + F_d^2 \times t_d}{t}} = 61.96N$$



- FSM60A-160S Continuous Force 124.57N > (Ft / 0.6 = 103.27N)
Peak Force 373.71N > (Fa * 1.2 = 169.00N)
- Recheck it with the weight of selected motor
FSM60A-160S Continuous Force 124.57N > (Ft / 0.6 = 104.20N)
Peak Force 373.71N > (Fa * 1.2 = 170.45N)
- Finally, FSM0A -160S is selected.