

Linear Engine

AUTOMATIC DOOR DRIVE UNIT

MM30 MM50 MM100

Distributed by:



Head office Japan

12th Floor | Tower West | Umeda Skybuilding 1-30
Oyodonaka 1-chome | kita-ku osaka 531-0076
Japan

Tel: (0081) 6 6 4549721
Fax: (0081) 6 6 454 9726
Email: info@kenwa.co.jp

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Linear Engine: the door to a new era.

Linear engine is a new mechanism for automatic door which is driven from the attraction or repulsion between the magnet and coil.
Since points of friction are significantly reduced, it makes the door opening and closing in unprecedentedly smooth and quiet way.

3 models are available for different purpose.

These three models could meet different workplace such as residential apartments, office building, hospitals, welfare facilities, factories, etc, and all other various uses.

MM 100

P 5



MM 50

P 7



MM 30

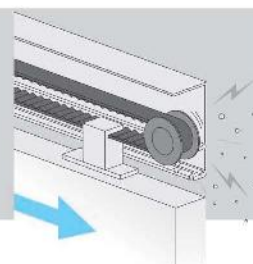
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Operating principle

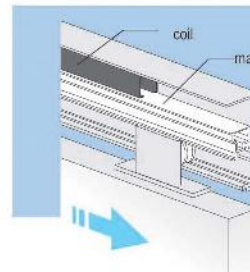
Conventional engines

A belt is connected to the door and driven by a rotary motor in order to open or close the door. In this way there create many points of frictions.



Linear Engine

The magnet is fixed on the door without contact to the coil (electromagnet). The door is opened or closed by the attraction and repulsion between the magnet and coil. Fewer points of friction in this way are created.



L I N E A R E N G I N E



Quiet and smooth opening and closing

The mechanism of linear motor makes the door opening and closing in unprecedentedly super smooth and quiet way.

comparison of operating noise (unit: dBA)

Linear engine automatic door	47 ※
Telephone bell	70
Quiet office	50
Library	40

※ This is the factory test results of M/M50 single door. (It's tested 1m from the test object)



It seldom produces powder dust and make the environment clean

Since fewer points of friction, It is suitable for clean rooms, food factories, and other place which is dust and dirt sensitive.



Highly safe return function

It can always detect the move speed of the door, and return the door reversely when the door hit the body or obstacles to ensure safety (safety return).



Function properly under power outage and other emergencies

Since the magnet is fixed on the door without contact to the coil (electromagnet), it can be used as a manual door when power outages and other emergencies happen.



Manual start- convenient assist function

After moving the door to direction of opening about 2cm, the door will open automatically, and after a certain time, the door will close automatically. Ideal for home and hospital use.

※ This function is a standard setting for MM50 and MM30, but not for MM100.



Versatile application. Linear engine could be widely spread.

For example, it demonstrates its quiet and safe feature when it's used for residence, offices and hospitals, while it demonstrates its no-dust feature when it's used for factory clean rooms. With comprehensive advantages, linear engine automatic doors have been installed in many places and will extend its application to an even bigger market.



* Please contact us for any special requirements.



LINEAR ENGINE

MM100



Quiet



Clean



clamp-proof



No affect during power outage

Recommended place for installation



Apartment building

Store

Office

Factory

Entrance

Office entrance



Shopping Entrance



Applicable the heavy door

It can open a single door of 30-90Kg or a Bi-parting door of 25-75Kg. It is extremely ideal for exterior doors

Quiet and smooth

Since the door is driven by a linear motor, it can be opened or closed in extremely quiet and smooth way.

Electronic locks compatible

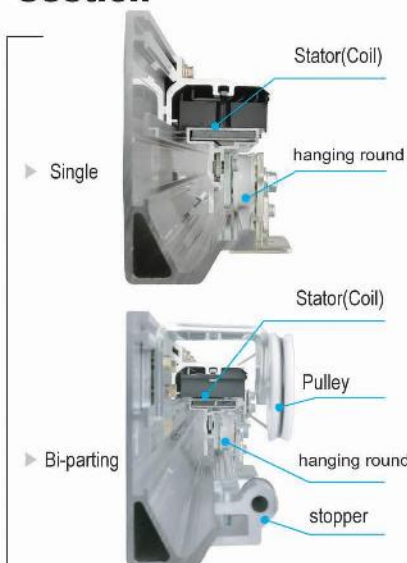
If you use specialized electronic lock (referring to page 10) and combined with the card reader, you can create an enter management system.

Specifications

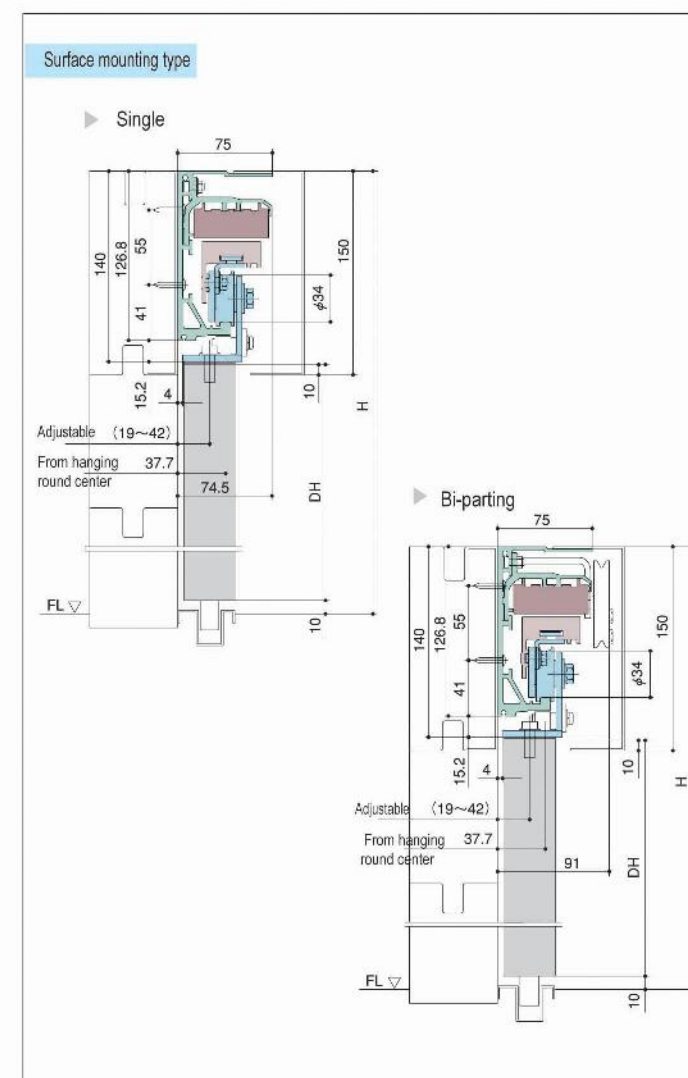
Model	MM100		
Required power capacity	AC100V 10% 50/60Hz MAX: 7A		
Operating temperature	-10 ~ 40 ℃		
Power consumption	Average when operating		0.41Wh / Once (Bi-parting, Door weight: 75kg / Door)
	Standby	No pushing force	2.1W (Starting sensors and auxiliary sensors are not included)
		Under pushing force	7.6W (Starting sensors and auxiliary sensors are not included)
Motor type	Magnet brushless DC linear motor movable type		
Thrust generation	When three stators are all fully lapped: 136N		
Door weight	Single	30 ~ 90kg / Door	
	Bi-parting	25 ~ 75kg / Door	
Door width	Single	> 700mm (If the electric lock equipped : > 830mm)	
	Bi-parting	> 650mm	
※ Self Weight	Built-in type	Single	About 12kg
		Bi-parting	About 18kg
	Surface mounting type	Single	About 12kg
		Bi-parting	About 19kg
Opening speed	0.2 ~ 0.5m/sec (set default : 0.4m/sec)		
Closing speed	0.2 ~ 0.5m/sec (set default : 0.3m/sec)		
Hold open time	1 ~ 11 seconds (set default : 3sec)		

※ Weight may vary depending on rail length.

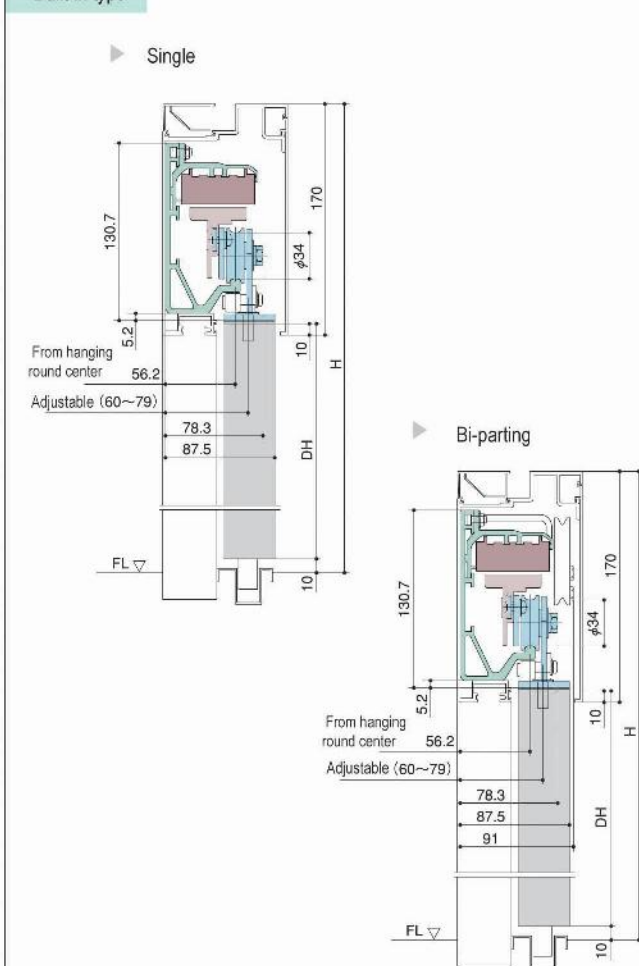
Section



Section



Built-in type





Quiet



Clean



Clamp-proof



Assist function



No affect during power outage

Quiet Clean Clamp-proof Assist function No affect during power outage

Recommended installation areas



Office building

Meeting room

Smoking room

Office entrance

Hospital & Welfare facilities

Living room

Clinic

Multifunctional toilets

Factory

Clean room

Meeting room

Public facilities

Multifunctional toilets

Child room

Office entrance

Living room



Assist function

After moving the door to direction of opening about 2cm, the door will open automatically, and after a certain time, the door will close automatically.

Highly safe return function

It can return the door immediately to a reverse direction when the door hit the body or obstacles during its opening.

Electronic locks compatible

If you use specialized electronic lock (referring to page 10) and combined with the card reader, you can create an enter management system.

Automatic type and assist type

This model includes 2 types: Automatic type and assist type. You can choose for your purpose.

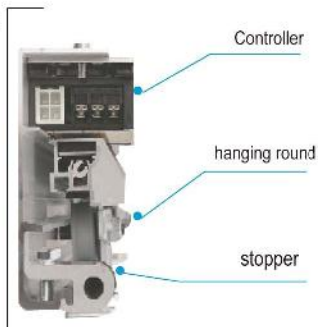
Function	Automatic type	Assist type	Description
Assist function	Standard	Standard	Manually move the door by 2cm, the door will automatically open.
Hold full open	No	Standard	Withstand the door fully open for more than 3 seconds, the door will keep at the opening status.
Free stop	No	Standard	When the door is pushed back manually by 80mm during its opening, the door will stop at any position.
Half open	No	Standard	Adjust the opening scope by adjusting the knob between half-opening and full-opening.
Safety Stop	Standard	Standard	When the door detects the obstacle continuously by 2 times at the same position, the door would automatically stop for safety.
Equipped with electronic locks	Option	No	Choose to install electronic locks.
Synchronized opening	Standard	No	Use two engines to form the Bi-parting door.

Specifications

Model	MM 50		
Required power capacity	AC100V 10% 50/60Hz MAX: 4A		
Operating temperature	-10 ~ 40 °C		
Power consumption	Average when operating		0.2Wh/Once (Door Weight: 50kg/door)
	Standby	No pushing force	2.8W (Starting sensors and auxiliary sensors are not included)
		Under pushing force	5.8W (Starting sensors and auxiliary sensors are not included)
Motor type	Magnet brushless DC linear motor movable type		
Thrust generation	When three stators are all fully lapped: 40N		
Door weight	20 ~ 50kg / Door		
Door width	> 700mm (If the electric lock equipped : > 800mm)		
* Self Weight	About 7kg		
Opening speed	0.2~0.5 m/sec (set default: 0.4 m/sec)		
Closing speed	Automatic type		0.2~0.5 m/sec (set default: 0.3 m/sec)
	Assist type		0.2 m/sec (fixed)
Hold open time	1 ~ 10 seconds. When it's set at maximum, it enters into ratchet action status (Set default: 3sec)		

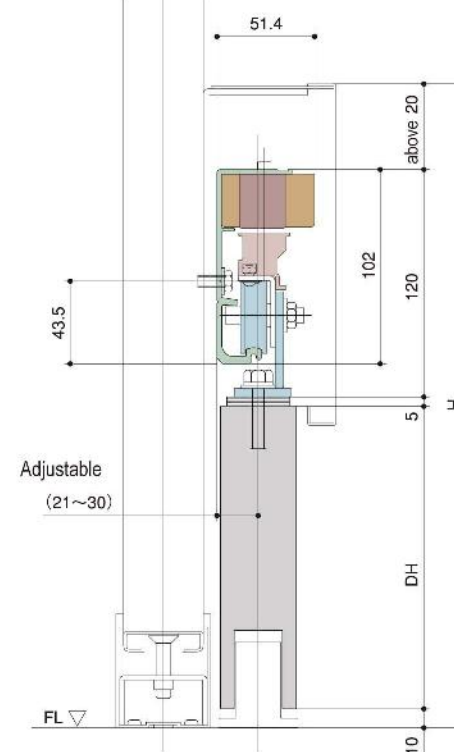
* Weight may vary depending on rail length.

Section

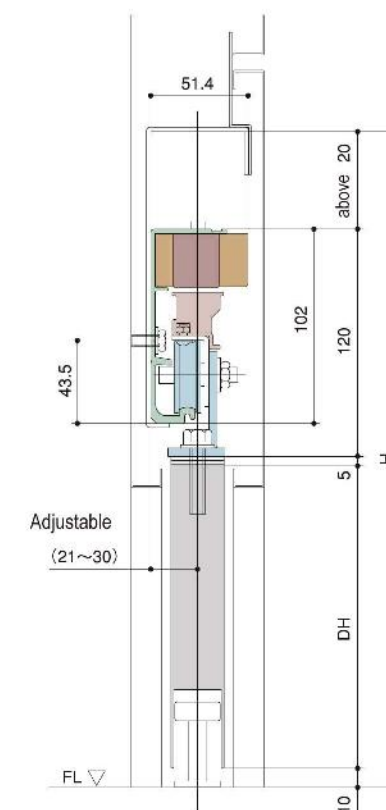


Section

Surface mounting type



Built-in type



MICOM
AUTODOOR

LINEAR ENGINE

MM30



Recommended installation areas



Mansion

Apartment

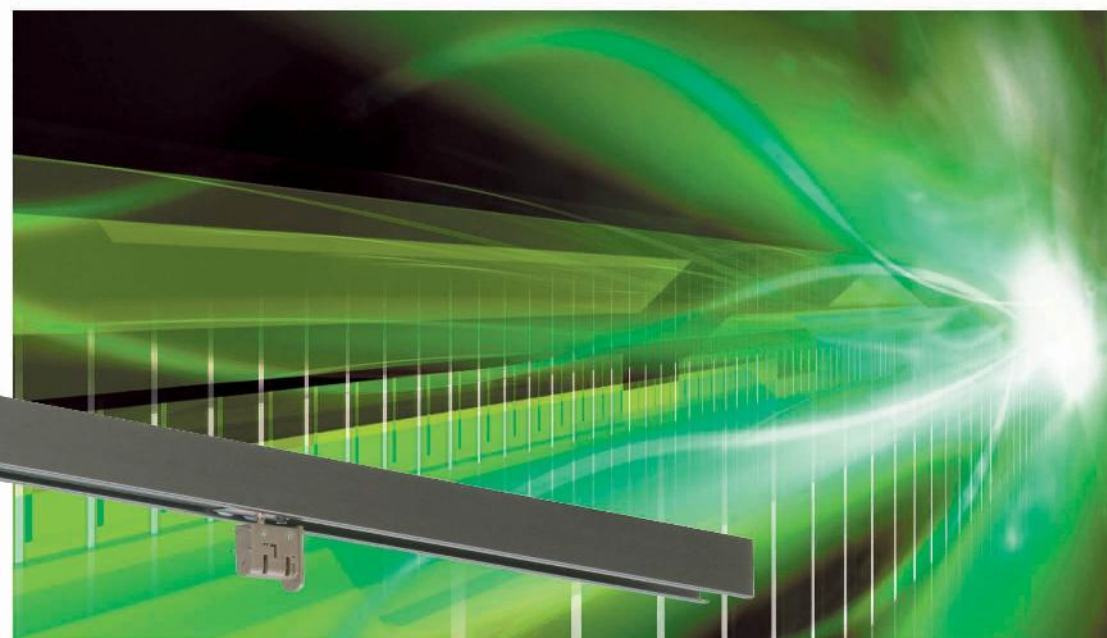
Living room

dining room

Bedroom

Toilet

Living room



Section



Assist function

After moving the door to direction of opening about 2cm, the door will open automatically, and after a certain time it will close automatically.

Highly safe return function

It can return the door immediately to a reverse direction when the door hit the body or obstacles during its opening.

Full open on hold

By pushing the door at its full open status for more than 3 seconds, you will hear a beep and the door will keep at the opening status, and when you want to close then you can pull the door to direction of closing about 2cm, the door will automatically close.

Auxiliary Sensor

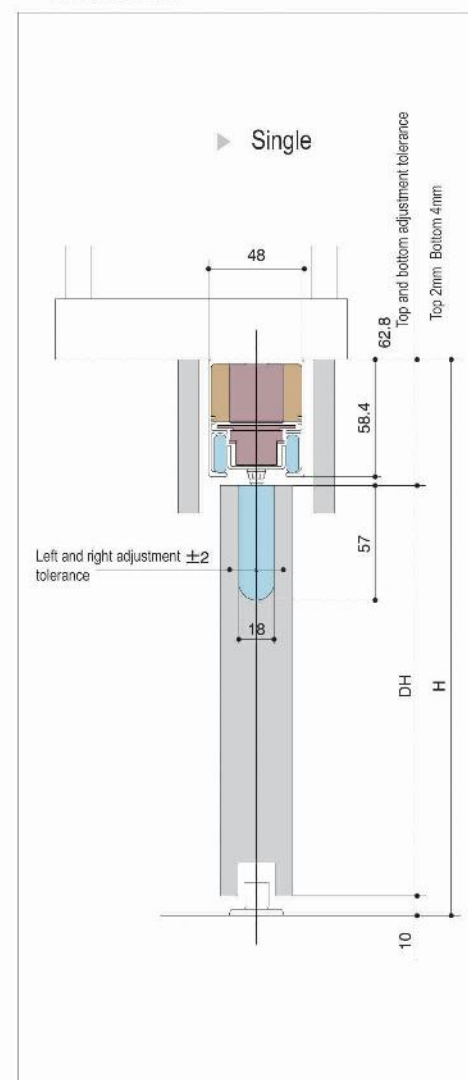
Auxiliary sensors is equipped with built-in controller as standard setting. (hot-wire)

Specifications

Model	MM 30
Required power capacity	AC100V 10% 50/60Hz MAX: 2A
Operating temperature	-10 ~ 40 °C
Power consumption	Average when operating 0.1Wh / Once (Door weight: 30kg / door) Standby 2.8W (When the hold open time is set 1 second and excluding sensor consumption.)
Motor type	Magnet brushless DC linear motor movable type
Thrust generation	When three stators are all fully lapped: 13N
Door weight application	15~ 30kg / door
Door width	> 700mm
Self weight※	About 4kg
Opening speed	0.5m/sec
Closing speed	0.2m/sec
Hold open time	1 or 5seconds (switch)

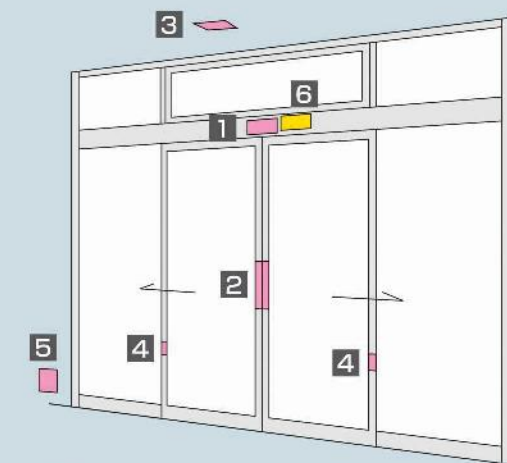
※ Weight may vary depending on rail length.

Section



OPTION

Sensor Switch Electronic Lock



For MM100&MM50



1 Sensors on the top frame of the door



2 Touch switch



3 Ceiling sensors



4 Beam switch



5 Foot switch



6 Electronic lock

* More sensors are available. Please feel free to contact us for more information.

For MM30



Touch switch



Spot sensor