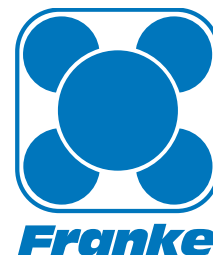


An invention prevails.

Antifriction Bearings
Linear Systems



Modulo a motore lineare FTH Drive

Linear Motor System FTH Drive

HTC
DISTRIBUZIONE PRODOTTI FRANKE



NEW

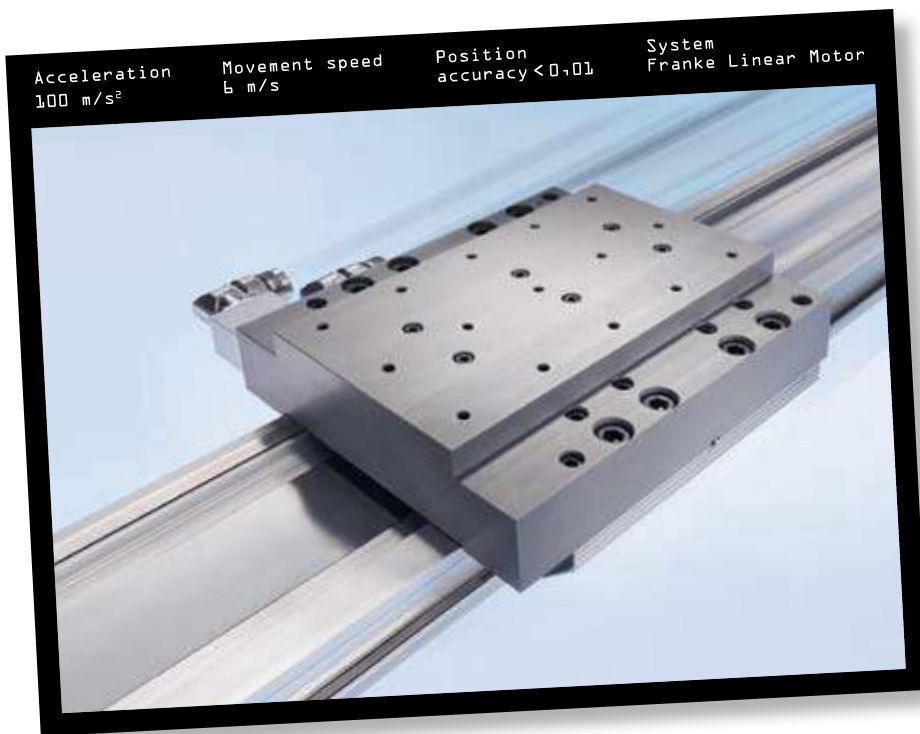
Elevate prestazioni.....peso ridotto.....estrema fluidità nel movimento.....

.....velocità fino a 10m/s.....accelerazioni fino a 100msec².....

.....sistema di misurazione integrato.....corse fino a 3500mm.

High-Speed due to Light Design. The FTH Drive accelerates at 100 m/s².

The new Linear Motor Module FTH Drive is one of the fastest and most flexible movement components currently available on the market. Its lightweight aluminium design ensures a high dynamic and tangible energy saving.



The Advantages:

- Acceleration at up to 100 m/s², speed max. 6 m/s
- Aluminium guide and slide elements
- Compact design
- Easy and quiet running
- Flexible use

The FTH Drive supplements the range of motorised linear modules with a high-dynamic, pre-finished component. The stator magnets are directly integrated in the aluminium profile and the motor is enclosed in an aluminium housing. This gives the module a unique compactness. The direct drive facilitates fast positioning free from clearance.

A clean affair

The Linear Motor Module achieves a movement speed of a maximum 6 m/s and accelerates at up to 100 m/s². The sealed bearing prevents lubricant escaping. Thanks to their compact and integrative design, they are predestined for use in hygiene-sensitive areas – for example in food technology or a clean room.

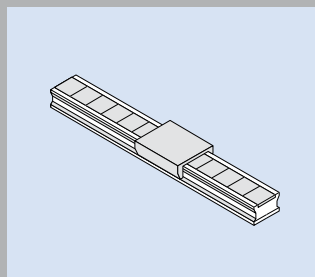
Multi-module and flexible

You have free choice of the drive and control components and Franke will assemble and configure these completely. Linear Motor Systems are available up to a stroke length of 5,300 mm. Like all Franke products, the FTH Drive can also be designed to customers' specifications and individually adjusted to the situation. Multi-module systems can be realised easily.

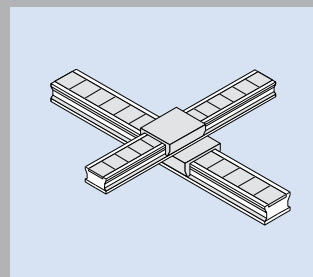
Easy, quiet running

All Franke Linear Modules and Linear Tables use the benefits of Franke Linear Systems to build complete moving units. The integrated Franke Dynamic Aluminium Roller Guide provides high dynamic movements and easy and quiet running.

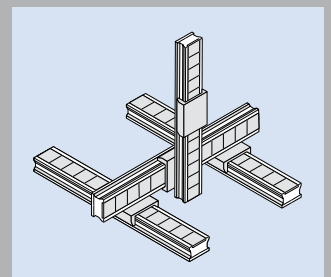
Set-up examples for multi-direction systems



Single module (x direction)

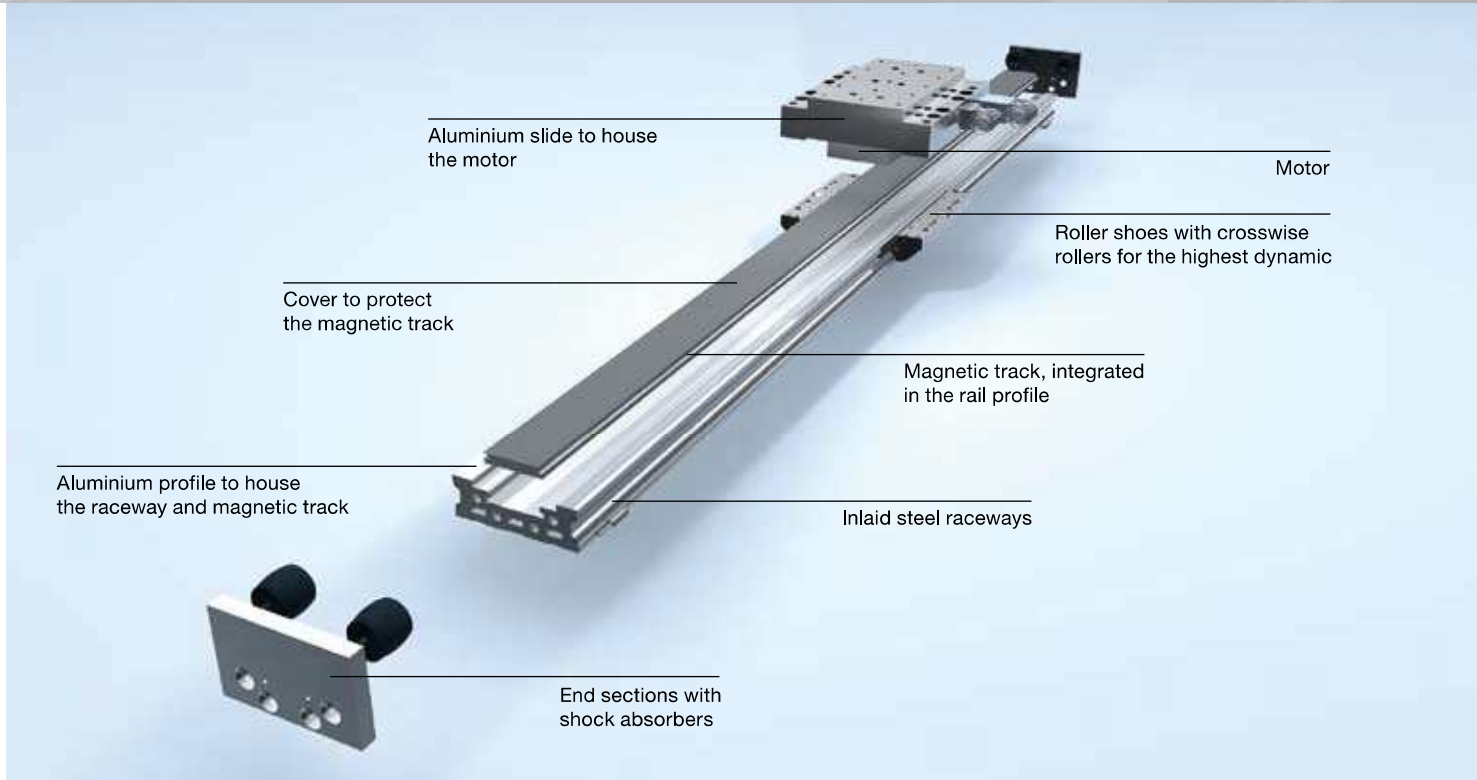


Double modules (x+y direction)



Triple modules (x+y+z direction)

Modular with Proven Components. A System – As Individual As The Customer.



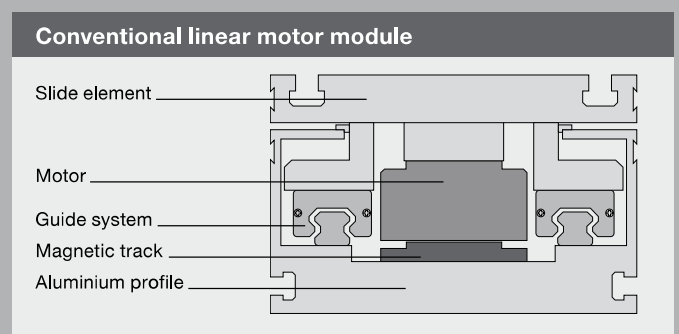
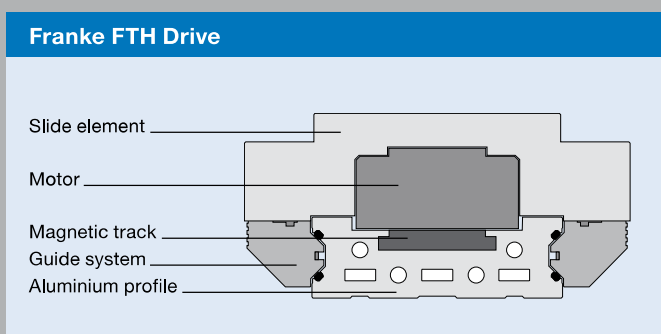
Building on the proven Franke Aluminium Roller Guide, the Linear Motor Module FTH impresses with its low weight and compact dimensions.

The roller shoes have been specially designed for high loads. The rail profile was designed so that the stator could be integrated. This saves height and weight. The modular design of the system enables numerous adjustments according to the individual use.

In addition to customer-specific mating and profile dimensions, several slides can be moved independently of one another per module. Complete multi-module systems using angles and adapter plates is also possible.

We can supply the Linear Motor Module with all wiring and tailored to your desired control mode on request.

The Franke FTH Drive in comparison to conventional products



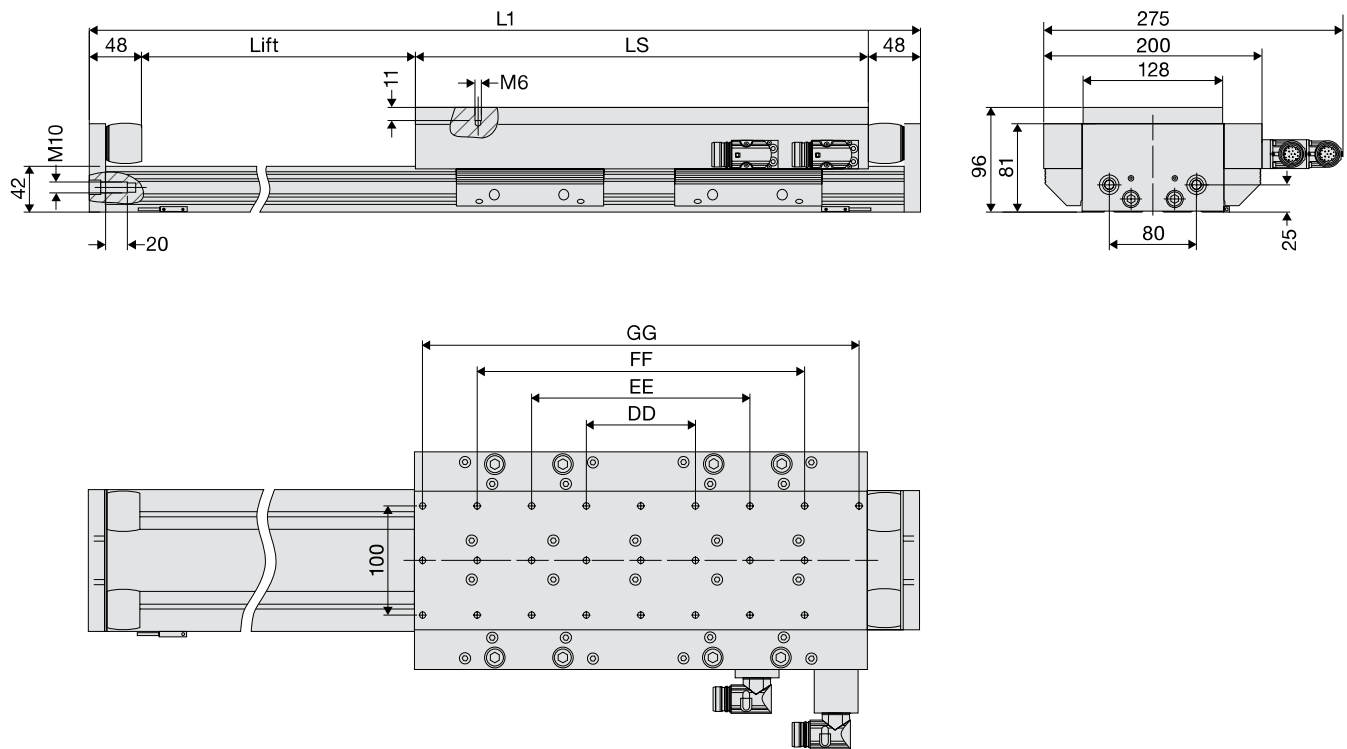
Advantage of the Franke FTH Drive:

- Low space requirement (height)
- Greater closeness of the system (no double-track rail set-up), so simpler to clean and less risk of contamination.
- Reduced components

Linear Motor Modules

Type FTH

FTH35A / FTH35B



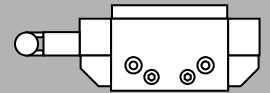
Performance overview / designs

		FTH35A	FTH35B	Optional
Max. speed	m/s	6	6	
Max. acceleration	m/s ²	100	100	
Max. traverse path	mm	5300	5150	
Weight rail	kg/m	10	10	
Weight slide bed	kg	9	16	second slide bed
Power continuous	N	280	560	
Power peak	N	650	1300	
Positioning accuracy*	mm/m	0.02	0.02	
Run accuracy	mm/m	0.04	0.04	
Repeat accuracy (resolution)	mm	0.02	0.02	
Input voltage U _{dc}	V	560	560	
Continuous current I _{nc}	A	2.8	5.7	
Peak current I _{peak}	A	8.0	16.0	
Coil resistance R _{u-v}	Ω	7.4	3.7	
Coil inductance L _{u-v}	mH	55	27	
Width of pole pair	mm	32	32	
Temperature sensor	KTY81 (2,000 Ohm/25 °C)			
Measuring system	1 Vpp (Resolution 1 μm, pitch 1 mm)		absolute measuring system	
End switch	-		2 end positions / 1 reference (PNP-Ö, PNP-S)	
Brakes	-		pneumatic	
Cover	-		bellows	
Cable drag chain	-		plastic / metal	

Special designs (e. g. water cooling, extended slide beds for greater loads, 2 slide beds etc.) on request.

Materials

	Body material	Balls	Wipers	Cable
Standard	High-strength, anodized aluminium, steel raceways	Antifriction bearing steel 100Cr6	Plastic plate with felt wiper	
Special	Corrosion-resistant raceways	Corrosion-resistant rollers		Servoflex, drag chain-suitable up to 100 m/s ² , highly flexible

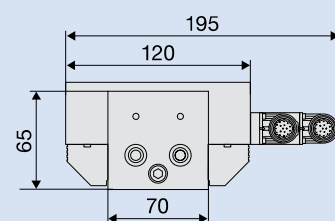
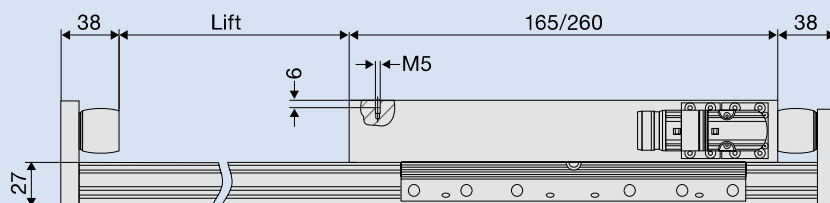


Dimensions

Stroke	Load ratings N		Torque Nm				Dimensions mm				Order no.		
	C	Co	Mcx	Mcy, Mcz	Mox	Moy, Moz	L1	LS	DD	EE		FF	GG
FTH35A													
200	29900	34500	1100	1000	1250	1150	544	240	100	200	-	-	92870A
450	29900	34500	1100	1000	1250	1150	800	240	100	200	-	-	92871A
700	29900	34500	1100	1000	1250	1150	1056	240	100	200	-	-	92872A
950	29900	34500	1100	1000	1250	1150	1312	240	100	200	-	-	92873A
1200	29900	34500	1100	1000	1250	1150	1568	240	100	200	-	-	92874A
1450	29900	34500	1100	1000	1250	1150	1824	240	100	200	-	-	92875A
1700	29900	34500	1100	1000	1250	1150	2080	240	100	200	-	-	92876A
2000	29900	34500	1100	1000	1250	1150	2336	240	100	200	-	-	92877A
2250	29900	34500	1100	1000	1250	1150	2592	240	100	200	-	-	92878A
2500	29900	34500	1100	1000	1250	1150	2848	240	100	200	-	-	92879A
2750	29900	34500	1100	1000	1250	1150	3104	240	100	200	-	-	92880A
3000	29900	34500	1100	1000	1250	1150	3360	240	100	200	-	-	92881A
3250	29900	34500	1100	1000	1250	1150	3616	240	100	200	-	-	92882A
3500	29900	34500	1100	1000	1250	1150	3872	240	100	200	-	-	92883A
FTH35B													
250	29900	34500	2150	3000	2500	3450	800	415	100	200	300	400	92884A
500	29900	34500	2150	3000	2500	3450	1056	415	100	200	300	400	92885A
800	29900	34500	2150	3000	2500	3450	1312	415	100	200	300	400	92886A
1050	29900	34500	2150	3000	2500	3450	1568	415	100	200	300	400	92887A
1300	29900	34500	2150	3000	2500	3450	1824	415	100	200	300	400	92888A
1550	29900	34500	2150	3000	2500	3450	2080	415	100	200	300	400	92889A
1800	29900	34500	2150	3000	2500	3450	2336	415	100	200	300	400	92890A
2000	29900	34500	2150	3000	2500	3450	2592	415	100	200	300	400	92891A
2300	29900	34500	2150	3000	2500	3450	2848	415	100	200	300	400	92892A
2550	29900	34500	2150	3000	2500	3450	3104	415	100	200	300	400	92893A
2800	29900	34500	2150	3000	2500	3450	3360	415	100	200	300	400	92894A
3100	29900	34500	2150	3000	2500	3450	3616	415	100	200	300	400	92895A
3350	29900	34500	2150	3000	2500	3450	3872	415	100	200	300	400	92896A

FTH35B is also available as a heavy duty version with double load rating.

In preparation: Linear Motor Module FTH Drive, size 25



The FTH25 range is in development and will be added to the product range shortly. Our team of advisors is happy to give you more information on the status of development.

1 Design

Franke Linear Motor Modules FTH Drive are suitable for example for automation tasks in measuring and testing processes or for rationalization in the handling and fitting sector. The selection ranges from strokes from 200 mm to 5,300 mm, drive is effected via an integrated linear motor. The light aluminum construction combined with the integrated Franke guide system allows high load ratings and torque loads. Precise technical details are on the relevant pages in the catalogue.

2 Area of Use

We recommend use of Franke Linear Motor Modules FTH Drive with safety $S \geq 3$ for simple loads or acceleration and moment loads. A safety of $S \geq 6$ should be used for dynamic torques. You can choose any installation position. We recommend a bedstop or a brake for vertical operation.

Franke Linear Motor Modules FTH Drive can be used in a temperature range of $-20\text{ }^{\circ}\text{C}$ to $+80\text{ }^{\circ}\text{C}$. Please speak to us about use in other temperature ranges.

3 Accuracy

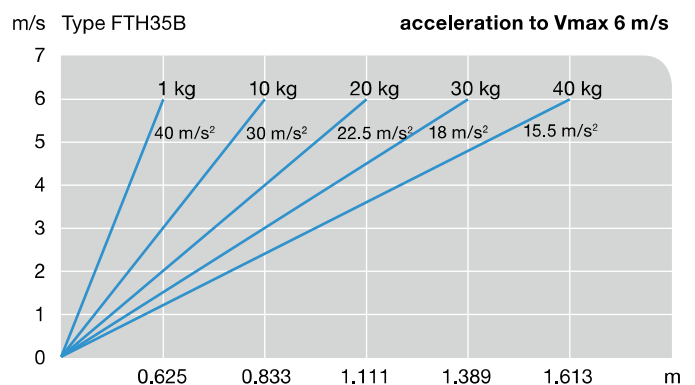
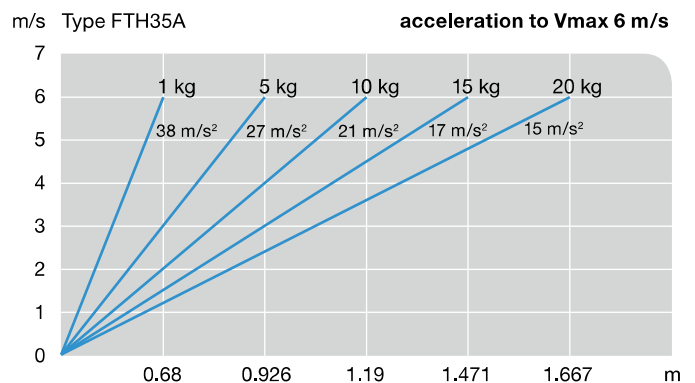
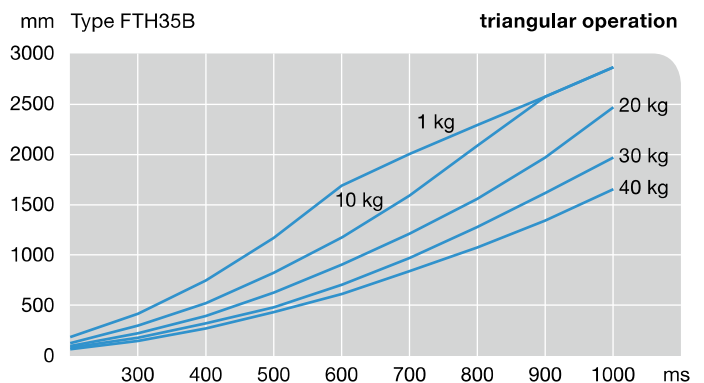
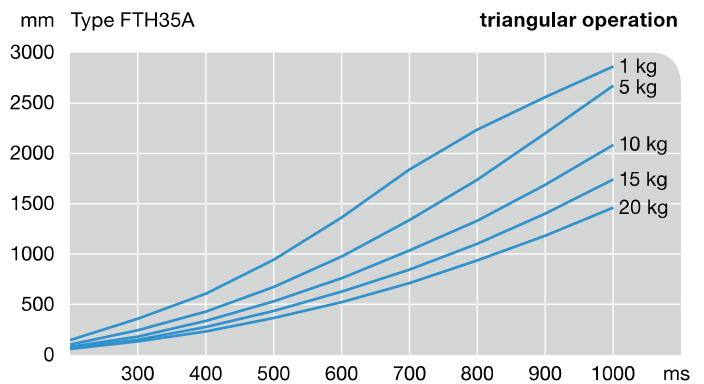
The positioning accuracy of the Linear Motor Modules FTH Drive is $\pm 0.01\text{ mm/m}$ and depends on the measuring system used. Other accuracies and measuring systems are possible on request. The repeat accuracy is $\leq 0.02\text{ mm}$. The guide system is based on the Franke Dynamic Aluminum Roller Guide with a running accuracy of 0.04 mm/m .

4 Dynamic

The positioning times given in the diagrams can be realized with Franke Linear Motor Modules FTH Drive. These are guide values that relate to the horizontal feed motion in the trapeze and triangle positioning.

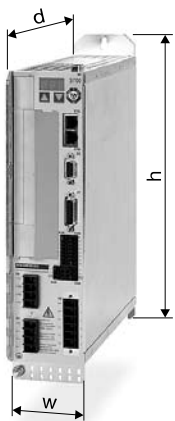
We are happy to design the perfect linear motor for you for specific applications with prespecified movement profile.

The adjacent diagrams show details of the maximum movement speed and acceleration under consideration of the different load situations.



5 Motorisierung

The Linear Motor Modules FTH Drive are powered by linear servomotors. The linear movement is executed without mechanical drive components, e.g. gears, spindles or toothed belt. A long service life with no loss of accuracy is guaranteed even with high dynamic movements and cycle times. The linear motor consists of a slide element and guide element. The slide element houses the coils, the position acquisition and temperature monitoring. The drive magnets are located in the guide element. The linear motors used are characterized by extremely high power density (highest dynamic with smallest size), thus, facilitating acceleration up to 100 m/s² and movement speeds up to 6 m/s.



Dimensions		
mm		
h (incl. ventilator)	w	d (incl. connector)
345	70	243

6 Control

We recommend the S700 amplifier from Kollmorgen to power the Linear Motor Modules FTH Drive. The S700 amplifier meets the high safety requirements, the user's desire for flexible integration ability and a reduction in the processing times in production. The varied communication ability, simple operator guidance and solution concepts for machine safety contribute to this. Optimized control behavior leads to high performance and dynamic.

The S700 is the right choice for diverse automation environments, e.g. in semiconductor production, the packing industry, in medical technology and in plastic and wood processing.

The S700 offers many special features, e.g. the free graphic Windows® software to operate the amplifier. The Auto-Tuning function also simplifies operation. A Safe Torque Off is included as standard.

The S700 can memorize many different return systems and can evaluate up to three lots of position information in parallel. This feature means high flexibility for incorporation in different applications.

You can find more information about the Kollmorgen S700 on the manufacturer's homepage at www.kollmorgen.com or from our team of advisors.

7 Measuring System and End and Reference Switches

Franke Linear Motor Modules are equipped with an integrated, magnetic length measuring system as standard. The positioning accuracy is $\pm 10 \mu\text{m}$ with a resolution of $\pm 1 \mu\text{m}$. Absolute measuring systems can also be fitted.





Inductive proximity switches are available to record end or reference positions, which can be freely positioned in the guide profile.

8 Multi-Module Units

Linear Motor Modules of type FTH Drive can be combined into multi-module units. The necessary angles and adaptor plates are selected according to your needs. We supply completely fitted units, ready cabled and aligned, with other accessories on request.

Please follow assembly and maintenance instructions. They are included with every delivery.

Everything at a Glance: Franke Linear Systems with Drive

Type				 NEW
	Linear Tables type FTB with spindle drive	Linear Modules type FTC with spindle or belt drive	Linear Modules type FTD with belt drive	Linear Modules type FTH with linear motor
Components	<ul style="list-style-type: none"> Aluminium body on guide rails and profiles Inlaid steel raceways with ground raceway surface, adapted to the rollers (principle: guided roller) Sealed, needle roller bearings, arranged crosswise for easy and clean running and for loads from all directions Spindle drive Metal cover 	<ul style="list-style-type: none"> Spindle drive Guide rail on outside 	<ul style="list-style-type: none"> Belt drive Metal cover Guide rail integrated 	<ul style="list-style-type: none"> Direct drive using linear motor Stator integrated in the rail
Options	<ul style="list-style-type: none"> Complete multi-module systems using assembly brackets and adapter plates Measuring systems, additional end switches, cable drag chain, motorisation and control Special dimensions and designs for series production Non-corrosive design Double slide length Different spindle pitch Motorisation of choice 	<ul style="list-style-type: none"> Non-corrosive design Spindle or belt drive Spacer shafts Motorisation of choice 	<ul style="list-style-type: none"> Non-corrosive design Second slide Intermediate drive shafts Motorisation of choice 	<ul style="list-style-type: none"> Non-corrosive design 2 motor variants Second slide Water cooling
Advantages	<ul style="list-style-type: none"> Integrated Aluminium Roller Guide for low weight, easy running and dynamic courses of movement Modular system for simple combination of several modules Maintenance-free for the whole service life due to sealed rollers Metal cover for harsh environment (e. g. welding) High stiffness and precision 	<ul style="list-style-type: none"> Compact dimensions Numerous accessories for fitting and fixing 2 drive variants 	<ul style="list-style-type: none"> Compact dimensions High speeds Stroke lengths up to 7,000 mm 	<ul style="list-style-type: none"> Highest dynamic Wear-free drive Precise, play-free positioning Compact dimensions Stroke lengths up to 5,300 mm
Position accuracy (mm/m)	<ul style="list-style-type: none"> Up to 0.01 	<ul style="list-style-type: none"> Up to 0.01 (spindle drive) Up to 0.05 (belt drive) 	<ul style="list-style-type: none"> Up to 0.05 	<ul style="list-style-type: none"> Up to 0.01 or better (depending on measuring system)
Build sizes (mm) Standard	FTB06A with C = 15,000 N FTB06B with C = 30,000 N	FTC15 with C = 4,200 N FTC20 with C = 5,400 N FTC25 with C = 13,500 N	FTD15 with C = 4,200 N FTD20 with C = 5,400 N FTD35 with C = 12,500 N	FTH35A with C = 29,900 N FTH35B with C = 29,900 N (optional C = 59,800 N)
Travelling speed Max. speed (m/s) Acceleration (m/s ²)	0.2 10	0.2 (spindle) 10 (toothed belt) 10 (spindle) 40 (toothed belt)	10 40	6 100
Stroke length (mm) one-piece	1,500	1,100 (spindle drive) 3,400 (belt drive)	7,000	5,800

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