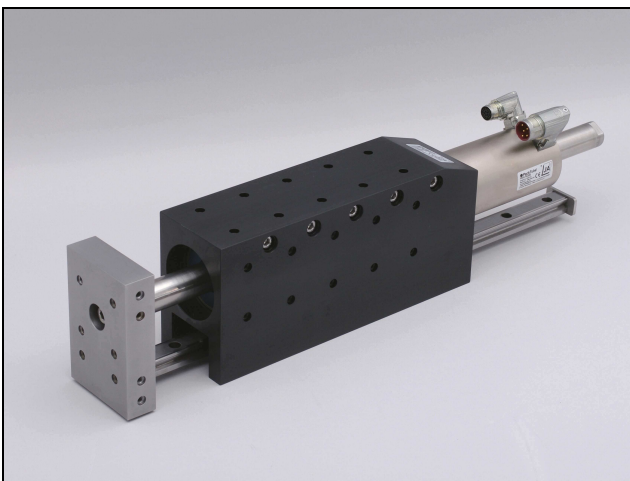


FourDynamic[®] Linear Modules FM10 with Tubular Linear Servo Drives

FourDynamic[®] linear modules are based on **PackTube[®]** direct drives. The linear guide is equipped with ball carriages and the guide rail itself serves as a carrying element. This ensures high torsional stiffness, despite the low moving masses. Ball chains in the ball cages are responsible for a high maximum speed, high accelerations, a low noise level, as well as a long operational life.

The linear modules are all mechanically compatible with each other, making it easy to combine them into multi-axis systems.



Characteristics

- linear module system with **PackTube[®]** linear servo drives
- very low moving masses, high bending & torsional stiffness
- speed up to 5 m/s and acceleration up to 150 m/s²
- guide with precision profile rail, two ball carriages with ball chain
- positioning accuracy +/- 0,05 mm (+/- 0,001 mm optionally)
- modular mechanical interface points
- many accessories and options

Limits **FourDynamic[®]** FM10 Linear Modules

Type	FM10-70
max. velocity [m/s] ¹⁾	5,0
max. acceleration [m/s ²] ¹⁾	150
max peak force [N] ²⁾	2.700
max. cont. force [N] with nat. cooling ³⁾	312
max. cont. force [N] with fan cooling ³⁾	479

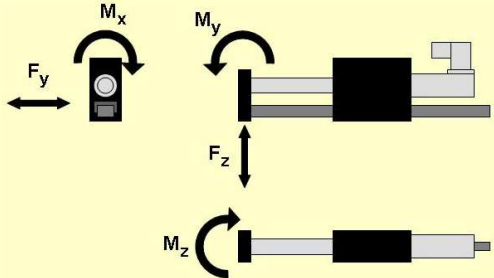
¹⁾ The indicated values are referring to the mechanical operating limits of the guiding system.

²⁾ The indicated values depend on the motor type, the controller and the DC bus.

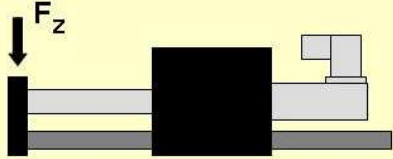
³⁾ The indications are reference values and depend on the used motor type.

Please feel free to contact us for an optimal kinematic design.

Forces & Torques FourDynamic® Linear Modules

Type	FM10-70x80	FM10-70x240	FM10-70x400
F_y (depending on stroke but not less than) [N]	3.000	3.000	3.000
F_z (depending on stroke but not less than) [N]	3.500	3.500	3.500
M_x [Nm]	660	660	660
M_y [Nm]	1.420	1.420	1.420
M_z [Nm]	884	884	884
milage [km]	> 90.000	> 90.000	> 90.000
Displayed performance applies at maintenance intervalls every 5.000 km or every 6 months! Lubrication: - THK grease AFA for general applications - Klübersynth UH1 14-151 for FDA applications			

Bending Stiffness FourDynamic® Linear Modules

stroke [mm]	100	200	300
bending [mm]	FM10-70		
$F_z = 50$ N	0,01	0,06	0,19
$F_z = 100$ N	0,01	0,11	0,38
$F_z = 200$ N	0,03	0,23	0,77
			

Dimensions **FourDynamic®** FM10 Linear Modules

FM10-70x80 Coming soon!	FM10-70x160 Coming soon!
FM10-70x240 Coming soon!	FM10-70x320 Coming soon!
FM10-70x400 Coming soon!	

FM10-70 main dimenations	L1 [mm]	B2 [mm]	H2 [mm]	T [mm]	B1 [mm]	H1 [mm]	F [mm]	H ¹⁾ [mm]	¹⁾ Angle connector turnable by 360°.
FM10-70x80									
FM10-70x160									
FM10-70x240									
FM10-70x320									
FM10-70x400									

STEP data on
demand!

Available Variations FourDynamic® FM10 Linear Modules

Attention: The FM10 linear modules consist of a FD10 linear guide plus linear motor.

Example: FM10-70xZZZ/YYY = FD10-70xZZZ/YYY + suitable  PackTube® motor

FD10 FourDynamic® linear guide	stroke YYY [mm]	suitable  PackTube® linear motor	slider length [mm]	moving mass without motor (slider) [gramm]	weight FM10 incl. motor [gramm]	L [mm]
FD10-70x80/70	70	PT10-70x80/70	290			
FD10-70x80/170	170	PT10-70x80/170	390			
FD10-70x80/270	270	PT10-70x80/270	490			
FD10-70x160/90	90	PT10-70x160/90	390	3.545		
FD10-70x160/190	190	PT10-70x160/190	490	3.815		
FD10-70x160/290	290	PT10-70x160/290	590	4.085		
FD10-70x240/10	10	PT10-70x240/10	390	3.545		
FD10-70x240/110	110	PT10-70x240/110	490	3.815		
FD10-70x240/210	210	PT10-70x240/210	590	4.085		
FD10-70x240/310	310	PT10-70x240/310	690	4.355		
FD10-70x320/30	30	PT10-70x320/30	490	3.815	18.860	
FD10-70x320/130	130	PT10-70x320/130	590	4.085	19.600	
FD10-70x320/230	230	PT10-70x320/230	690	4.355	20.340	
FD10-70x320/330	330	PT10-70x320/330	790	4.625	21.080	
FD10-70x400/50	50	PT10-70x400/50	590	4.085		
FD10-70x400/150	150	PT10-70x400/150	690	4.355		
FD10-70x400/250	250	PT10-70x400/250	790	4.625		
FD10-70x400/350	350	PT10-70x400/350	890	4.895		

Accessories

- external measurement system for positioning repeatability +/- 1 µm
- external cooling fan optionally
- liquid cooling optionally
- pneumatic brake for vertical axes

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Technical changes reserved!