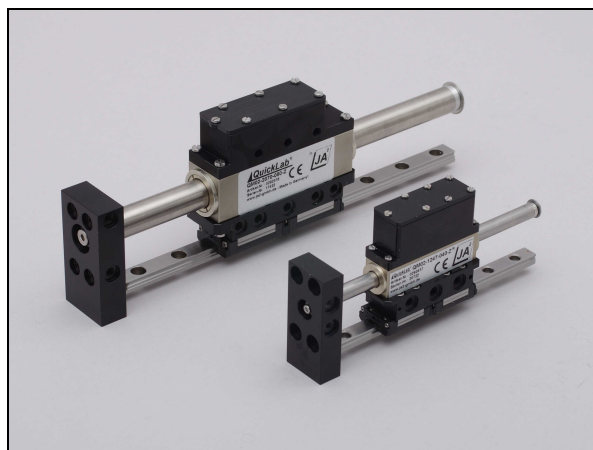




Miniature Linear Modules QM02 with tubular Linear Servo Drives

The **QuickLab**® series is a modular kit system, which can be used in applications under IP20 protection conditions. With a basic width of only 18 mm and 22 mm, it covers the need for miniaturized 1-axis and multi-axis handling systems. Typical applications can be found in laboratory automation, the pharmaceutical industry, testing technology and optics. The linear modules QM02 are based on precision linear guides equipped with two ball bearing carriages. The guide rail itself serves as the carrier element. This provides high torsional rigidity despite the low moving mass. Ball chains in the ball circulation are responsible for a high top speed, a high acceleration, low noise and a long service life. Tubular ironless linear motors are built into the linear modules. They have single-cable technology with an optimized, compact and direct connection technology. Motor cables for cable chains are available up to a length of 30 m.



QuickLab® Linear Modules QM02

- ready-to-use linear modules with integrated **QUICKSHAFT**® linear servo drives
- miniaturized precise linear guides with two ball bearing carriages
- very low moving mass
- speed up to 3 m/s & acceleration up to 50 m/s²
- typical payloads up to 2 kg
- positioning accuracy +/- 50 µm
- protection level IP20
- modular mechanical interface

Overview **QuickLab**® Linear Modules QM02-1247 & QM02-2070

Modul Type	QM02-1247	QM02-2070
Technical Data		
peak force [N]	10,5	27,6
cont. force [N]	3,6	9,2
nominal stroke up to [mm]	120	160
max. speed [m/s]	3	
max. acceleration [m/s ²]	up to 50 (dep. on moving mass)	
operating temperature [°C]	-20 bis +125	
protection level	IP20	

Technical Data **Linear Modules QM02-1247**

Modul Type	QM02-1247-020	QM02-1247-040	QM02-1247-080	QM02-1247-120
Technical Data				
type of motor	LM1247-020	LM1247-040	LM1247-080	LM1247-120
peak force / cont. force [N]	10,5 / 3,6			
nominal stroke [mm]	20	40	80	120
max. mechanical stroke [mm]	32,6	59,6	104,6	140,6
dimension A ¹⁾ [mm]	6,3	9,8	12,3	10,3
moving mass without / with slider [g]	48 / 67	55 / 80	66 / 102	75 / 119
max. speed [m/s]	3			
max. acceleration [m/s²]	up to 50 (dep. on moving mass)			
dimensions W x H [mm]	18 x 56 / with stand 30 x 57 (B = 20 incl. front plate)			
total length [mm]	95	122	167	206
total mass [g]	154	167	188	206

¹⁾ Dimension A ref. to QuickShaft[®] datasheet

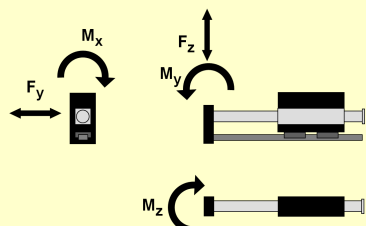
Technical Data **Linear Modules QM02-2070**

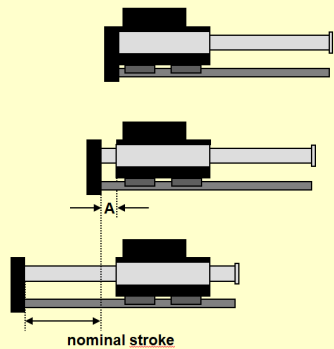
Modul Type	QM02-2070-040	QM02-2070-080	QM02-2070-120	QM02-2070-160
Technical Data				
type of motor	LM2070-040	LM2070-080	LM2070-120	LM2070-160
peak force / cont. force [N]	27,6 / 9,2			
nominal stroke [mm]	40	80	120	160
max. mechanical stroke [mm]	60	108	144	180
dimension A ¹⁾ [mm]	10	14	12	10
moving mass without / with slider [g]	79 / 189	95 / 245	106 / 286	118 / 328
max. speed [m/s]	3			
max. acceleration [m/s²]	up to 50 (dep. on moving mass)			
dimensions W x H [mm]	22 x 66 / with stand 33 x 67 (B = 25 incl. front plate)			
total length [mm]	153	199	235	272
total mass [g]	445	497	540	582

¹⁾ Dimension A ref. to QuickShaft[®] datasheet

STEP files on demand!

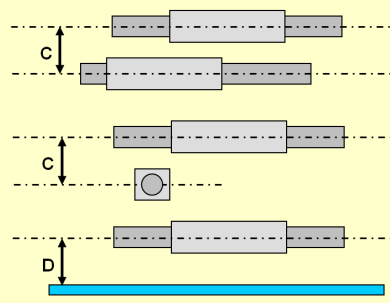
Technical Data Linear Modules QM02

Modul Type	QM02-1247	QM02-2070
Technical Data		
F_y [N] / F_z [N]	60 / 60	110 / 110
M_x [Nm] / M_y [Nm] / M_z [Nm]	9 / 15 / 15	22 / 44 / 51
milage [km]	> 50.000	
	Displayed performance applies at maintenance intervals every 5.000 km or every 6 months!	
	Lubrication: THK-grease AFB for general applications Klübersynth UH1 14-151 for FDA applications	

Modul Type	QM02
Stroke Range	
	homing on negative mechanical stop
	position 0 mm dimension A
	position at maximal stroke nominal stroke

Minimal Mounting Distances

Modul Type	QM02-1247	QM02-2070
minimal mounting distances		
motor to motor in parallel configuration	25	35
motor to motor in 90° configuration C [mm]	17	30
motor to ferromagnetic material D [mm]	18	20
motor to conductive material D [mm]	6,3	10
motor to non conductive material D [mm]	3,2	6



Elektrical Data & Connectors **Linear Modules QM02**

Modul Type	QM02-1247	QM02-2070
Technical Data		
type of motor	LM1247-XXX-01	LM2070-XXX-01
peak force [N]	10,5	27,6
cont. force [N]	3,6	9,2
force constant [N/A]	6,43	11,64
peak current [A]	1,64	2,4
resistance phase - phase [Ω]	13,1	10,8
positioning sensor	hall sensors analog, 0 - 5 V, A, B, C	
position resolution [mm] ¹⁾	0,005	
position repeatability [mm]	± 0,05	
linearity [mm]	± 0,2 to ± 0,5 dep. of nominal stroke	
connector	connector option „Z“ direct plug in connector with chain cable	
diameter motor cable [mm]	9,5	
min. bending radius [mm]	60	
max. length of motor cable [m]	30	

¹⁾ LinMot® positioning controller

Options & Positioning Controllers**Options**

- stand AD52 inkl. mounting
- MagSpring® adapter AD53 & AD54
inkl. mounting only QM02-2070
- magnetic parking brake AD55
- external sensor AD56
inkl. mounting only QM02-2070
- FDA grease AD60

Positioning Controllers

Brand		
LinMot®	FAULHABER®	TECHNOSOFT®

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