

Linear DC-Servomotors

9,2 N

with Analog Hall Sensors

LM 2070 ... 11

Values at 22°C		LM 2070 ... 11	
Continuous force	$F_{e \max.}$	9,2	N
Peak force	$F_{p \max.}$	27,6	N
Continuous current	$I_{e \max.}$	0,79	A
Peak current	$I_{p \max.}$	2,4	A
Back-EMF constant	k_E	9,5	V/m/s
Force constant	k_F	11,64	N/A
Terminal resistance, phase-phase	R	10,83	Ω
Terminal inductance, phase-phase	L	1 125	μH
Thermal resistance	R_{th1} / R_{th2}	3,1 / 9,3	K/W
Thermal time constant	τ_{w1} / τ_{w2}	30 / 1 200	s
Operating temperature range		-20 ... +125	°C
Magnetic pitch	τ_m	24	mm
Rod bearings		polymer sleeves	
Housing material		metal, non-magnetic	
Direction of movement		electronically reversible	

	LM 2070-	040-11	080-11	120-11	160-11	220-11	
Stroke length	$S_{\max.}$	40	80	120	160	220	mm
Repeatability	σ_r	60	60	60	60	80	μm
Accuracy	σ_a	200	300	400	500	600	μm
Acceleration	$a_{e \max.}$	83,7	61,3	51,1	43,8	35,4	m/s ²
Speed	$v_{e \max.}$	1,8	2,2	2,6	2,6	2,8	m/s
Rod length	$L1$	134	182	218	254	314	mm
Rod mass	m_m	110	150	180	210	260	g
Total mass	m_t	248	288	318	348	398	g

Note: These motors are for operation with DC-voltage < 75 V DC. The given values are for free standing motors.
Other rod lengths available on request.

Motor characteristic curves

Trapezoidal motion profile ($t_1 = t_2 = t_3$)

Displacement distance: 40 mm
Friction coefficient: 0,2
Slope angle: 0°
Rest time: 0,1 s

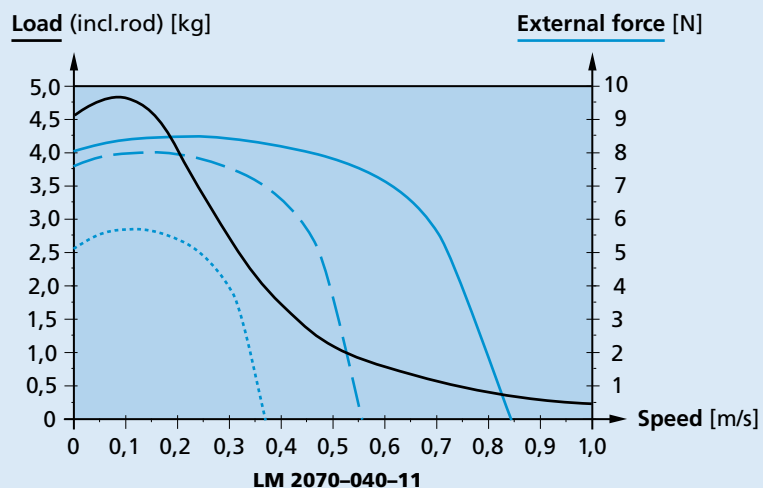
Load:

The max. applicable load (incl. rod) at a given speed with an external force of 0 N

External force:

The max. permissible external force at a given speed with a load (incl. rod) of:

- 0,5 kg —————
- 1,0 kg - - - - -
- 2,0 kg



Technical drawing of the LM 2070 ... 11 linear motor assembly, showing dimensions and components.

Dimensions:

- Overall length: 250 ± 15
- Central section length: $70_{-0,05}^0$
- End section length: 2
- Central section diameter: $\varnothing 19,9$
- End section diameter: $\varnothing 12$
- Front view width: $20_{-0,05}^0$
- Front view height: $27,4$
- Top view width: 10
- Top view height: 1
- Top view depth: $7,4$

Components and Notes:

- 4x M2,5 3 deep, non-magnetic screws recommended
- M4 8 deep
- Scale reduced

Model Name: LM 2070 ... 11

Option, cable and connection information							
Example product designation: LM2070-040-11							
Option	Type	Description	Connection				
			-11/-11C	-01			
-11C		Material PVC, 10 conductors, AWG 28 with connector A05a - TCO, pitch 2 mm	No.	Function	No.	Function	Color
			1	Phase C	1	Phase C	yellow
			2	Phase B	2	Hall sensor A	green
			3	Phase A	3	U _{DD} (+5V)	red
			4	GND	4	GND	black
			5	U _{DD} (+5V)	5	Hall sensor B	blue
			6	Hall sensor C	6	Hall sensor C	grey
			7	Hall sensor B	7	Phase B	orange
-01	Single wires	Material PVC, 10 conductors, AWG 28. Recommended connector: Molex - Nr. 51110-1060	8	Hall sensor A	8	Phase A	brown
			9	N.C.	9	N.C.	white
			10	N.C.	10	N.C.	purple
			Standard cable				
			Material PVC, 10 conductors, AWG 28, grid 1mm, wires tinned.				

Product combination			
Drive Electronics MCLM 3003 P MCLM 3006 S MC 5004 P MC 5004 P STO MC 5005 S	Cables / Accessories To view our large range of accessory parts, please refer to the "Accessories" chapter.		