

NEW

Linear DC-Servomotors

with Analog Hall Sensors
QUICKSHAFT® Technology

9,2 N

For combination with
Motion Controllers:
MCLM 3003/06 S, MCLM 3003/06 C

Series LM 2070 ... 01

	LM 2070-	040-01	120-01	
1 Continuous force ¹⁾	F _e max.	9,2		N
2 Peak force ^{1) 2)}	F _p max.	27,6		N
3 Continuous current ¹⁾	I _e max.	0,79		A
4 Peak current ^{1) 2)}	I _p max.	2,37		A
5 Back-EMF constant	k _E	9,5		V/m/s
6 Force constant ³⁾	k _F	11,64		N/A
7 Terminal resistance, phase-phase	R	10,83		Ω
8 Terminal inductance, phase-phase	L	1 125		μH
9 Stroke length	s _{max.}	40	120	mm
10 Repeatability ⁴⁾		60	60	μm
11 Precision ⁴⁾		200	400	μm
12 Acceleration ⁵⁾	a _e max.	93,9	54,8	m/s ²
13 Speed ^{5) 6)}	v _e max.	1,9	2,6	m/s
14 Thermal resistance	R _{th 1} / R _{th 2}	3,1 / 9,3		K/W
15 Thermal time constant	τ _{w1} / τ _{w2}	30 / 1 200		s
16 Operating temperature range		- 20 ... +125		°C
17 Rod weight ⁷⁾	m _m	98	168	g
18 Total weight ⁷⁾	m _t	236	306	g
19 Magnetic pitch	τ _m	24	24	mm
20 Rod bearings		polymer sleeves		
21 Housing material		metal, non-magnetic		
22 Direction of movement		electronically reversible		

¹⁾ thermal resistance R_{th 2} by 55% reduced

²⁾ for max. 1 second with a duty cycle of 20%

³⁾ with sine wave commutation

⁴⁾ typical values with integrated linear Hall sensors and Motion Controller MCLM 3003/06 S/C.

The values depend on conditions of use

⁵⁾ theoretical value, referring only to the motor

⁶⁾ with a triangular speed profile and the max. stroke

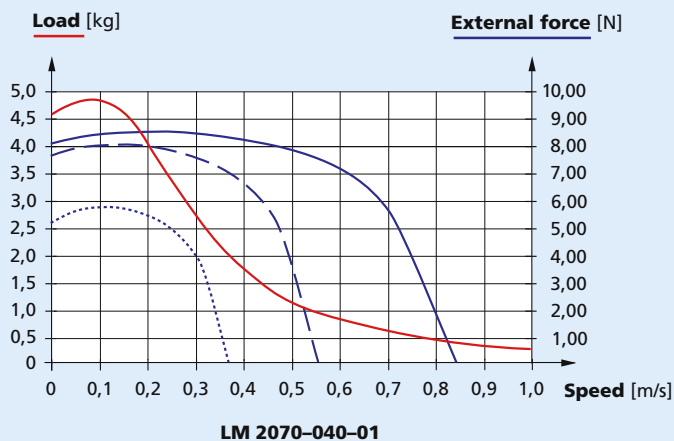
⁷⁾ rounded value, for reference only

Notes: These motors are for operation with DC-voltage < 75 V DC.

The given values are for free standing motors.

The mounting with magnetic conductive metal can influence the characteristics of the motor.

Caution: Presence of strong magnetic fields. Static sensitive device.



Trapezoidal motion profile (t₁ = t₂ = t₃)

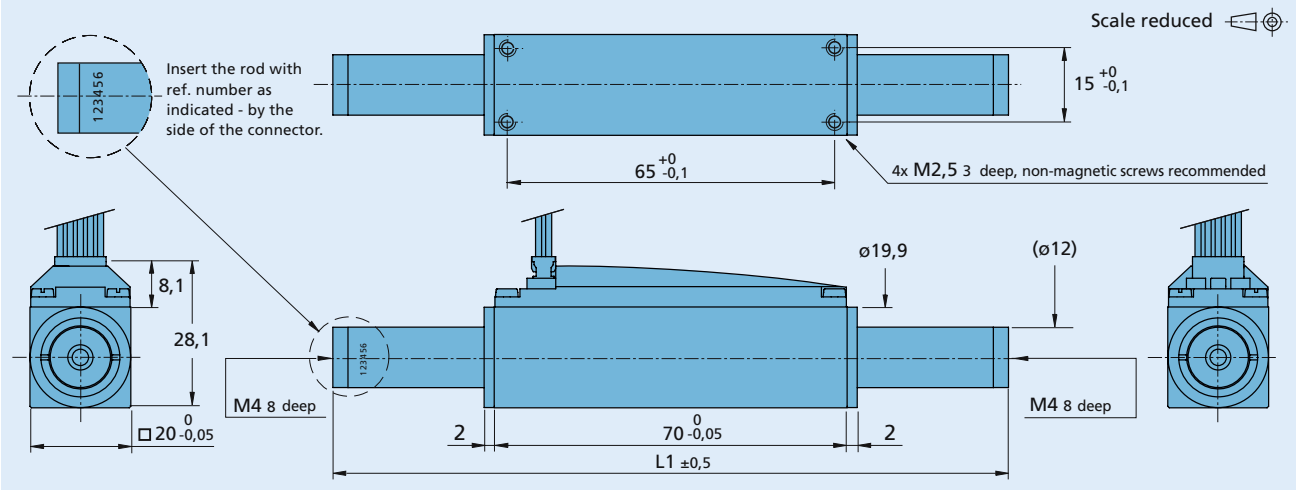
Displacement distance:	40 mm
Friction coefficient:	0,2
Slope angle:	0°
Rest time:	0,1 s

Load: The max. permissible load 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 of:

- 0,5 Kg ———
- 1,0 Kg - - - - -
- 2,0 Kg · · · · ·

Linear DC-Servomotor LM 2070



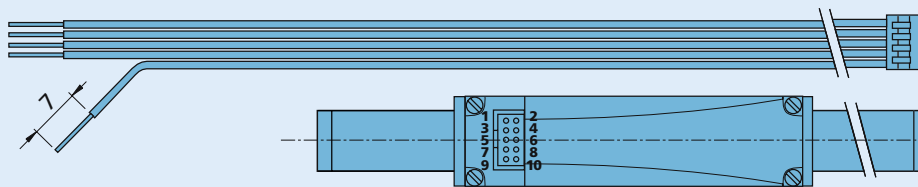
Ordering information

Linear DC-Servomotors Series

Series	Stroke mm	Rod length L1 $\pm 0,5$ mm
LM 2070-040-01	-20 \leftarrow 0 \rightarrow +20	134
LM 2070-120-01	-60 \leftarrow 0 \rightarrow +60	218

Note: Single rod available on request.

Cable and connection information

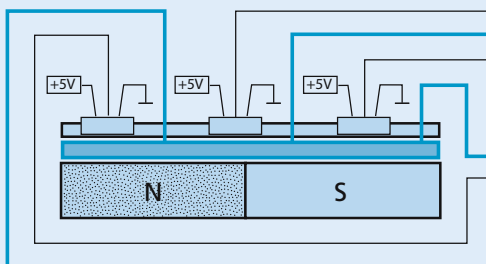


Cable
Single wires, material PVC
Length 200 mm \pm 10 mm
10 conductors, AWG 28

Recommended connector
Molex - Nr. 51110-1060

Connection

PIN	Function	Colour
10	N.C.	purple
9	N.C.	white
6	Hall sensor C	grey
1	Phase C	yellow
5	Hall sensor B	blue
7	Phase B	orange
2	Hall sensor A	green
8	Phase A	brown
3	Logic supply +5V	red
4	Logic GND	black



Three-phase coil winding with delta connection