

**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 <sup>1)</sup>	F <sub>e max.</sub>	9,2		N
2 Peak force <sup>1) 2)</sup>	F <sub>p max.</sub>	27,6		N
3 Continuous current <sup>1)</sup>	I <sub>e max.</sub>	0,79		A
4 Peak current <sup>1) 2)</sup>	I <sub>p max.</sub>	2,37		A
5 Back-EMF constant	k <sub>E</sub>	9,5		V/m/s
6 Force constant <sup>3)</sup>	k <sub>F</sub>	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 <sub>max.</sub>	40	120	mm
10 Repeatability <sup>4)</sup>		60	60	μm
11 Precision <sup>4)</sup>		200	400	μm
12 Acceleration <sup>5)</sup>	a <sub>e max.</sub>	93,9	54,8	m/s <sup>2</sup>
13 Speed <sup>5) 6)</sup>	v <sub>e max.</sub>	1,9	2,6	m/s
14 Thermal resistance	R <sub>th 1</sub> / R <sub>th 2</sub>	3,1 / 9,3		K/W
15 Thermal time constant	τ <sub>w1</sub> / τ <sub>w2</sub>	30 / 1 200		s
16 Operating temperature range		- 20 ... +125		°C
17 Rod weight <sup>7)</sup>	m <sub>m</sub>	98	168	g
18 Total weight <sup>7)</sup>	m <sub>t</sub>	236	306	g
19 Magnetic pitch	τ <sub>m</sub>	24	24	mm
20 Rod bearings		polymer sleeves		
21 Housing material		metal, non-magnetic		
22 Direction of movement		electronically reversible		

<sup>1)</sup> thermal resistance R<sub>th 2</sub> by 55% reduced

<sup>2)</sup> for max. 1 second with a duty cycle of 20%

<sup>3)</sup> with sine wave commutation

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

The values depend on conditions of use

<sup>5)</sup> theoretical value, referring only to the motor

<sup>6)</sup> with a triangular speed profile and the max. stroke

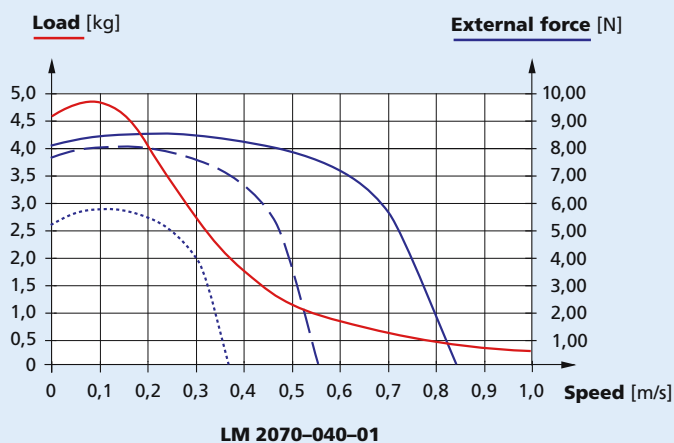
<sup>7)</sup> rounded value, for reference only

**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** (t<sub>1</sub> = t<sub>2</sub> = t<sub>3</sub>)

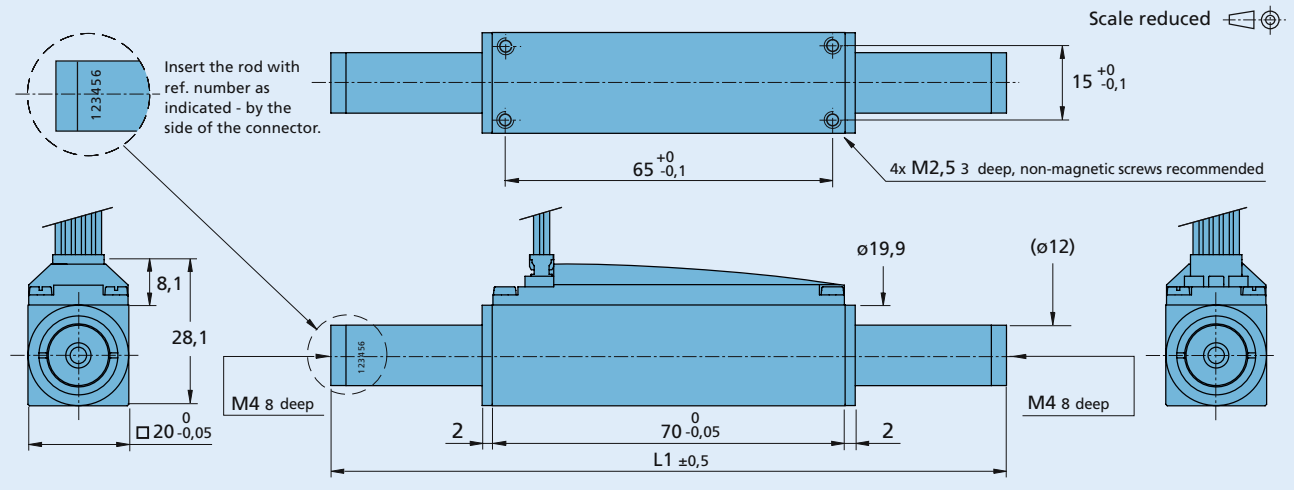
Displacement distance:	40 mm
Friction coefficient:	0,2
Slope angle:	0°
Rest time:	0,1 s

**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

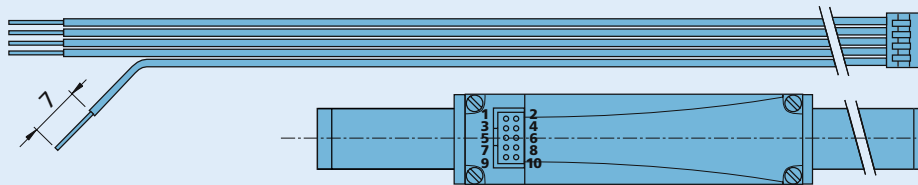
#### Stroke mm

#### Rod length L1 ±0,5 mm

Series	Stroke mm	Rod length L1 ±0,5 mm
LM 2070-040-01	-20 → 0 → +20	134
LM 2070-120-01	-60 → 0 → +60	218

Note: Single rod available on request.

### Cable and connection information

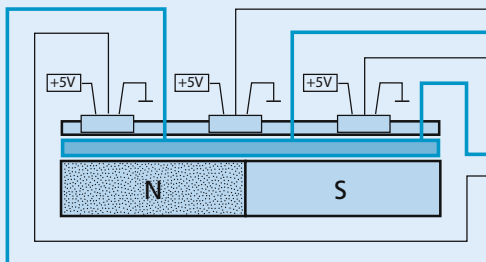


**Cable**  
Single wires, material PVC  
Length 200 mm ± 10 mm  
10 conductors, AWG 28

**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

+5V