Linear DC-Servomotors 9,2 N

for sin/cos control
QUICKSHAFT® Technology

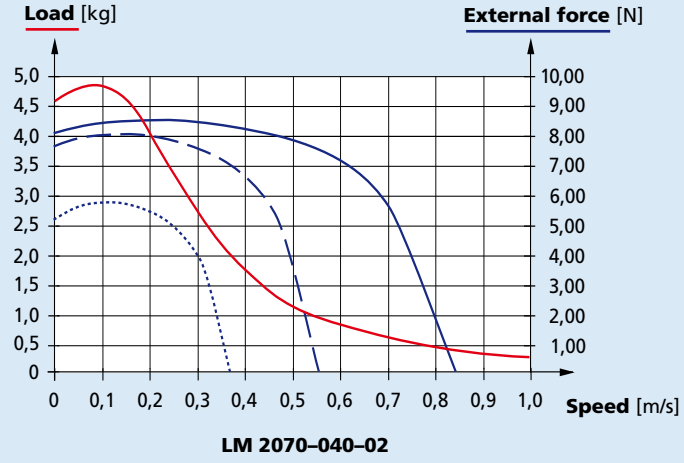
Series LM 2070 ... 02

		LM 2070–	040–02	080–02	120–02	160–02	220–02	
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	80	120	160	220	mm
10	Repeatability [4]		100	100	100	100	120	µm
11	Precision [4]		500	600	700	800	900	µm
12	Acceleration [5]	$a_{e\ max.}$	93,9	65,7	54,8	46,0	36,8	m/s^2
13	Speed [5] [6]	$v_{e\ max.}$	1,9	2,3	2,6	2,7	2,8	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	140	168	200	250	g
18	Total weight [7] [8]	m_t	236	278	306	338	388	g
19	Magnetic pitch	τ_m	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 10%
[3] with sine wave commutation
[4] typical values with integrated linear Hall sensors (sin/cos) and Motion Controller Elmo "Whistle" SOL-WHI2.5/60I01. The values depend on conditions of use
[5] theorical value, referring only to the motor
[6] with a triangular speed profile and the max. stroke
[7] rounded value, for reference only
[8] LM 2070 ... 12 with axial connection has an additional weight of 3 g.

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.
For more information about drive electronics, please contact your local sales representative.

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



LM 2070–040–02

Trapezoidal motion profile (t1 = t2 = t3)

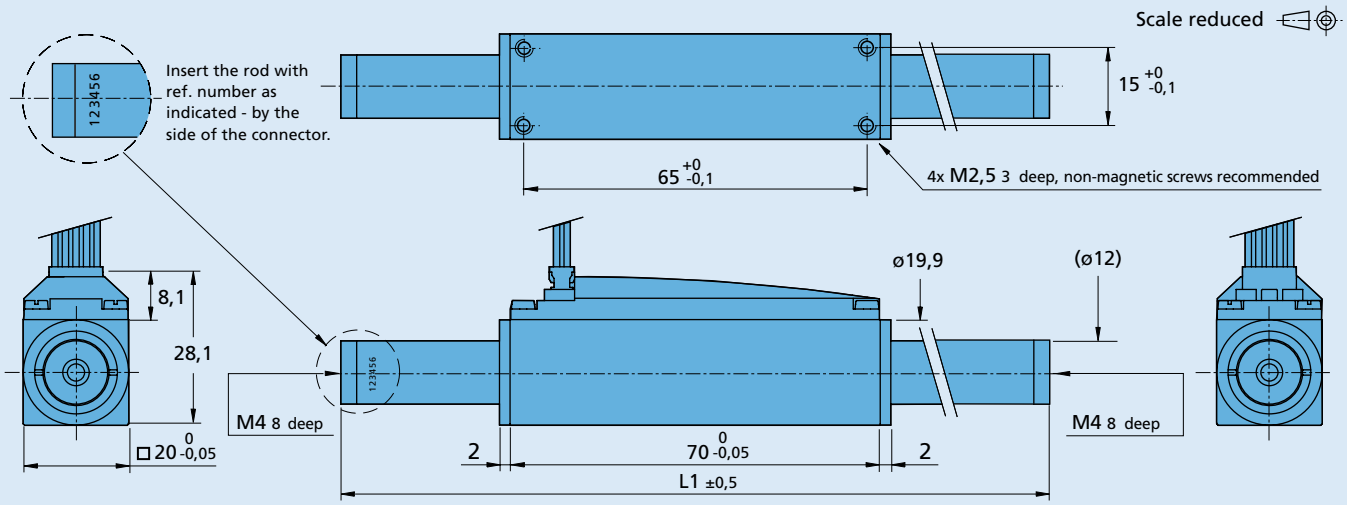
Displacement distance:	40 mm
Friction coefficient:	0,2
Slope angle:	0°
Rest time:	0,1 s

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 ... 02

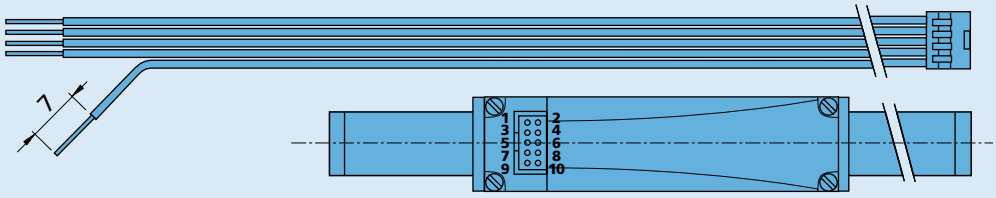


Ordering information

Linear DC-Servomotors Series	Stroke mm (0)	Rod length L1 ±0,5 mm
LM 2070-040-02	- 20 … + 20	134
LM 2070-080-02	- 40 … + 40	182
LM 2070-120-02	- 60 … + 60	218
LM 2070-160-02	- 80 … + 80	254
LM 2070-220-02	- 110 … + 110	314

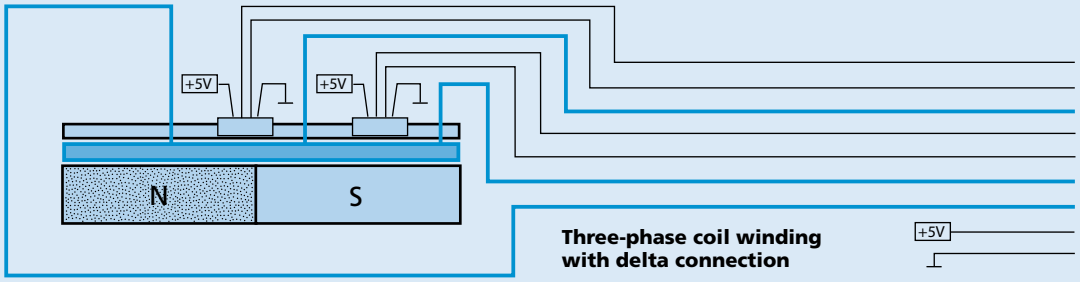
Note: Single rod available on request.

Cable and connection information



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

Recommended connector
Molex - Nr. 51110-1060

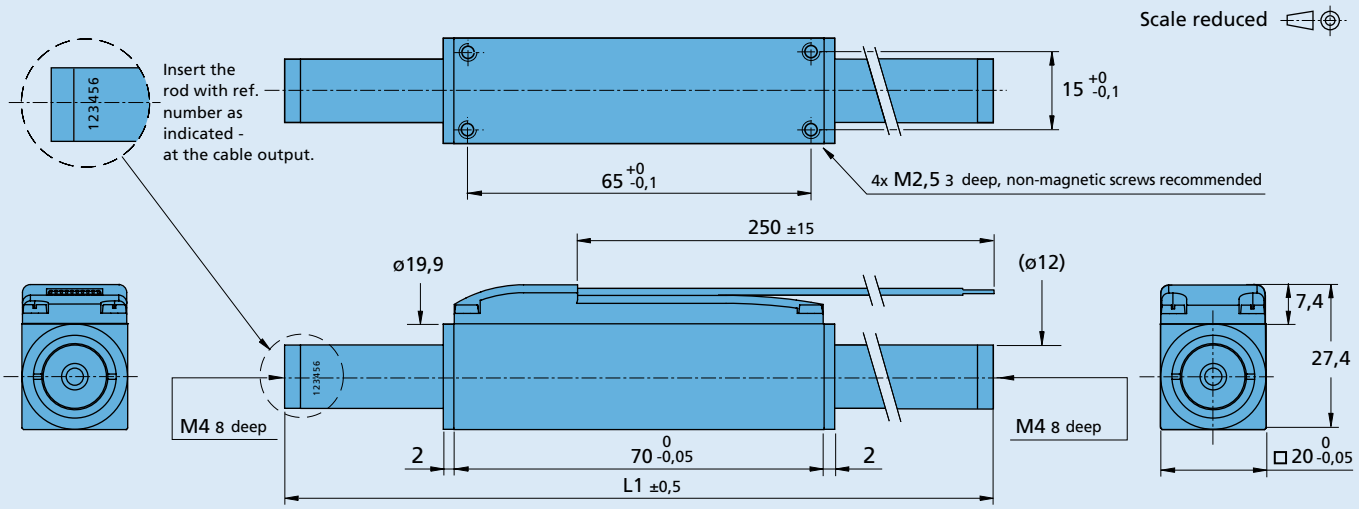


Three-phase coil winding with delta connection

Connection

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

Linear DC-Servomotor LM 2070 ... 12 with axial connection



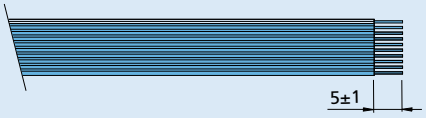
Ordering information

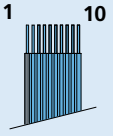
Linear DC-Servomotors Series	Stroke mm	Rod length L1 ±0,5 mm
LM 2070-040-12	- 20 … + 20	134
LM 2070-080-12	- 40 … + 40	182
LM 2070-120-12	- 60 … + 60	218
LM 2070-160-12	- 80 … + 80	254
LM 2070-220-12	- 110 … + 110	314

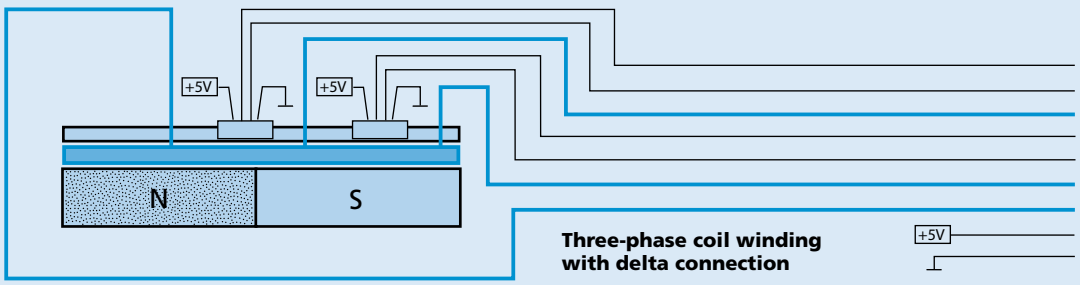
Note: Single rod available on request.

Cable and connection information

Cable
Material PVC, 10 conductors, AWG 28, grid 1mm, wires tinned





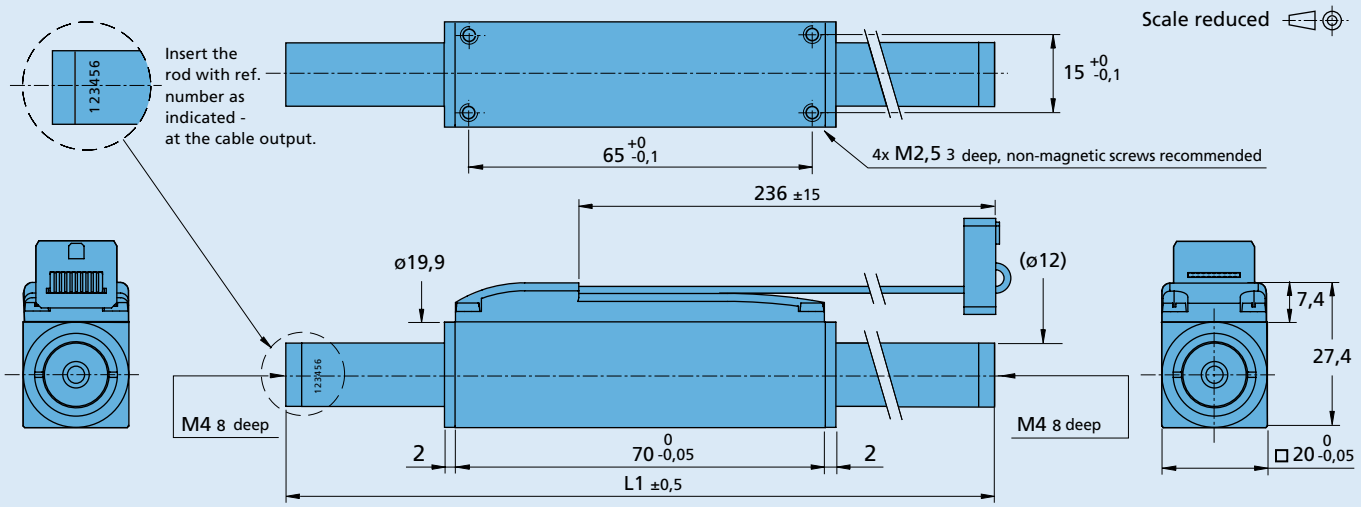


Three-phase coil winding with delta connection

Connection

PIN	Function
10	N.C.
6	Sin +
7	Sin -
3	Phase A
8	Cos +
9	Cos -
2	Phase B
1	Phase C
5	+5V
4	GND

Linear DC-Servomotor LM 2070 ... 12-C with axial connection and connector



Ordering information

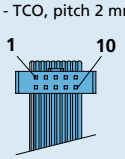
Linear DC-Servomotors Series	Stroke mm	Rod length L1 ±0,5 mm
LM 2070-040-12-C	- 20 ... + 20	134
LM 2070-080-12-C	- 40 ... + 40	182
LM 2070-120-12-C	- 60 ... + 60	218
LM 2070-160-12-C	- 80 ... + 80	254
LM 2070-220-12-C	- 110 ... + 110	314

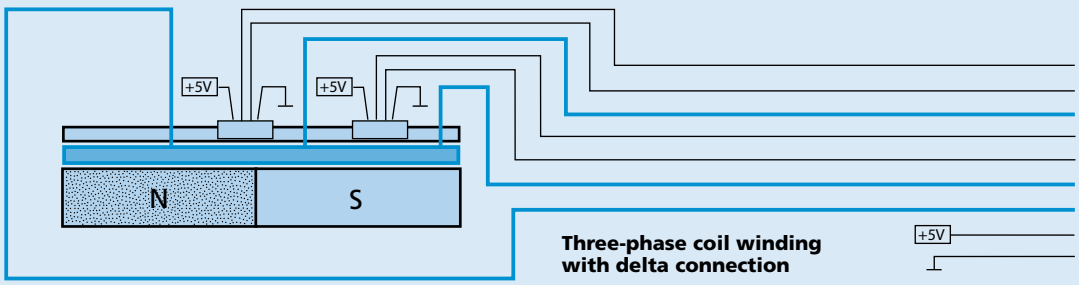
Note: Single rod available on request.

Cable and connection information

Cable
Material PVC
10 conductors, AWG 28

Connector
A05a - TCO, pitch 2 mm





Three-phase coil winding with delta connection

Connection

PIN	Function
10	N.C.
6	Sin +
7	Sin -
3	Phase A
8	Cos +
9	Cos -
2	Phase B
1	Phase C
5	+5V
4	GND