Linear DC-Servomotors

with Analog Hall Sensors
QUICKSHAFT® Technology

3,6 N

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

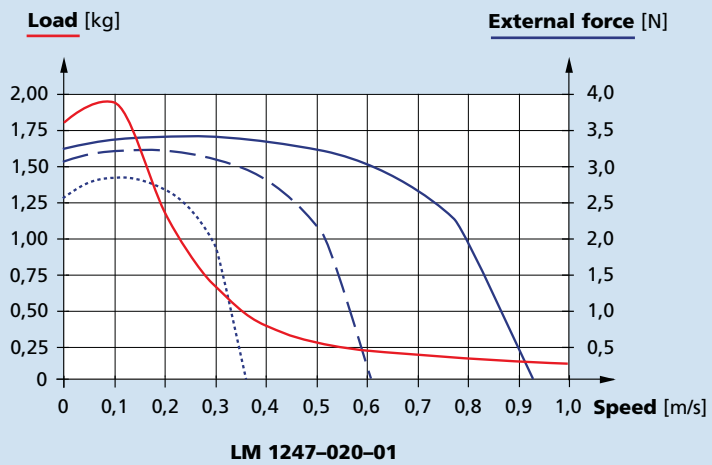
Series LM 1247 ... 01

		LM 1247–	020–01	040–01	060–01	080–01	100–01	120–01	
1	Continuous force [1]	$F_{e\,max.}$	3,6						N
2	Peak force [1] [2]	$F_{p\,max.}$	10,7						N
3	Continuous current [1]	$I_{e\,max.}$	0,55						A
4	Peak current [1] [2]	$I_{p\,max.}$	1,66						A
5	Back-EMF constant	k_E	5,25						V/m/s
6	Force constant [3]	k_F	6,43						N/A
7	Terminal resistance, phase-phase	R	13,17						Ω
8	Terminal inductance, phase-phase	L	820						µH
9	Stroke length	$s_{max.}$	20	40	60	80	100	120	mm
10	Repeatability [4]		40	40	40	40	40	40	µm
11	Precision [4]		120	140	160	180	200	220	µm
12	Acceleration [5]	$a_{e\,max.}$	198,0	148,5	127,3	101,8	91,4	82,9	m/s^2
13	Speed [5] [6]	$v_{e\,max.}$	2,0	2,4	2,8	2,9	3,0	3,2	m/s
14	Thermal resistance	$R_{th\,1}$ / $R_{th\,2}$	3,2 / 20,0						K/W
15	Thermal time constant	τ_{w1} / τ_{w2}	11 / 624						s
16	Operating temperature range		– 20 ... +125						°C
17	Rod weight [7]	m_m	18	24	28	35	39	43	g
18	Total weight [7]	m_t	57	63	67	74	78	82	g
19	Magnetic pitch	τ_m	18						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] theorical 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.



LM 1247–020–01

Trapezoidal motion profile (t1 = t2 = t3)

Displacement distance:	20 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:

- 0,1 Kg
- 0,2 Kg
- 0,5 Kg

For notes on technical data and lifetime performance refer to "Technical Information".
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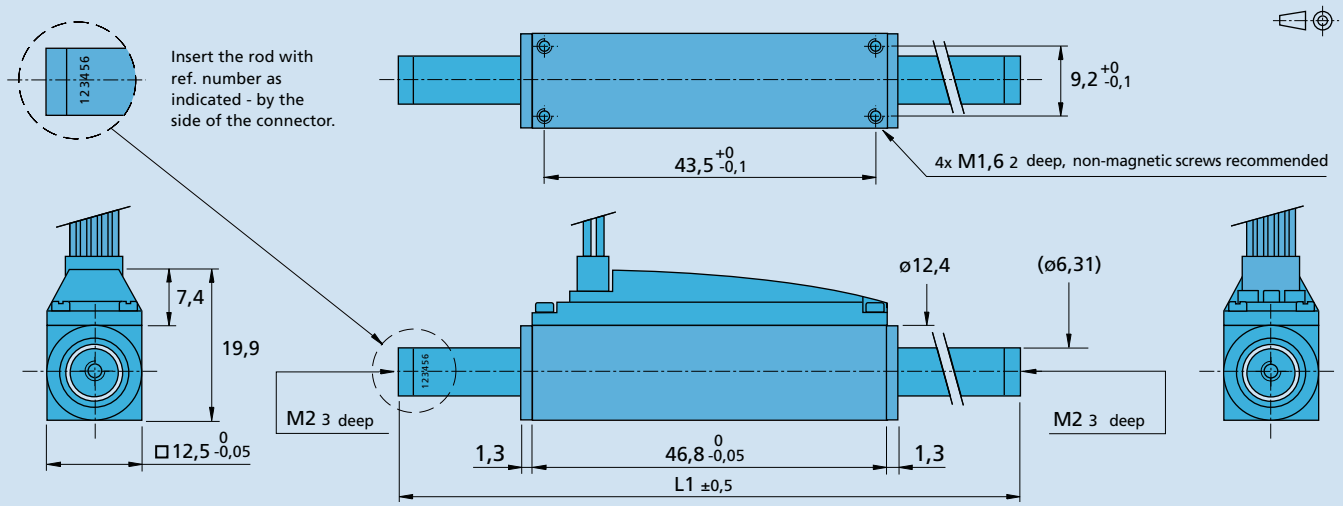
Linear DC-Servomotor LM 1247

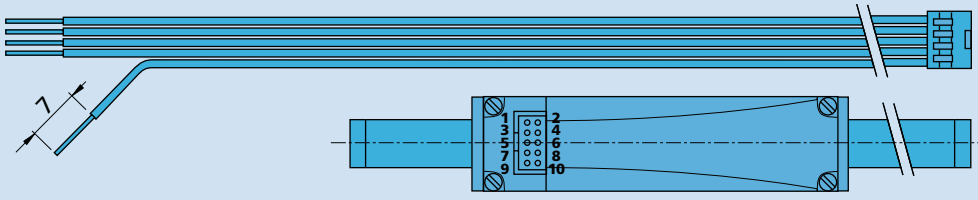


Ordering information

Linear DC-Servomotors Series	Stroke mm	Rod length L1 ±0,5 mm
LM 1247–020–01	–10 … +10	82
LM 1247–040–01	–20 … +20	109
LM 1247–060–01	–30 … +30	127
LM 1247–080–01	–40 … +40	154
LM 1247–100–01	–50 … +50	172
LM 1247–120–01	–60 … +60	190

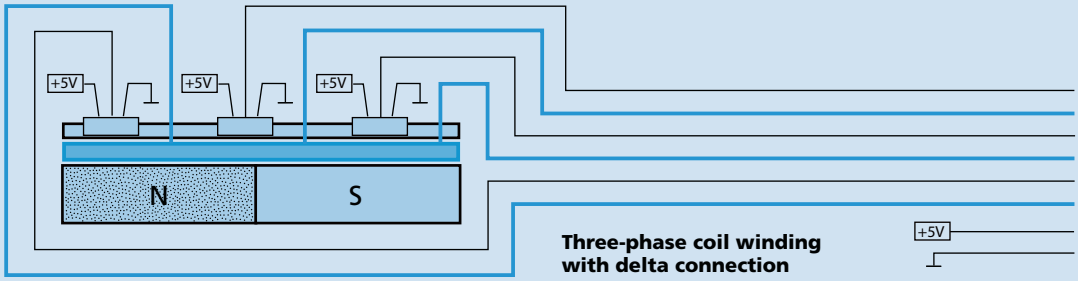
Note: Single rod available on request.

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
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