

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⁾ theoretical value, referring only to the motor

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

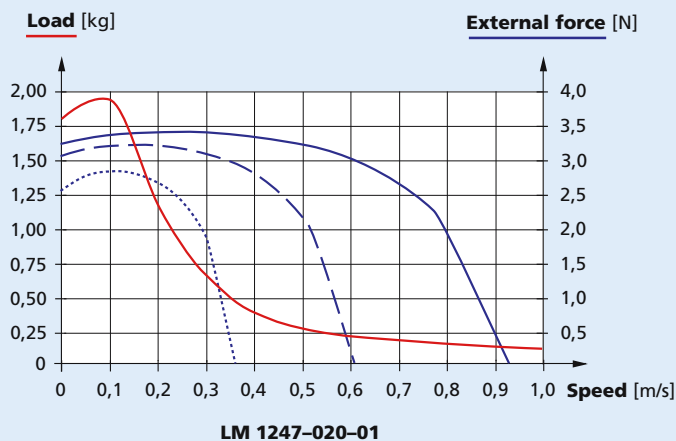
⁷⁾ rounded value, for reference only

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)

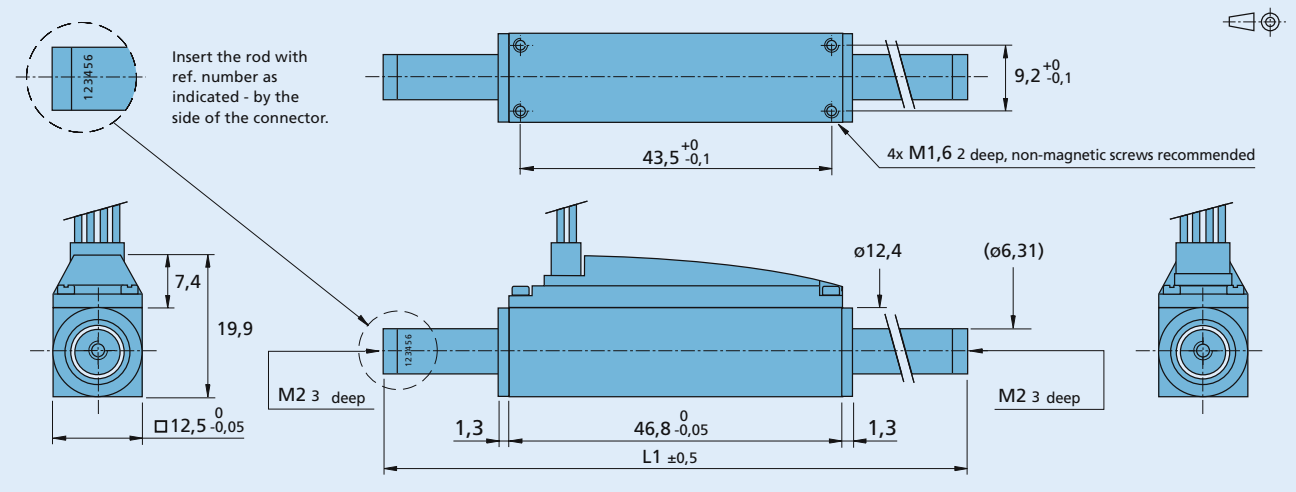
Displacement distance:	20 mm
Friction coefficient:	0,2
Slope angle:	0°
Rest time:	0,1 s

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

Linear DC-Servomotor LM 1247



Ordering information

Linear DC-Servomotors Series

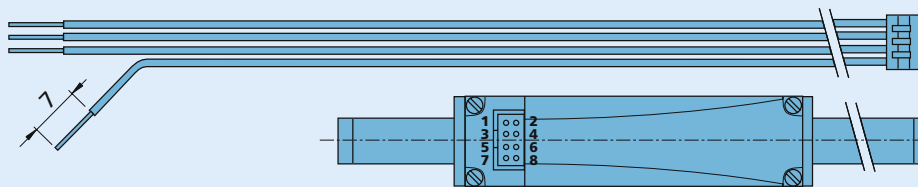
Stroke mm

Rod length L1 ±0,5 mm

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

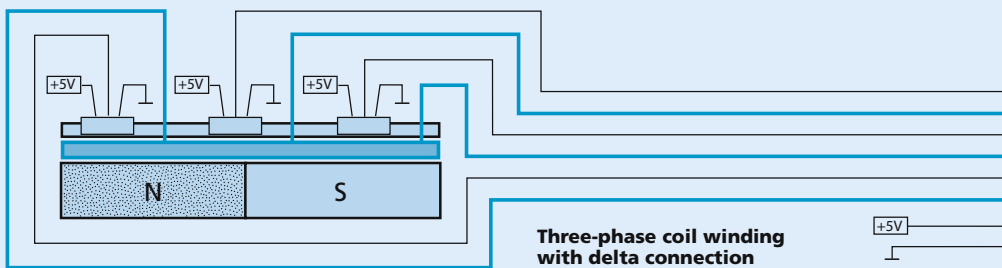
Note: Single rod available on request.

Cable and connection information



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

Recommended connector
Molex - Nr. 51110-0860



Three-phase coil winding with delta connection

Connection

PIN	Function	Colour
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