

Linear DC-Servomotors

with Analog Hall Sensors
QUICKSHAFT® Technology

3,6 N

For combination with
Drive Electronics:
Motion Controller

Series LM 1247 ... 11

	LM 1247-	020-11	040-11	060-11	080-11	100-11	120-11	
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_{th1} / R_{th2}	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_{th2} 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 and Motion Controller.

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

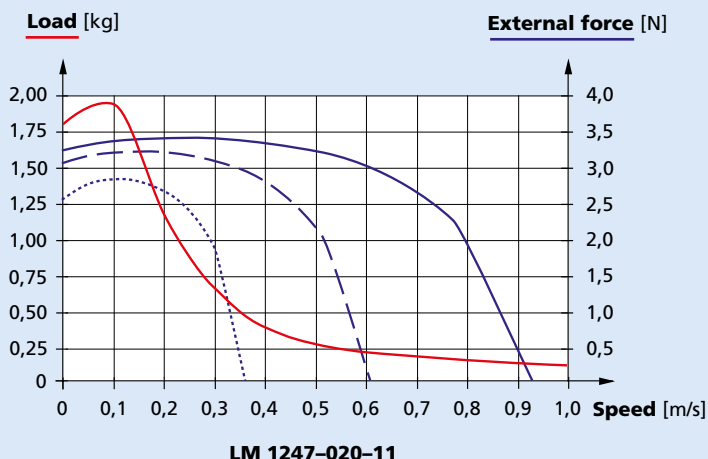
⁷⁾ rounded value, for reference only

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 ($t_1 = t_2 = t_3$)

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

