

Linear DC-Servomotors

with Analog Hall Sensors
QUICKSHAFT® Technology

1,03 N

For combination with
Drive Electronics:
Motion Controller

Series LM 0830 ... 01

	LM 0830-	015-01	040-01		
1 Continuous force ¹⁾	F _{e max.}	1,03		N	
2 Peak force ^{1) 2)}	F _{p max.}	2,74		N	
3 Continuous current ¹⁾	I _{e max.}	0,53		A	
4 Peak current ^{1) 2)}	I _{p max.}	1,41		A	
5 Back-EMF constant	k _E	1,58		V/m/s	
6 Force constant ³⁾	k _F	1,94		N/A	
7 Terminal resistance, phase-phase	R	7,37		Ω	
8 Terminal inductance, phase-phase	L	117		μH	
9 Stroke length	s _{max.}		15	40	mm
10 Repeatability ⁴⁾			40	40	μm
11 Precision ⁴⁾			120	140	μm
12 Acceleration ⁵⁾	a _{e max.}		206,9	147,8	m/s ²
13 Speed ^{5) 6)}	v _{e max.}		1,8	2,4	m/s
14 Thermal resistance	R _{th 1} / R _{th 2}	6,6 / 37,4			K/W
15 Thermal time constant	τ _{w1} / τ _{w2}	4 / 291			s
16 Operating temperature range		- 20 ... +125			°C
17 Rod weight ⁷⁾	m _m		5	7	g
18 Total weight ⁷⁾	m _t		15	17	g
19 Magnetic pitch	τ _m	12			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 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

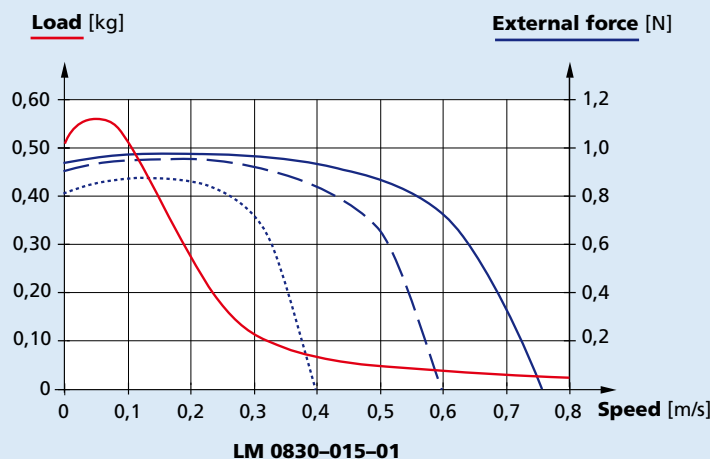
⁷⁾ rounded value, for reference only

Notes: These motors are for operation with DC-voltage < 50 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:	15 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:

- 0,035 Kg	_____
- 0,05 Kg	-----
- 0,1 Kg

