Linear DC-Servomotors

with Analog Hall Sensors
QUICKSHAFT® Technology

1,03 N

For combination with
Drive Electronics:
Motion Controller

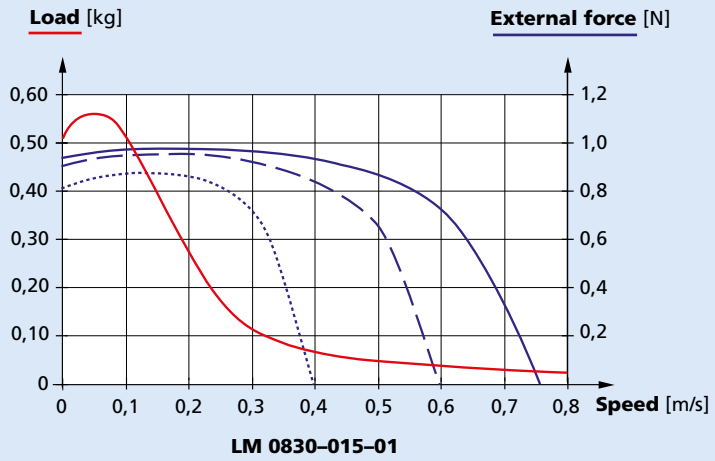
Series LM 0830 ... 01

		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_{th1} / R_{th2}	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] 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 < 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.



LM 0830–015–01

Trapezoidal motion profile (t1 = t2 = t3)

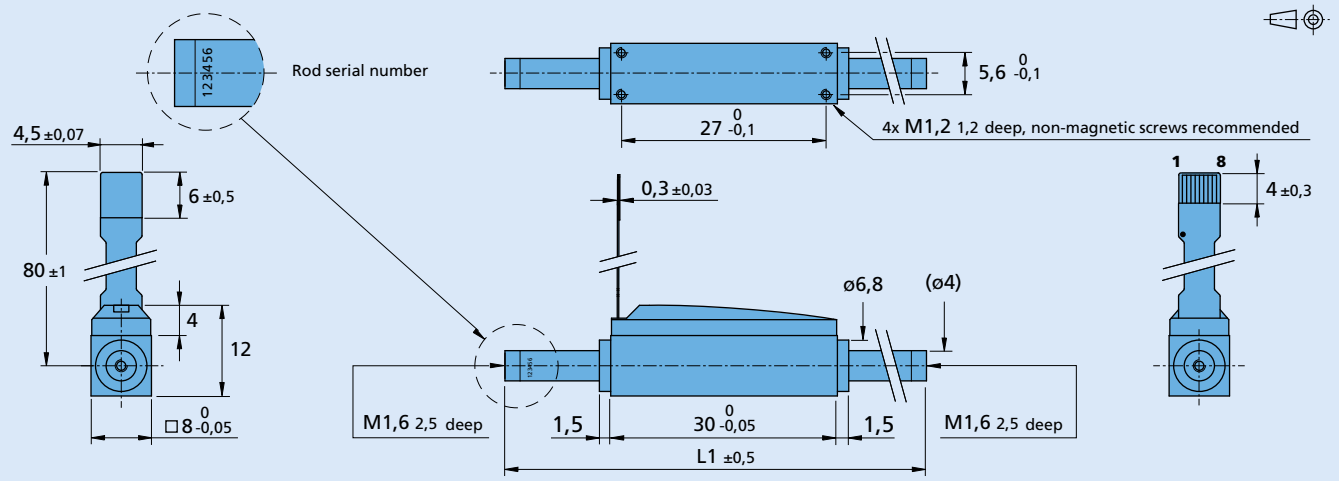
Displacement distance:	15 mm
Friction coefficient:	0,2
Slope angle:	0°
Rest time:	0,1 s

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

Linear DC-Servomotor LM 0830



LM 0830 ... 01

Ordering information

Linear DC-Servomotors Series	Stroke mm	Rod length L1 ±0,5 mm
LM 0830–015–01	–7,5 … 0 … +7,5	58
LM 0830–040–01	–20 … 0 … +20	82

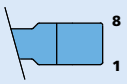
Note: Single rod available on request.

Options

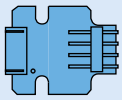
- Flexboard adapter (part no. 6501.00117), size 18 x 23 x 6 mm
- Cable with connector (part no. 6501.00118), 200 mm length ± 10 mm, 8 conductors

Cable and connection information

Motor flexboard



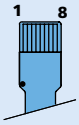
Flexboard adapter

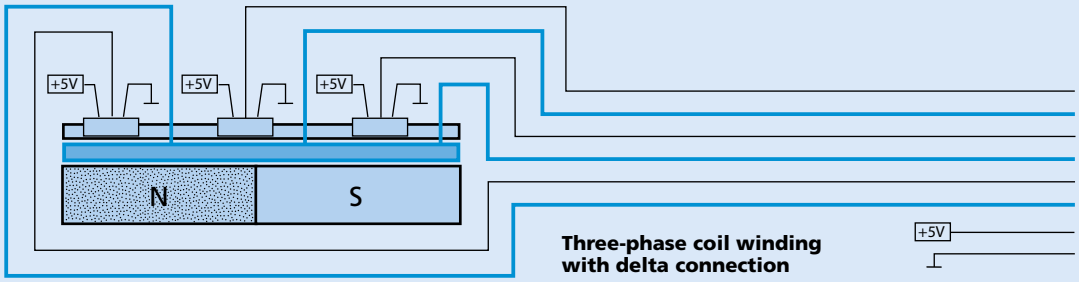


Cable for connection with Motion Controller

Recommended connector
Molex - ZIF connector, Nr. 52746

Flexboard
8 circuits; 0,5mm pitch





Three-phase coil winding with delta connection

Connection

No.	Function	Color
6	Hall sensor C	grey
1	Phase C	yellow
7	Hall sensor B	blue
2	Phase B	orange
8	Hall sensor A	green
3	Phase A	brown
5	+5V	red
4	GND	black