

# Linear DC-Servomotors

1,03 N

with Analog Hall Sensors

## LM 0830 ... 01

Values at 22°C	LM 0830 ... 01		
Continuous force	$F_{e \max.}$	1,03	N
Peak force	$F_{p \max.}$	2,74	N
Continuous current	$I_{e \max.}$	0,53	A
Peak current	$I_{p \max.}$	1,41	A
Back-EMF constant	$k_E$	1,58	V/m/s
Force constant	$k_F$	1,94	N/A
Terminal resistance, phase-phase	$R$	7,37	$\Omega$
Terminal inductance, phase-phase	$L$	117	$\mu\text{H}$
Thermal resistance	$R_{th1} / R_{th2}$	6,6 / 37,4	K/W
Thermal time constant	$\tau_{w1} / \tau_{w2}$	4 / 291	s
Operating temperature range		-20 ... +125	°C
Magnetic pitch	$\tau_m$	12	mm
Rod bearings		polymer sleeves	
Housing material		metal, non-magnetic	
Direction of movement		electronically reversible	

		015-01	040-01	
Stroke length	$S_{\max.}$	15	40	mm
Repeatability	$\sigma_r$	40	40	$\mu\text{m}$
Accuracy	$\sigma_a$	120	140	$\mu\text{m}$
Acceleration	$a_{e \max.}$	206,9	147,8	$\text{m/s}^2$
Speed	$v_{e \max.}$	1,8	2,4	m/s
Rod length	$L1$	58	82	mm
Rod mass	$m_m$	5	7	g
Total mass	$m_t$	15	17	g

**Note:** These motors are for operation with DC-voltage < 50 V DC. The given values are for free standing motors.  
Other rod lengths available on request.

### Motor characteristic curves

#### Trapezoidal motion profile ( $t_1 = t_2 = t_3$ )

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

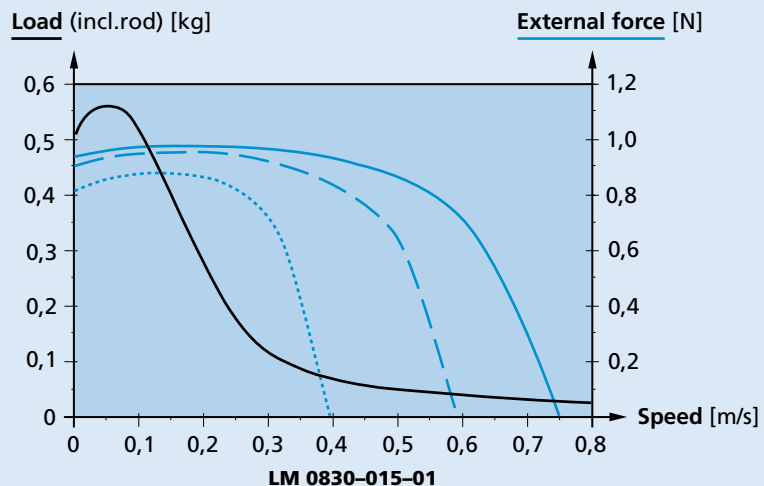
#### Load:

The max. applicable load (incl. rod) at a given speed with an external force of 0 N

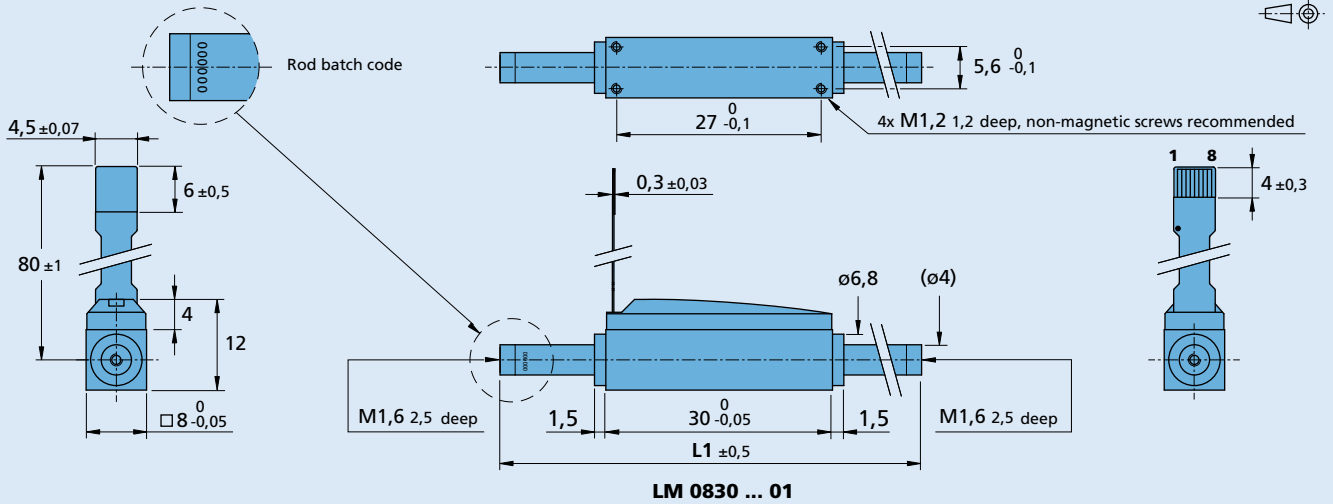
#### External force:

The max. permissible external force at a given speed with a load (incl. rod) of:

- 0,035 kg ———
- 0,05 kg - - - - -
- 0,1 kg ⋯⋯⋯



### Dimensional drawing



### Option, cable and connection information

Example product designation: **LM0830-015-01**

Option	Type	Description	Connection	
			No.	Function
			1	Phase C
			2	Phase B
			3	Phase A
			4	GND
			5	U <sub>DD</sub> (+5V)
			6	Hall sensor C
			7	Hall sensor B
			8	Hall sensor A
			<b>Flexboard</b>	
			8 circuits; 0,5mm pitch	
			Recommended connector	
			Molex - ZIF connector,	
			Nr. 52746	

### Product combination

Drive Electronics	Cables / Accessories		
MCLM 3002 P MCLM 3002 F MCLM 3002 S MCLM 3003 P MC 5004 P MC 5004 P STO	To view our large range of accessory parts, please refer to the "Accessories" chapter.		