

Linear DC-Servomotors

3,6 N

with Analog Hall Sensors

LM 1247 ... 11

| Values at 22°C | LM 1247 ... 11 | | |
|----------------------------------|-------------------------|---------------------------|---------------|
| Continuous force | $F_{e \max.}$ | 3,6 | N |
| Peak force | $F_{p \max.}$ | 10,7 | N |
| Continuous current | $I_{e \max.}$ | 0,55 | A |
| Peak current | $I_{p \max.}$ | 1,66 | A |
| Back-EMF constant | k_E | 5,25 | V/m/s |
| Force constant | k_F | 6,43 | N/A |
| Terminal resistance, phase-phase | R | 13,17 | Ω |
| Terminal inductance, phase-phase | L | 820 | μH |
| Thermal resistance | R_{th1} / R_{th2} | 3,2 / 20 | K/W |
| Thermal time constant | τ_{w1} / τ_{w2} | 11 / 624 | s |
| Operating temperature range | | -20 ... +125 | °C |
| Magnetic pitch | τ_m | 18 | mm |
| Rod bearings | | polymer sleeves | |
| Housing material | | metal, non-magnetic | |
| Direction of movement | | electronically reversible | |

| | LM 1247- | 020-11 | 040-11 | 060-11 | 080-11 | 100-11 | 120-11 | |
|---------------|---------------|--------|--------|--------|--------|--------|--------|----------------|
| Stroke length | $S_{\max.}$ | 20 | 40 | 60 | 80 | 100 | 120 | mm |
| Repeatability | σ_r | 40 | 40 | 40 | 40 | 40 | 40 | μm |
| Accuracy | σ_a | 120 | 140 | 160 | 180 | 200 | 220 | μm |
| Acceleration | $a_{e \max.}$ | 198 | 148,5 | 127,3 | 101,8 | 91,4 | 82,9 | m/s^2 |
| Speed | $v_{e \max.}$ | 2 | 2,4 | 2,8 | 2,9 | 3 | 3,2 | m/s |
| Rod length | $L1$ | 82 | 109 | 127 | 154 | 172 | 190 | mm |
| Rod mass | m_m | 18 | 24 | 28 | 35 | 39 | 43 | g |
| Total mass | m_t | 57 | 63 | 67 | 74 | 78 | 82 | g |

Note: These motors are for operation with DC-voltage < 75 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: 20 mm
Friction coefficient: 0,2
Slope angle: 0°
Rest time: 0,1 s

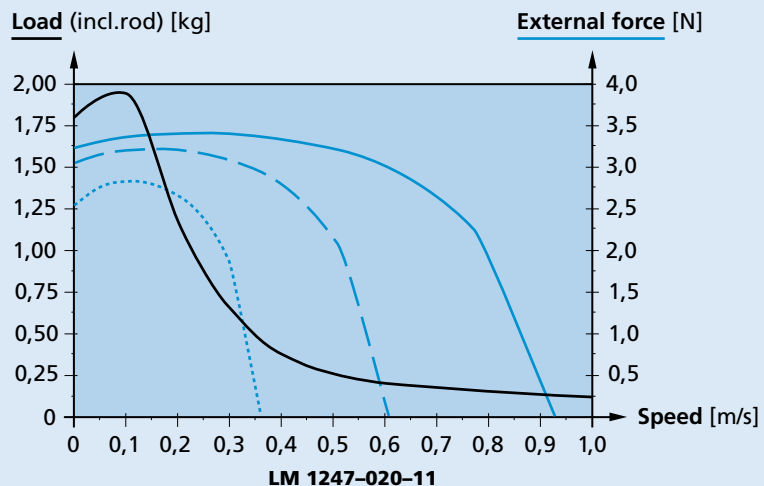
Load:

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

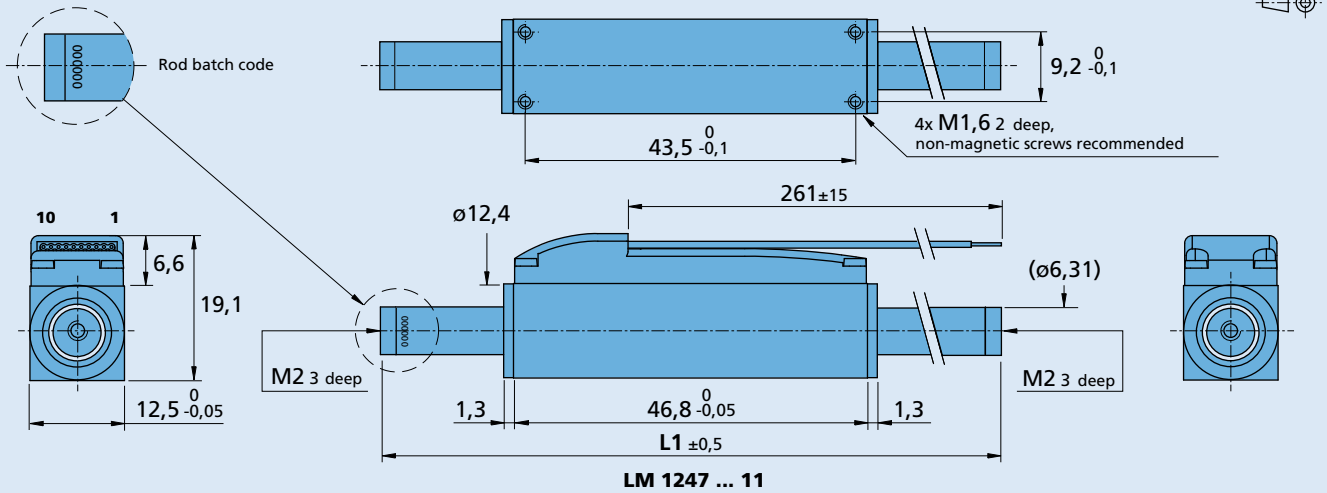
External force:

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

- 0,1 kg ———
- 0,2 kg - - - - -
- 0,5 kg

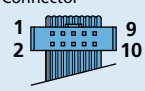


Dimensional drawing



Option, cable and connection information

Example product designation: **LM1247-020-11**

| Option | Type | Description | Connection | | | | |
|--------|--|---|--|-----------------------|-----|-----------------------|--------|
| | | | -11/-11C | | -01 | | |
| | | | No. | Function | No. | Function | Color |
| -11C | Connector  | Material PVC, 10 conductors, AWG 28 with connector A05a - TCO, pitch 2 mm | 1 | Phase C | 1 | Phase C | yellow |
| | | | 2 | Phase B | 2 | Hall sensor A | green |
| | | | 3 | Phase A | 3 | U _{DD} (+5V) | red |
| | | | 4 | GND | 4 | GND | black |
| | | | 5 | U _{DD} (+5V) | 5 | Hall sensor B | blue |
| | | | 6 | Hall sensor C | 6 | Hall sensor C | grey |
| | | | 7 | Hall sensor B | 7 | Phase B | orange |
| | | | 8 | Hall sensor A | 8 | Phase A | brown |
| | | | 9 | N.C. | 9 | N.C. | white |
| | | | 10 | N.C. | 10 | N.C. | purple |
| | | | Standard cable | | | | |
| | | | Material PVC, 10 conductors, AWG 28, grid 1mm, wires tinned. | | | | |

Product combination

| Drive Electronics | Cables / Accessories |
|---|--|
| MCLM 3002 P MCLM 3002 S MCLM 3003 P MCLM 3006 S MC 5004 P MC 5004 P STO MC 5005 S | To view our large range of accessory parts, please refer to the "Accessories" chapter. |