



Rotation Stage

M101

Features

Hall-sensor controlled automatic zero-positioning

Standard SM1-compatible mount for optical elements

Angular resolution $\leq 0.01^\circ$

Low backlash $\leq 0.1^\circ$

Applications

Mirror positioning

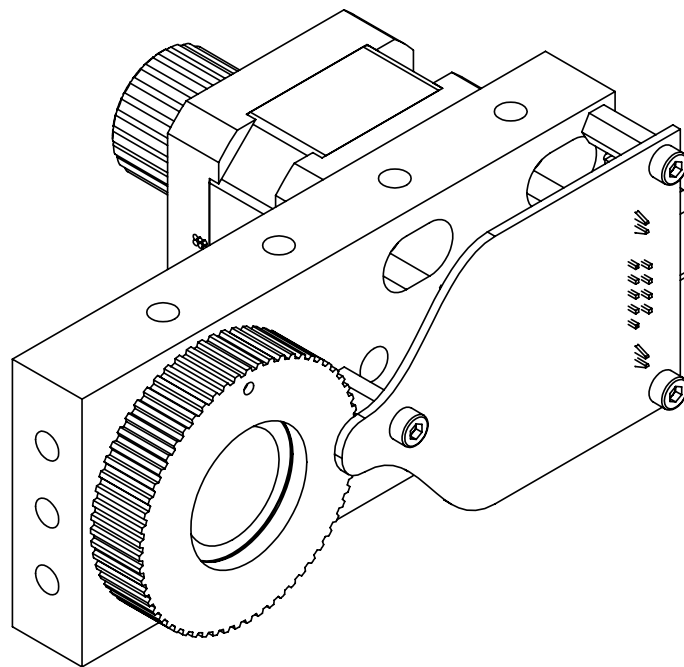
Polarization adjustment

Grating positioning

Neutral density filter positioning

Description

The LK-Instruments M101 is a robust and ball bearing mounted rotation stage designed for carrying optical elements. It can be mounted to the experimental setup in any orientation utilizing standard M6 screws, set screws, posts and post holders.



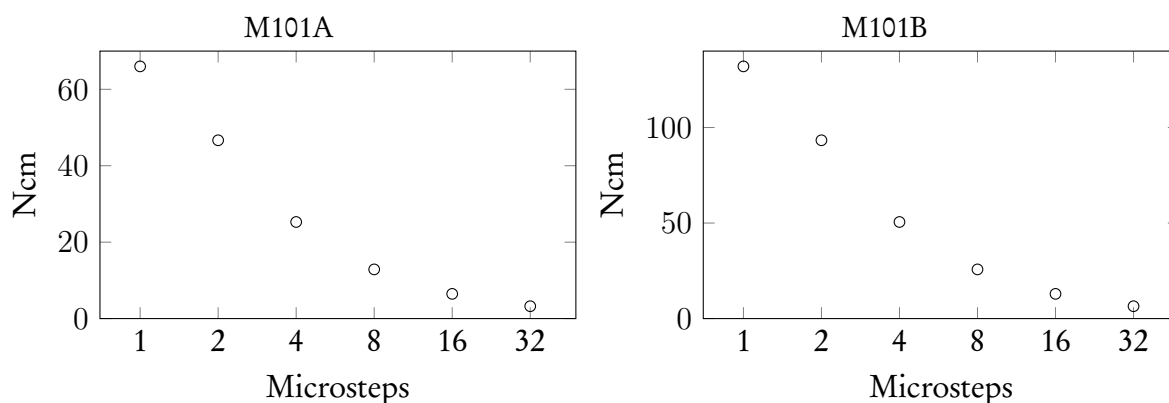
LK-Instruments
Unterbrüder Str. 14
71549 Auenwald
Germany
www.lk-instruments.com

Specifications

$T_A = 25\text{ }^{\circ}\text{C}$ and 50% RH unless otherwise noted.

| Parameter | Conditions | M101A | | | M101B | | | Unit |
|---------------------|------------------------------|-------|-------|------|-------|-------|------|--------------------|
| | | Min | Typ | Max | Min | Typ | Max | |
| Current | | 0.1 | 1.3 | 1.33 | 0.1 | 1.65 | 1.68 | A/Phase |
| Holding torque | Microst. = 1, Curr. = Max | | 66 | | | 132 | | Ncm |
| Step angle | Microst. = 1 | | 0.3 | | | 0.3 | | deg |
| Step angle accuracy | | | 1.7 | | | 1.7 | | % |
| Backlash | | | 0.1 | | | 0.1 | | deg |
| Gear ratio | | | 3 | | | 3 | | |
| Velocity | Microst. = 1, 2 ms/step | | 150 | | | 150 | | deg/s |
| Load capacity | radial/axial | | 5/2.5 | | | 5/2.5 | | kg |
| Weight | | | 0.504 | | | 0.634 | | kg |
| Temperature range | | 0 | | 40 | 0 | | 40 | $^{\circ}\text{C}$ |

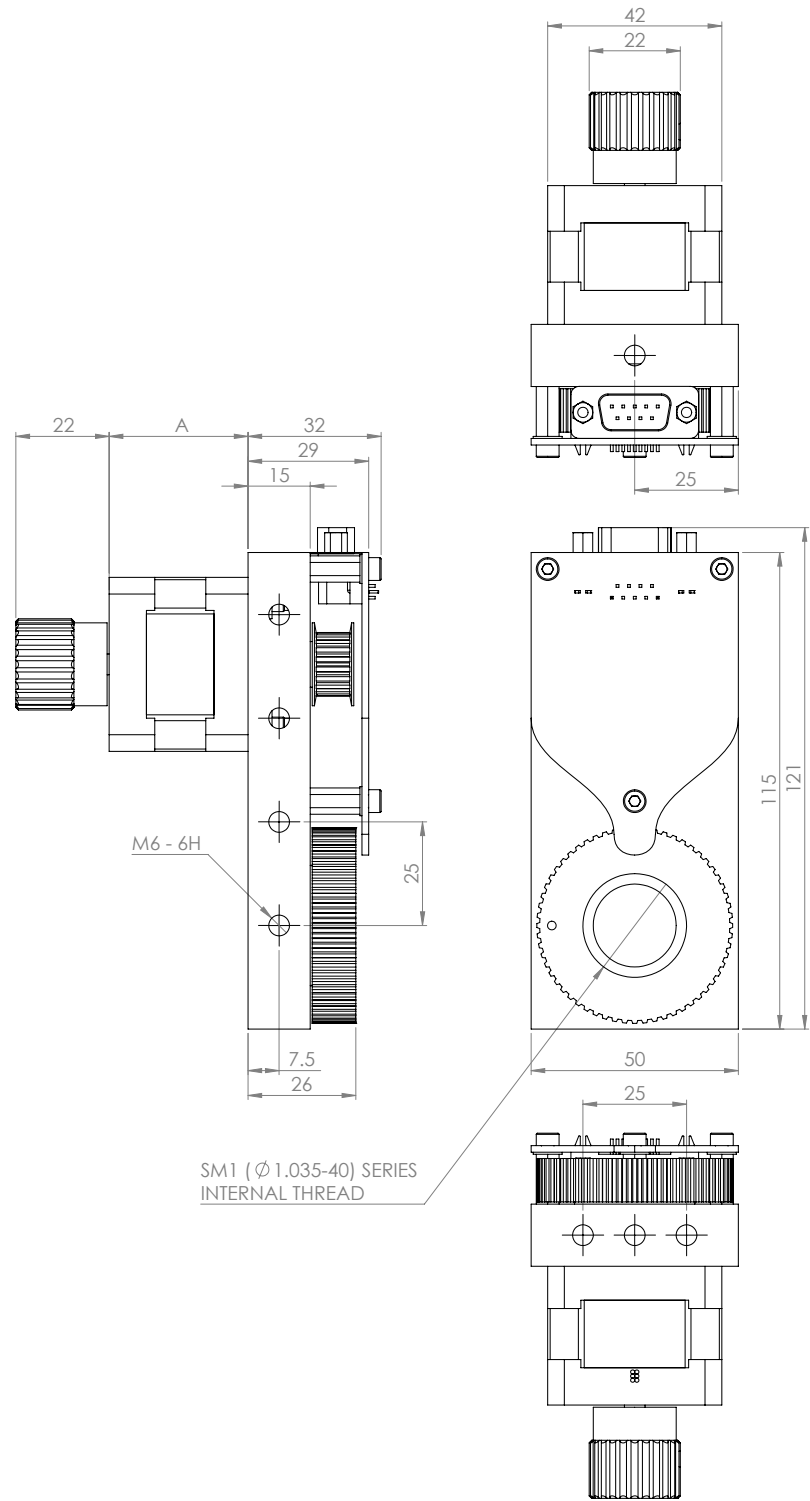
Microstepping. A physical property of stepper motors is that the holding torque decreases heavily with the number of microsteps. For the M101A and M101B rotation stages the holding torque vs. the number of microsteps is shown in the following diagrams.



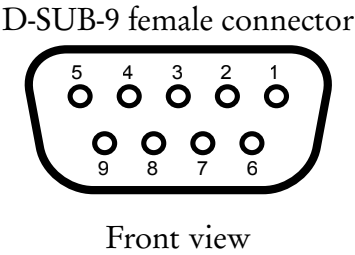
Outer Dimensions

All dimensions in millimeters.

With $A = 33.5$ mm for M101A and $A = 47$ mm for M101B.



Pin Configuration



| Pin | Function |
|--------|-----------|
| 1 | Phase B1 |
| 2 | Phase B2 |
| 3 | Phase A2 |
| 4 | Phase A1 |
| 5 | Ground |
| 6 | +5V |
| 7 | Zero sens |
| 8 | NC |
| 9 | NC |
| Shield | NC |

Ordering Information

| Model | Description |
|---------|---|
| M101A | 66 Ncm holding torque, with rotary knob |
| M101ANK | 66 Ncm holding torque, without rotary knob |
| M101B | 132 Ncm holding torque, with rotary knob |
| M101BNK | 132 Ncm holding torque, without rotary knob |