



# 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

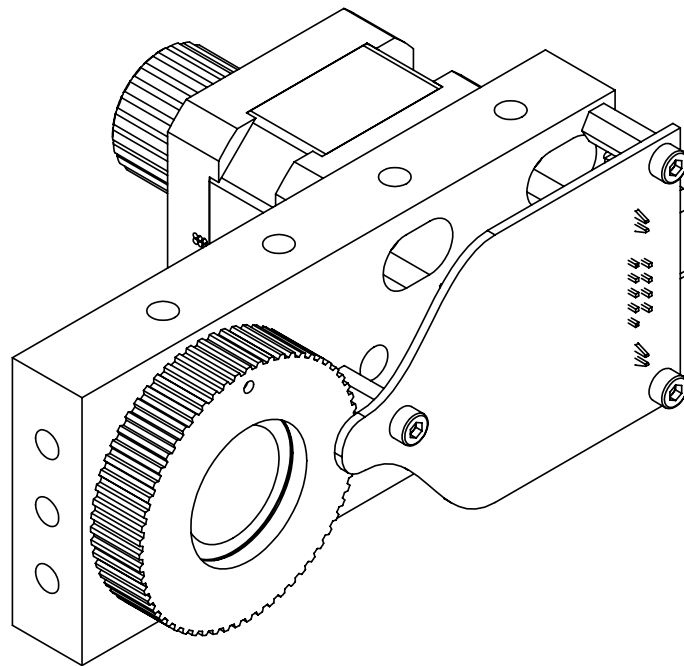
Polarization adjustment

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.



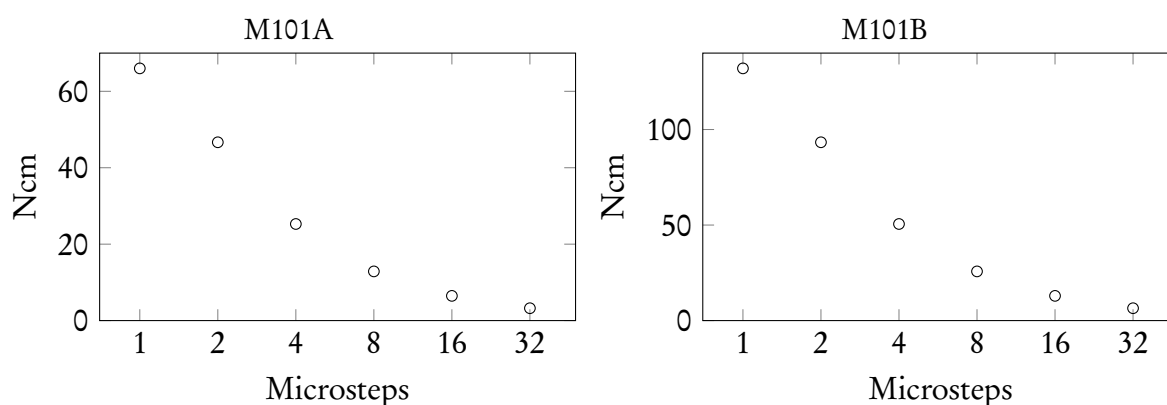
LK-Instruments  
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71554 Weissach im Tal  
Germany  
[www.lk-instruments.com](http://www.lk-instruments.com)

## Specifications

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

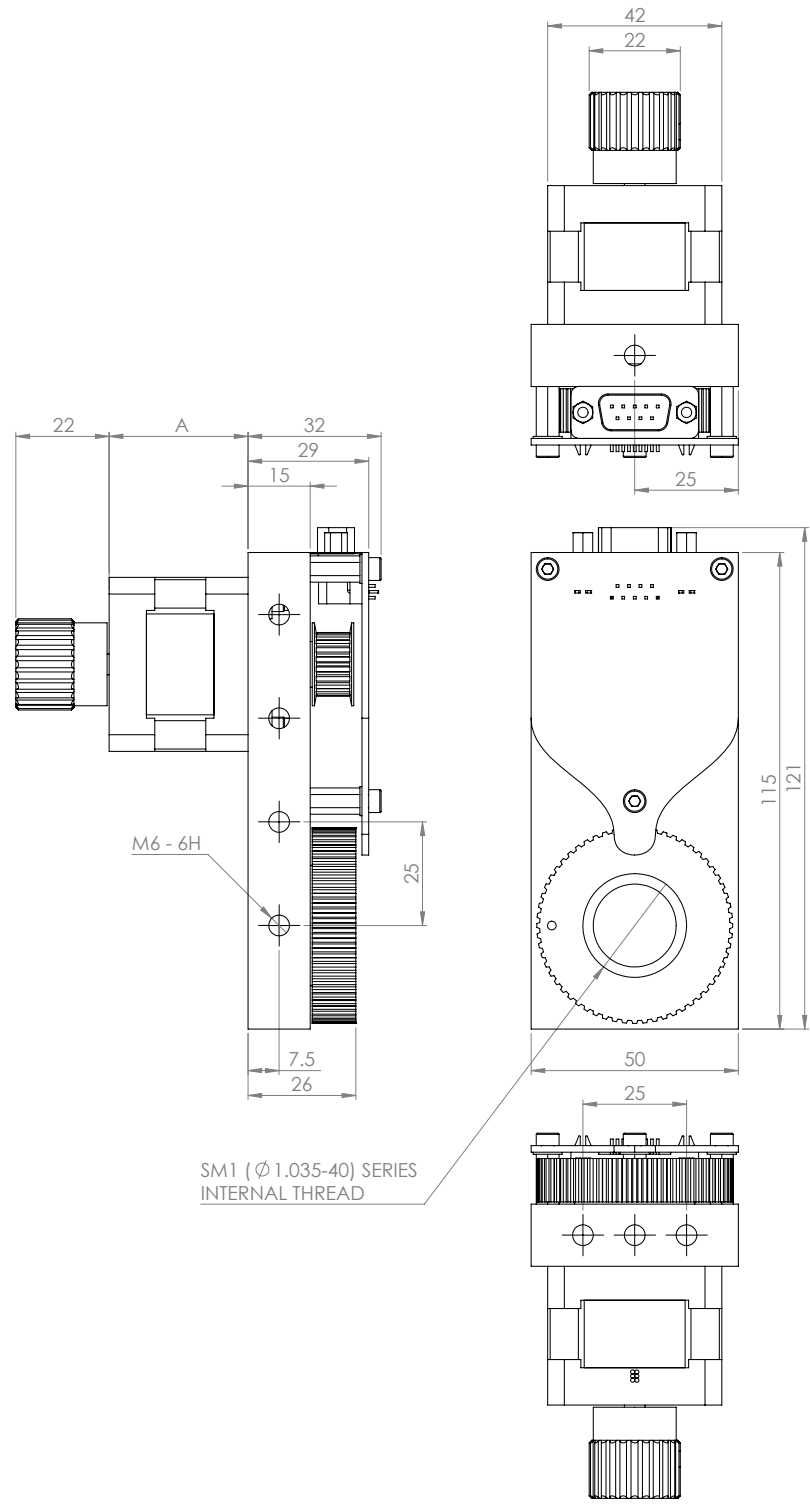
Parameter	Conditions	M101A			M101B			Unit
		Min	Typ	Max	Min	Typ	Max	
Current		0.1	1.3	1.33	0.1	1.65	1.68	A/Phase
Holding torque	Microst. = 1, Curr. = Max		66			132		Ncm
Step angle	Microst. = 1		0.3			0.3		deg
Step angle accuracy			5			5		%
Backlash			0.1			0.1		deg
Gear ratio			3			3		
Velocity	Microst. = 1, 1 ms/step		300			300		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.



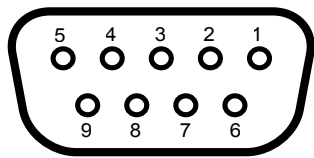
Outer Dimensions

All dimensions in millimeters.  
With  $A = 33.5$  mm for M101A and  $A = 47$  mm for M101B.



Pin Configuration

D-SUB-9 female connector



Front view

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