

# M-232

## Compact, High-Resolution, Closed-Loop DC-Mike Actuator

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M-232.17 high-resolution DC-Mike actuator mounted on M-105 translation stage

- 17 mm Travel Range
- 0.1  $\mu\text{m}$  Minimum Incremental Motion
- Velocity up to 2.5 mm/sec.
- Closed-Loop DC Motor
- Compatible with Leading Industrial Motion Controllers
- Integrated Hall-Effect Limit and Origin Switches
- Fits M-105 & F-110 Fiber Aligners
- >5,000 Hours MTBF

The M-232 is an ultra-high-resolution linear actuator providing linear motion up to 17 mm with sub-micron resolution in a compact package. It features a space-saving design with a leadscrew side-by-side to a closed-loop DC motor / gear-head combination and a high-resolution encoder (2048 counts/rev.).

### Upgrade for Manual Stages

The M-232 was especially designed to fit existing manual translation stages (e.g. M-105) and F-110 piezoelectric fiber alignment systems as a direct replacement for a manual micrometer. M-232 actuators provide a cost-effective solution in industrial and OEM

environments. They feature a low-stiction, low-friction construction allowing for minimum incremental motion of 100 nanometers at speeds of up to 2.5 mm/sec.

### Non-Contact Limit and Origin Switches

Integrated, non-contact, high-precision Hall-effect origin and limit switches, protect your equipment and increase versatility in automation applications.

### Technical Data

Models	M-232.17	Units	Notes see p. 7-106
Travel range	17	mm	
Design resolution	0.007	$\mu\text{m}$	A3
Min. incremental motion	0.1	$\mu\text{m}$	A4
Unidirectional repeatability	0.2	$\mu\text{m}$	
Backlash	2	$\mu\text{m}$	
Max. velocity	2.5	mm/s	
Max. push/pull force	40	N	
Max. lateral force	0	N (at tip)	
Encoder resolution	2048	counts/rev.	
Drive screw pitch	0.4	mm/rev.	
Gear ratio	28.44444:1		
Nominal motor power	2	W	
Motor voltage	12	V	
Limit switches	Hall-Effect		
Weight	0.17	kg	
Recommended motor controllers	C-843, C-848, C-862		D2

### Ordering Information

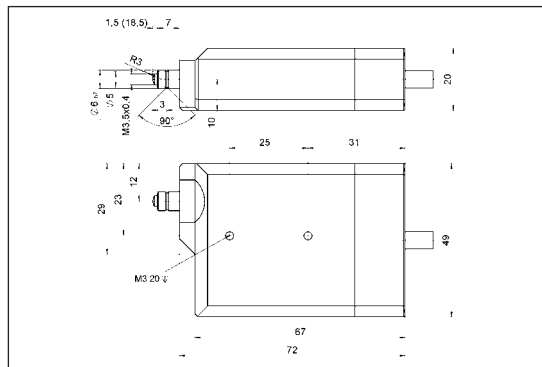
**M-232.17**  
Compact DC-Mike Actuator,  
17 mm, Limit Switches

Ask about custom designs!

### Integrated Line Drivers

Each actuator includes an integral 0.5 m cable with 15-pin sub-D connector and a 3 m extension cable. The connector features integrated line drivers for cable lengths up to 10 meters between actuator and controller.

Stepper-motor-driven versions of the M-232 are available on request. For higher loads and travel ranges refer to the M-230 and M-235 datasheets on pages 7-68 and 7-72.



M-232, dimensions (in mm). Cable length: 500 mm, 15-pin sub-D connector with integrated line drivers.

### Application Examples

- Photonics packaging
- Fiber alignment
- Quality control
- Test equipment
- Metrology

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