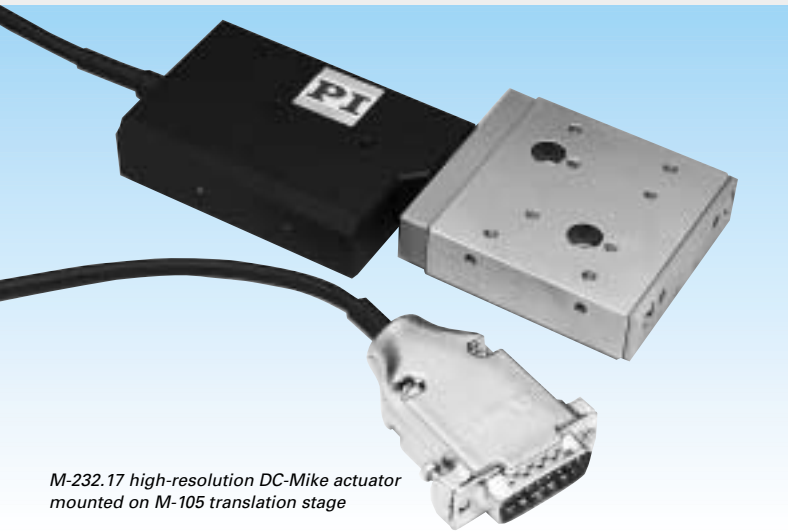


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## M-232

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



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

### Application Examples

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

### Ordering Information

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

**Custom Designs for Volume Buyers**

- **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**

### Technical Data

Models	M-232.17	Units	Notes see p. 7-96
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/sec	
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 range	0 to $\pm 12$	V	
Limit switches	Hall-Effect		
Weight	0.17	kg	
Recommended motor controllers	C-842, C-844, C-860		D2

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 Aligners

The M-232 was especially designed to fit existing manual translation stages (e.g. M-105, M-332) 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.

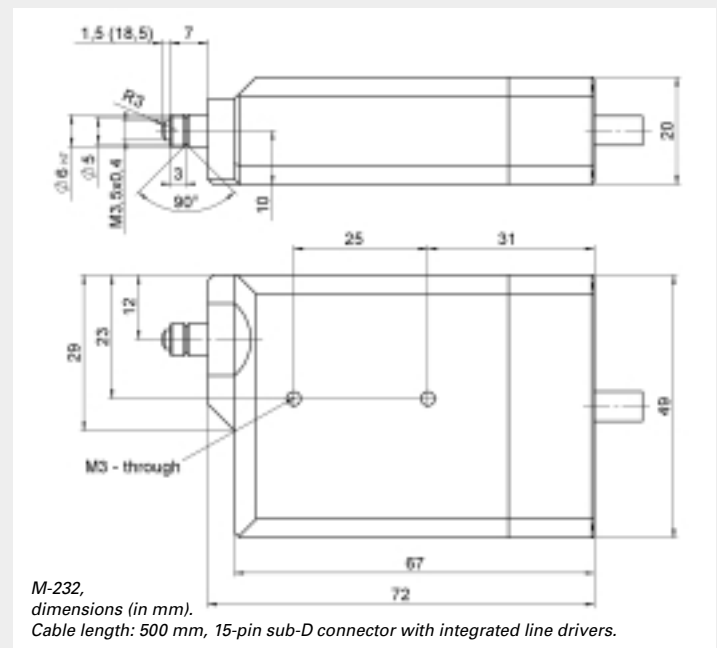
#### Non-Contact Limit and Origin Switches

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

#### 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.