

# M-229 Stepper-Mike Linear Actuator

## Compact & Cost-Effective with Limit Switches, Force up to 50 N



M-229 high-load stepper mike with C-663 Mercury™ Step stepper motor controller

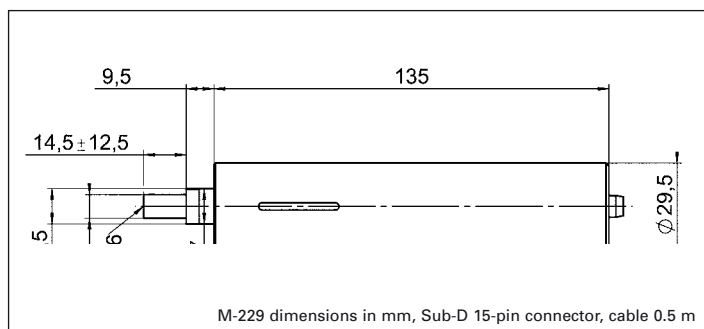
- **Cost-Efficient Design**
- **25 mm Travel Range**
- **46 nm Resolution (with C-663 Controller)**
- **50 N Load Capacity**
- **Non-Rotating Tip**
- **Max. Velocity 1.5 mm/s**
- **Non-Contact Limit and Reference Switches**
- **Compact Design**

M-229 series linear actuators provide a travel range of 25 mm (more than M-228) and are equipped with high-resolution stepper motors with gear-boxes. This means the M-229 mike actuator driven by a C-663 stepper motor controller can push and pull loads up to 50 N with a position resolution of 46 nm. The cost-effective design offers many useful features such as a non-rotating tip, limit and reference switches and a mechanical position display.

### Non-Rotating Tip

Compared to conventional rotating-tip micrometer drives, the non-rotating-tip design offers several advantages:

- Elimination of torque-induced positioning errors
- Elimination of sinusoidal motion errors
- Elimination of wear at the contact point
- Elimination of tip-angle-dependent wobble



M-229 dimensions in mm, Sub-D 15-pin connector, cable 0.5 m

### Limit and Reference Switches

For the protection of your equipment, non-contact Hall-effect limit and reference switches are installed. The direction-sensing reference switch supports advanced automation applications with high precision.

### Ordering Information

**M-229.25S**  
Stepper-Mike Linear Actuator,  
25 mm, Limit Switches

Ask about custom designs!

### Linear Actuators & Motors

PiezoWalk® Motors / Actuators

PILine® Ultrasonic Motors

### DC-Servo & Stepper Actuators

Piezo Actuators & Components

Guided / Preloaded Actuators

Unpackaged Stack Actuators

Patches/Benders/Tubes/Shear..

### Nanopositioning / Piezoelectrics

Nanometrology

Micropositioning

Index

### Technical Data

Model	M-229.25S	Units
Active axes	X	
<b>Motion and positioning</b>		
Travel range	25	mm
Design resolution	0.046*	µm
Min. incremental motion	0.15*	µm
Backlash	10**	µm
Unidirectional repeatability	±2	µm
Max. velocity	1.5*	mm/s
Origin repeatability	1	µm
<b>Mechanical properties</b>		
Drive screw	Leadscrew	
Thread pitch	0.5	mm/rev.
Gear ratio	28.44444:1	
Motor resolution	384*	steps/rev.
Load capacity	50	N
Push/pull force	50	N
Max. lateral force	0.5	N
<b>Drive properties</b>		
Motor type	2-phase stepper motor	
Operating voltage	24***	V
Limit and reference switches	Hall-effect	
<b>Miscellaneous</b>		
Operating temperature range	-20 to +65	°C
Material	Al (anodized), steel, brass	
Mass	0.4	kg
Recommended controller/driver	C-663 single-axis (see p. 4-112)	

\*with C-663 Mercury™ Step controller

\*\*with preload

\*\*\*2-phase stepper motor, 24 V chopper voltage, max. 0.25 A/phase, 24 full steps/rev.