

M-228 Stepper-Mike Linear Actuator

Compact & Cost-Effective with Limit Switches



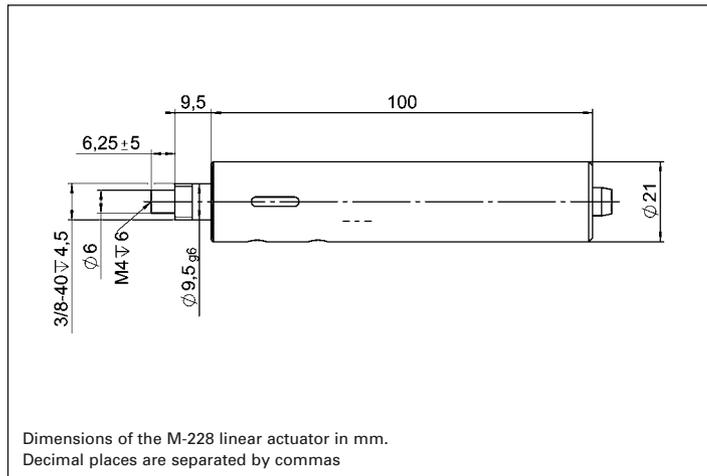
- **Cost-Effective Design**
- **10 mm Travel Range**
- **46 nm Resolution with C-663 Controller**
- **Non-Rotating Tip**
- **Max. Velocity 1.5 mm/s**
- **Non-contact Limit and Reference Switches**
- **Compact Design**

The linear actuators of the M-228 series provide a travel range of 10 mm and are equipped with high-resolution stepper motors with gearbox. Together with the C-663 controller, the M-228 provides a resolution of 46 nm for loads up to 20 N. 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

Ordering Information

M-228.10S
Stepper-Mike Linear Actuator,
10 mm, Limit Switches

Ask about custom designs!

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.

Technical Data

Model	M-228.10S	Units
Active axes	X	
Motion and positioning		
Travel range	10	mm
Sensor resolution		Cts./rev.
Design resolution	0.046*	µm
Minimum incremental motion	0.15*	µm
Backlash	5**	µm
Unidirectional repeatability	2	µm
Accuracy	10	µm
Max. velocity	1.5*	mm/s
Origin repeatability	1	µm
Mechanical properties		
Spindle	Leadscrew	
Spindle pitch	0.5	mm/rev.
Gear ratio	28.44444:1	
Motor resolution	384*	steps/rev.
Max. load	20	N
Max. push/pull force	20	N
Max. lateral force	0.1	N
Drive properties		
Motor type	2-phase stepper motor	
Operating voltage	24***	V
Limit and reference switches	Hall-effect	
Miscellaneous		
Operating temperature range	-20 to +65	°C
Material	Aluminium anodized, stainless steel	
Mass	0.23	kg
Cable length	0.5	m
Connector	Sub-D connector 15-pin	
Recommended controller/driver	C-663 (single-channel) (see p. 4-112)	

*with C-663 stepper motor controller

**preloaded

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