

P-855 Miniature Piezo Actuator

Micrometer-Mountable Open-Loop Piezo Translator



- Displacement 20 μm
- Mounts Inside Micrometer Tip
- Sub-msec Response
- Sub-nm Resolution

P-855 piezo translators are high-resolution linear actuators specially designed for integration in micrometer tips. They fit the M-227 DC-Mike motorized actuators (see p. 1-42), the M-168 Stepper Mike (see p. 1-55) motorized actuators and the M-631 to M-633 manual micrometers (see p. 1-56).

The piezo translators consist of a monolithic PICMA[®] piezo ceramic integrated in a stainless steel housing.

P-855 actuators provide sub-millisecond response and sub-nanometer resolution.

Application Examples

- Laser tuning
- Static and dynamic positioning of small parts
- Fiber positioning

Superior Lifetime with Ceramic-Encapsulated Piezos

Highest possible reliability is assured by the use of award-winning PICMA[®] multilayer piezo actuators. PICMA[®] actuators are the only ceramic-encapsulated PZT actuators on the market, which makes them resistant to ambient humidity and leakage-current failures. They are thus far superior to conventional actuators in reliability and lifetime.

Accessories

Extension cables, adapters & connectors: see in "Accessories" in the "Piezo Drivers / Servo Controllers" (see p. 2-168 ff) section.

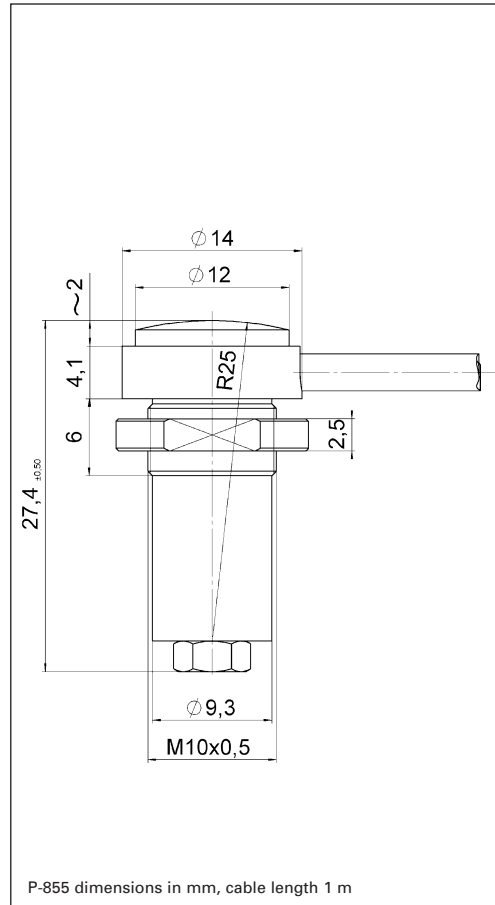
Notes

See the "Piezo Drivers / Servo Controllers" (see p. 2-99 ff) section for our comprehensive line of low-noise modular and OEM control electronics for computer and manual control.

Read details in Mounting and Handling Guidelines (p. 1-67).

Ordering Information

P-855.20
Piezo Actuator for Micrometer Drive



P-855 dimensions in mm, cable length 1 m

Technical Data

Model	P-855.20	Tolerance
Open-loop travel @ -20 to 120 V	20 μm	$\pm 20\%$
*Open-loop resolution	0.2 nm	
**Static large-signal stiffness	48 N/ μm	$\pm 20\%$
Push / pull force capacity	100 / 5 N	
Operating voltage range	-20 to 120 V	
Piezo ceramic type	PICMA [®]	
Electrical capacitance	1.5 μF	$\pm 20\%$
Dynamic operating current coefficient (DOCC)	12.5 $\mu\text{A}/(\text{Hz} \cdot \mu\text{m})$	
Unloaded resonant frequency	18 kHz	$\pm 20\%$
Operating temperature range	-40 bis +80 $^{\circ}\text{C}$	
Voltage connection	VL	
Mass	28 g	$\pm 5\%$
Recommended amplifier	E-610 (p. 2-110) E-500 System (p. 2-142)	

*Resolution of piezo actuators is not limited by friction or stiction.
Noise equivalent motion with E-505 amplifier
**Dynamic small-signal stiffness ~50% higher

Linear Actuators & Motors

PiezoWalk[®] Motors / Actuators

PLLine[®] Ultrasonic Motors

DC-Servo & Stepper Actuators

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Nanometrology

Micropositioning

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