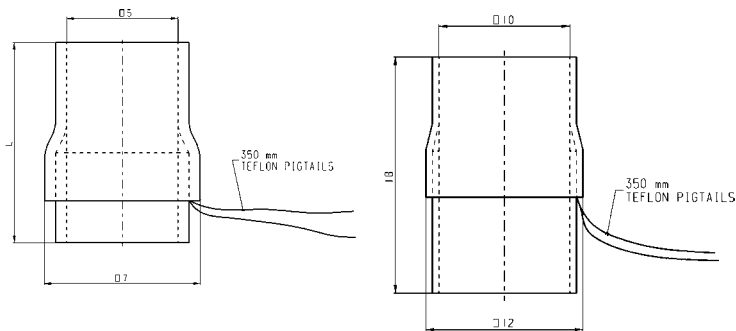
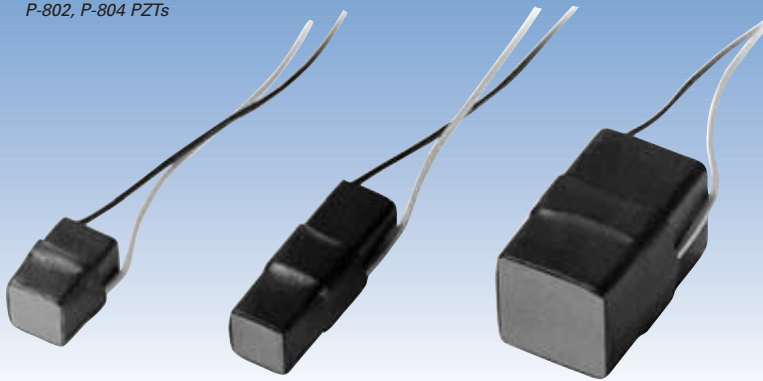


**P-802**  
**P-804**

## Open-Loop LVPZT Translators

>> Click <http://www.pi.ws/fwd/Piezo-Actuator> for the Latest Specs on these Products

P-802, P-804 PZTs



P-802.00 L: 9  
P-802.10 L: 18

802.xx dimensions (in mm)

P-804.10 dimensions (in mm)

### Application Examples

- Static and dynamic positioning
- Fiber alignment
- Laser tuning
- Patch clamping

For more examples see page 1-3

### Ordering Information

#### P-802 and P-804 Open-Loop LVPZT Translators

##### P-802.00

6  $\mu\text{m}$

##### P-802.10

15  $\mu\text{m}$

##### P-804.10

15  $\mu\text{m}$

Custom Designs  
for Volume Buyers

- Displacement to 15  $\mu\text{m}$
- Pushing Forces to 3000 N
- Sub-msec Response
- Sub-nm Resolution

P-802 and P-804 PZT translators are high-resolution linear actuators for static and dynamic applications. They provide sub-millisecond response and sub-nanometer resolution.

These translators consist of highly reliable multilayer PZT ceramics stacks operating in a voltage range of 0 to 100 V. The stacks are covered with epoxy insulation and heat shrink tube for protection and strain relief of the wire leads.

Due to their high resonant frequency, they are ideal for dynamic operation with small loads. For dynamic operation with larger loads, an external preload is recommended. PI offers a variety of preloaded translators for applications with larger tensile forces (see following pages).

Care must be taken during mounting (e.g. with epoxy) and operation, because the translators are not protected by a case or preload (see mounting guidelines on page 1-7).

### Accessories

Extension cables & connectors: see page 6-43 in the "PZT Control Electronics" section.

### Notes

For mounting guidelines see page 1-7.

See "PZT Control Electronics" section for our comprehensive line of low-noise modular and OEM control electronics for computer and manual control.

### Technical Data

Models	P-802.00	P-802.10	P-804.10	Units	Notes see p. 1-41
Open-loop travel @ 0 to 100 V	6	15	15	$\mu\text{m} \pm 20\%$	A2
* Open-loop resolution <	0.06	0.15	0.15	nm	C1
**Static large-signal Stiffness	113	57	220	N/ $\mu\text{m} \pm 20\%$	D1
Push/pull force capacity	1000 / 5	1000 / 5	3000 / 20	N	D3
Electrical capacitance	0.7	1.8	7.2	$\mu\text{F} \pm 20\%$	F1
Dynamic operating current coefficient (DOCC)	15	15	60	$\mu\text{A}/(\text{Hz} \times \mu\text{m})$	F2
Unloaded resonant frequency ( $f_0$ )	55	29	29	$\text{kHz} \pm 20\%$	G2
Standard operating temperature range	-20 to +80	-20 to +80	-20 to +80	$^{\circ}\text{C}$	
Voltage connection	PT	PT	PT		J1
Weight	3	6	24	g $\pm 5\%$	K
Dimensions	7 x 7 x 9	7 x 7 x 18	12 x 12 x 18	mm $\pm 0.5$	
Recommended Amplifier (codes explained p. 6-46)	A, C, H	A, C, H	A, C, H		

\* Resolution of PZT actuators is not limited by friction or stiction. Noise equivalent motion with E-503 amplifier;

\*\* Dynamic small-signal stiffness ~30% higher