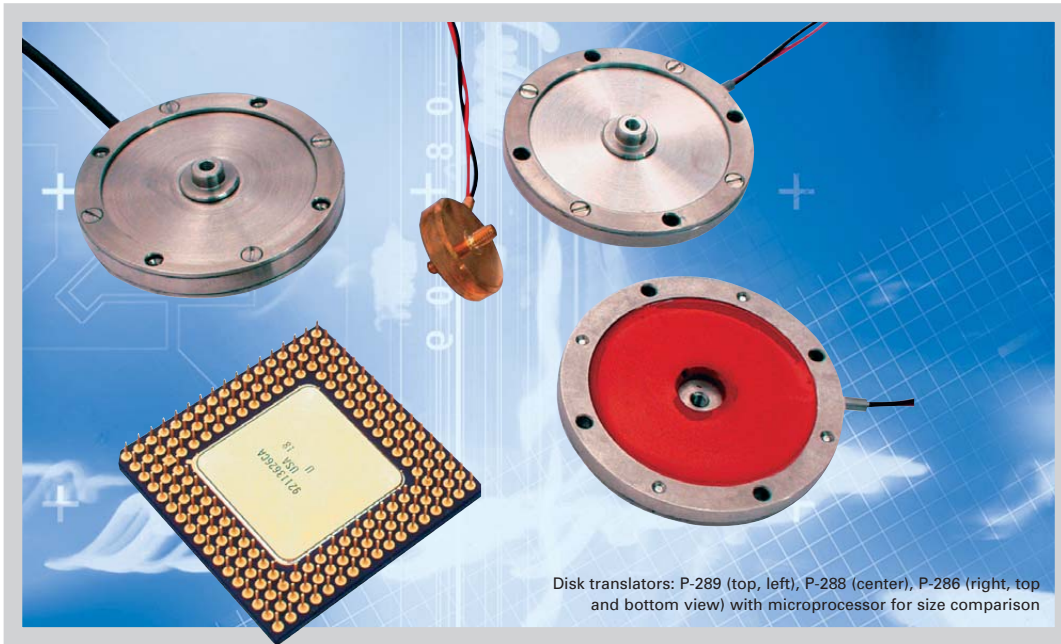


P-286 · P-288 · P-289

Piezo Disk Translators (HVPZT)



Ordering Information	
P-286.20	Disk Translator, 100 μm , 300 mm Teflon Leads
P-286.23	Disk Translator, 100 μm , w/o Top Piece and Silicone Insulation, 300 mm Teflon Leads
P-286.40	Disk Translator, 100 μm , 1 m Coaxial Cable, LEMO Connector
P-288.00	Mini Disk Translator, 50 μm , 300 mm Teflon Leads
P-289.20	Double Disk Translator, 200 μm , 300 mm Teflon Leads
P-289.40	Double Disk Translator, 200 μm , 1 m Coaxial Cable, LEMO Connector

Ask about custom designs!

- Displacement to 200 μm
- Sub-nm Resolution
- Low Cost
- Flat Design

Disk translators belong to the group of bimorph piezo actuators (see "Tutorial: Piezoelectrics in Positioning" section for description of design principle). P-286 to P-289 translators are high-resolution actuators for static and dynamic applications providing fast response and sub-nanometer resolution.

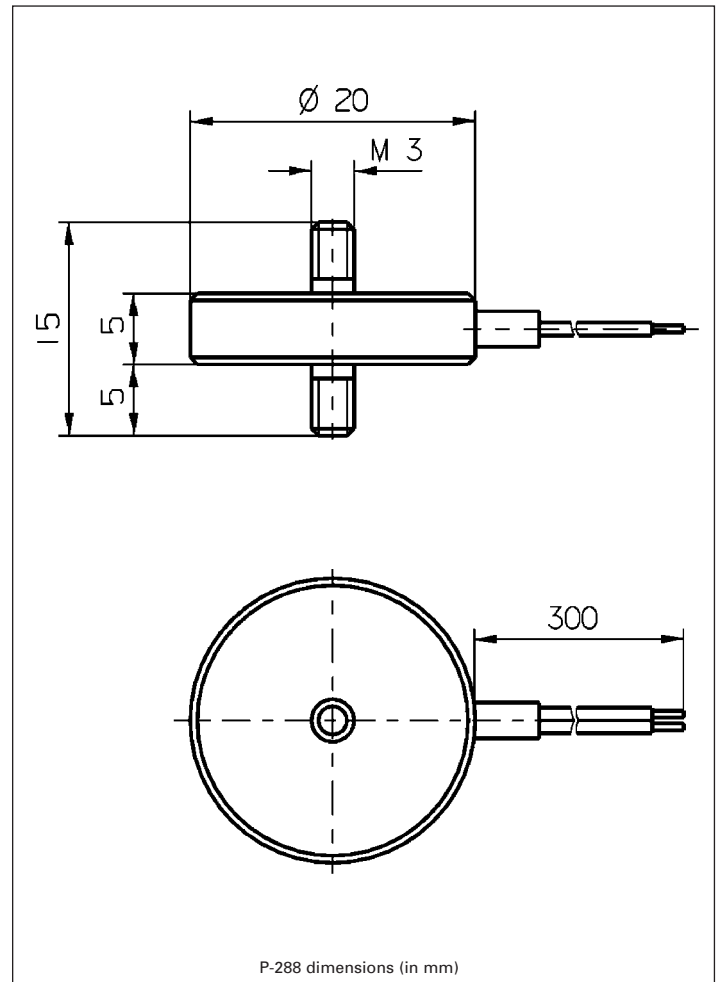
package. The P-286 can be attached to a flat surface with the outer ring. The translator expands via the central tapped connector. P-288 and P-289 are double-disk constructions where the expansion occurs between the two facing tapped connectors.

Accessories

Extension cables & connectors: see page 6-56 in the "Piezo Drivers & Nanopositioning Controllers" section.

Notes

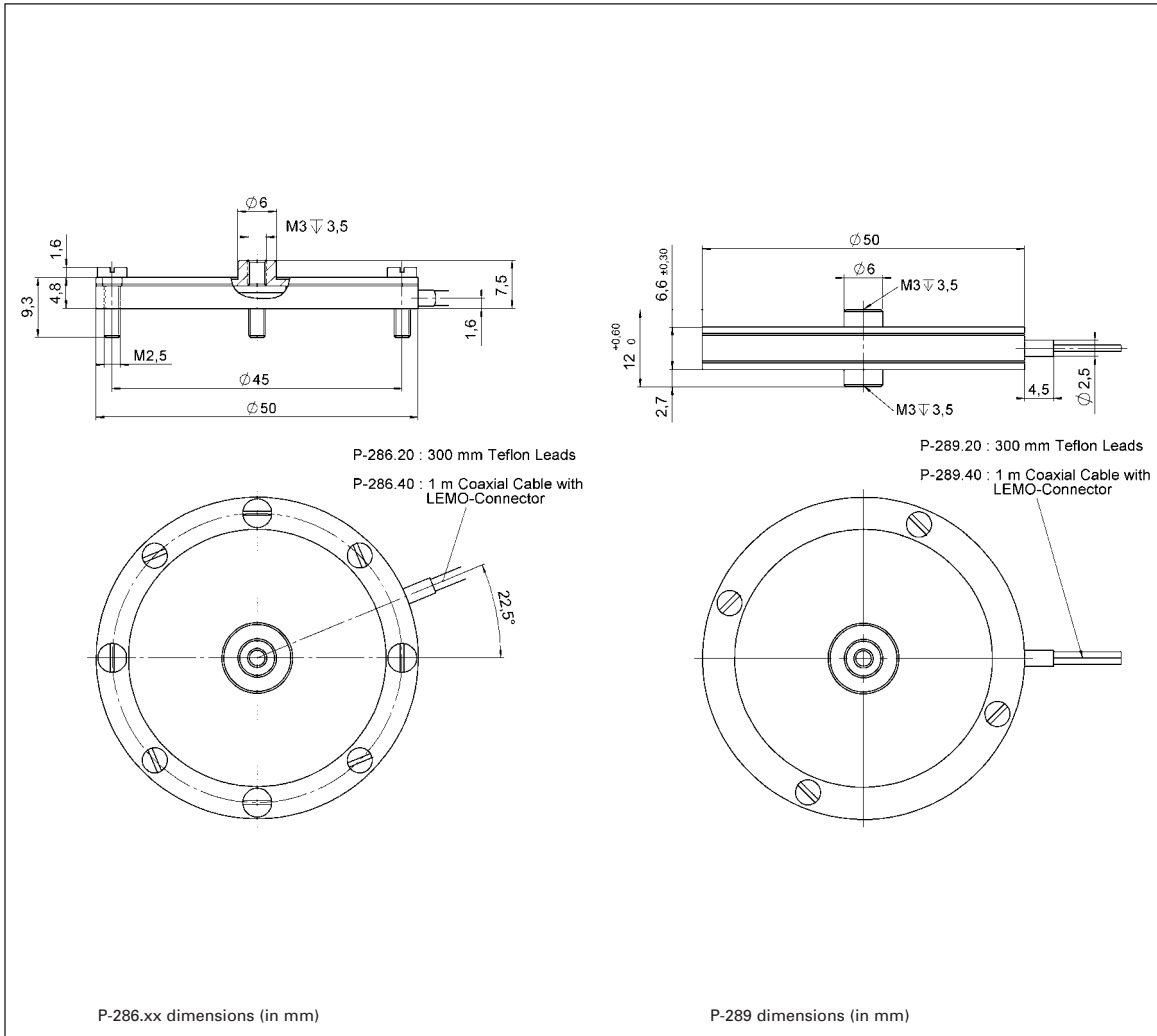
See the "Piezo Drivers & Nanopositioning Controllers" section for our comprehensive line of low-noise modular and OEM control electronics for computer and manual control. For mounting guidelines see page 1-48.



Application Examples

- Static and dynamic positioning
- Pneumatic valves
- Patch clamping

For more examples see page 1-5



Technical Data

Models	P-286.xx	P-288.00	P-289.xx	Units	Notes see page 1-46
Open-loop travel @ 0 to -750 V (P-288), 0 to -1000 V (P-286, P-289)	100	50	200	$\mu\text{m} \pm 20\%$	A4
* Open-loop resolution	1.0	0.5	2.0	nm	C2
**Static large-signal stiffness	0.3	0.2	0.15	$\text{N}/\mu\text{m} \pm 20\%$	D1
Push/pull force capacity	20 / 10	10 / 5	20 / 10	N	D3
Torque limit (at tip)	0.003	0.003	0.003	Nm	D6
Max. operating voltage	-1000	-750	-1000	V	A7
Electrical capacitance	65	9	130	nF $\pm 20\%$	F1
Dynamic operating current coefficient (DOCC)	0.5	0.25	0.5	$\mu\text{A}/(\text{Hz} \times \mu\text{m})$	F2
Unloaded resonant frequency (f_0)	2.5	2	1.1	$\text{kHz} \pm 20\%$	G2
Standard operating temperature range	-40 to +80	-40 to +80	-40 to +80	$^{\circ}\text{C}$	
Voltage connection	see ordering information	see ordering information	see ordering information		J1
Weight	42	8	56	$\text{g} \pm 5\%$	K
Material case / end pieces	N-S	brass	N-S		L
Recommended amplifier/controller (codes explained see page 1-3)	B, I	B, I	B, I		

* Resolution of piezo actuators is not limited by friction or stiction. Noise equivalent motion with E-507 amplifier

** Dynamic small-signal stiffness ~50% higher

Piezo Actuators

Nanopositioning & Scanning Systems

Active Optics / Steering Mirrors

Tutorial: Piezo-electrics in Positioning

Capacitive Position Sensors

Piezo Drivers & Nanopositioning Controllers

Hexapods / Micropositioning

Photonics Alignment Solutions

Motion Controllers

Ceramic Linear Motors & Stages

Index