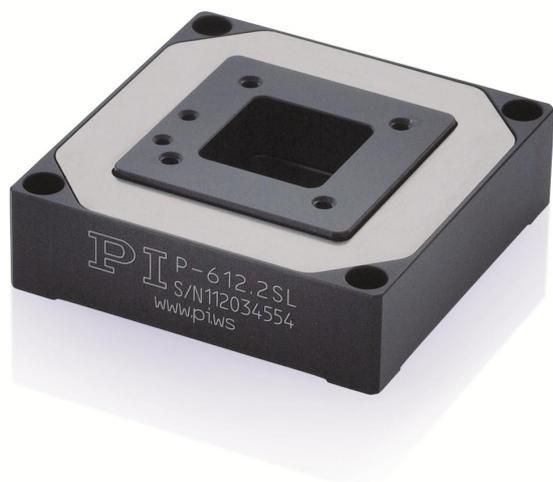


XY Piezo Nanopositioner

Compact, with Aperture



P-612.2

- Compact: Surface 60 mm × 60 mm
- 100 μm × 100 μm closed-loop travel range (130 μm × 130 μm, open loop)
- For cost-critical applications
- Clear aperture 20 mm × 20 mm
- Parallel kinematics for faster response times and higher multi-axis accuracy
- Outstanding lifetime thanks to PICMA® piezo actuators
- Also available as compact version

Application fields

- Scanning microscopy
- High-throughput microscopy
- Super-resolution microscopy
- Mask / wafer positioning
- Interferometry
- Measuring technology
- Biotechnology
- Micromanipulation

Outstanding lifetime due to PICMA® piezo actuators

The PICMA® piezo actuators are all-ceramic insulated. This protects them against humidity and failure resulting from an increase in leakage current. PICMA® actuators offer an up to ten times longer lifetime than conventional polymer-insulated actuators. 100 billion cycles without a single failure are proven.

High guiding accuracy due to zero-play flexure guides

Flexure guides are free of maintenance, friction, and wear, and do not require lubrication. Their stiffness allows high load capacity and they are insensitive to shock and vibration. They work in a wide temperature range.

Motion	Unit	Tolerance	P-612.2SL
Active axes			X, Y
Travel range in X	μm		100
Travel range in Y	μm		100
Travel range in X, open loop, at -20 to 120 V	μm	+20 / -0 %	130
Travel range in Y, open loop, at -20 to +120 V	μm	+20 / -0 %	130
Linearity error	%	Typ.	0.4
Pitch (Rotational crosstalk in θX with motion in Y)	μrad	Typ.	±10
Pitch (Rotational crosstalk in θY with motion in X)	μrad	Typ.	±10
Yaw (Rotational crosstalk in θZ with motion in X)	μrad	Typ.	±10
Yaw (Rotational crosstalk in θZ with motion in Y)	μrad	Typ.	±50

Positioning	Unit	Tolerance	P-612.2SL
Unidirectional repeatability in X	nm	Typ.	±10
Unidirectional repeatability in Y	nm	Typ.	±10
Resolution in X, open loop	nm	Typ.	0.8
Resolution in Y, open loop	nm	Typ.	0.8
Integrated sensor			SGS, indirect position measuring
System resolution in X	nm		5
System resolution in Y	nm		5

Drive Properties	Unit	Tolerance	P-612.2SL
Drive type			Piezo actuator/PICMA®
Electrical capacitance	µF	±20%	1.5

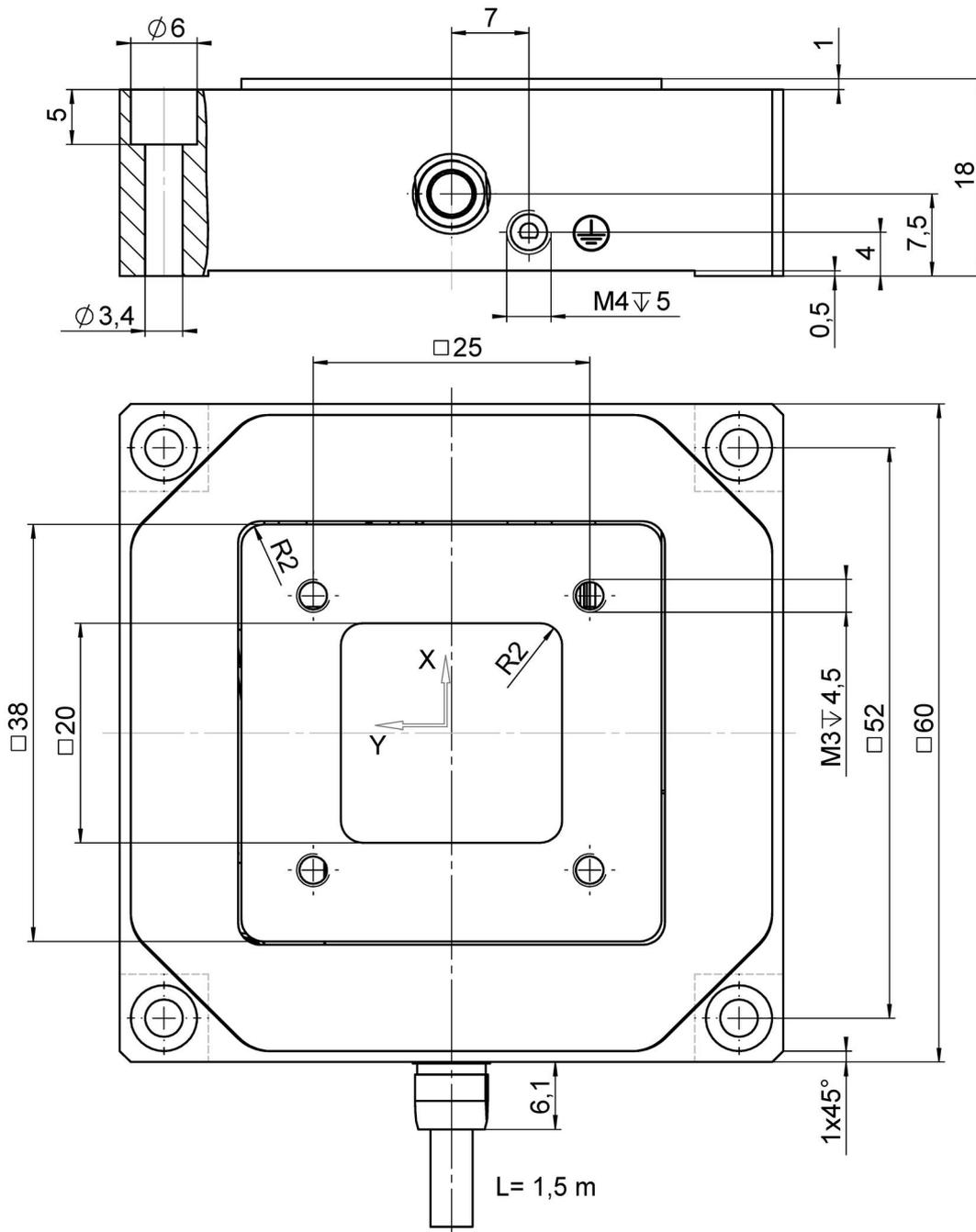
Mechanical Properties	Unit	Tolerance	P-612.2SL
Stiffness in X	N/µm	±20%	0.15
Stiffness in Y	N/µm	±20%	0.15
Resonant frequency in X, unloaded	Hz	±20%	400
Resonant frequency in X, under load with 100 g	Hz	±20%	200
Resonant frequency in Y, unloaded	Hz	±20%	400
Resonant frequency in Y, under load with 100 g	Hz	±20%	200
Permissible push force in X	N	Max.	15
Permissible push force in Y	N	Max.	15
Permissible push force in Z	N	Max.	15
Permissible pull force in X	N	Max.	5
Permissible pull force in Y	N	Max.	5
Guide			Flexure guide/Flexure guide with lever amplification
Overall mass	g	±5%	150
Material			Aluminum, steel

Miscellaneous	Unit	Tolerance	P-612.2SL
Operating temperature range	°C		-20 to 80
Connector			LEMO FFA.00.250.CTAC22
Sensor connector			LEMO FFA.05.304.CLAC32
Cable length	m	±10 mm	1.5
Recommended controllers / drivers			E-503, E-505, E-610, E-621, E-625, E-665

The resolution of the system is limited only by the noise of the amplifier and the measuring technology because PI piezo nanopositioning systems are free of friction.

Ask about customized versions.

Drawings / Images



P-612.2SL, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

Order Information

P-612.2SL

XY piezo nanopositioner; 100 μm \times 100 μm travel range (X \times Y); aperture 20 mm \times 20 mm; SGS, indirect position measuring; LE-MO connectors; 1.5 m cable length