

## PZ 400

### *compact 1-axis translation stage*

#### **Concept:**

The systems of the series PZ are ideally suited for nm-precise positioning of optic components such as mirrors and laser diodes, adjustment and mounting in semiconductor technologies and electronics, and applications in measurement technologies and quality assurance as well as microbiology.

The series PZ consists of a piezo electrical actuator in a stage design with a solid top and bottom plate for easy integration in optical setups.

#### **Specials:**

The systems of this series are available in vacuum and cryogenic temperature configurations. As an option they may come equipped with strain gage or capacitive position sensors, depending on the system configuration, to achieve a very accurate repeatability.

#### **Interfaces:**

The elements of the series PZ are actuators integrated with an inner lever transmission in housing. Since the lever mechanism works in both directions, excessive pressure on the top plate must be avoided. The stage is fixed to a base plate.

Components can be mounted on the top plate by two threaded diagonal holes and can be accurately affixed using the precise pin holes.



image: PZ 400

#### *Product highlights:*

- accurate parallel motion
- up to 400µm motion range
- without mechanical play
- easily combined with other piezo electrical systems
- precision pin holes for accurate adjustment
- high dynamic range

#### *Applications:*

- fiber positioning
- beam alignment
- semiconductor
- micro manipulation

## PZ 400

### Technical data

linear positioning stage	unit	PZ 400	PZ 400 SG
part no.		T-118-00	T-118-01
axes	-	Z	
motion open( $\pm 10\%$ )/closed loop	$\mu\text{m}$	400/ -	400/320
capacitance ( $\pm 20\%$ )**	$\mu\text{F}$	5.2	
resolution (open/closed loop)***	nm	0.8/ -	0.8/8
feed back sensor	-	-	strain gage
typ. repeatability	nm	-	$\pm 5$
typ. non-linearity	%	-	0.06
resonant frequency (unloaded)	Hz	250	
max. push/pull forces	N	80/8	
stiffness	N/ $\mu\text{m}$	0.2	
voltage range	V	-20...130V	
connector (for additional connector configuration please see table below)****	-	LEMO 0S.302	LEMO 0S.302/ODU 4 pin
cable length	m	1	1.2
operating temperature	-	-20°C ... +80°C (-4°F ... 176°F)	
material	-	Aluminum/Stainless Steel	
dimensions (LxWxH)	mm	52x48x28.5	
weight	g	155	175

\* typical value measured with NV 40/3 amplifier (closed loop: NV 40/3 CLE amplifier )

\*\* typical value for small electrical field strength

\*\*\* The resolution is only limited by the noise of the power amplifier and metrology.

\*\*\*\* additional connector configurations

Product name	Description	Specials	Part. No Suffix.
PZ 400 SG Digital	Version for digital controller series d-Drive and 30DV50 in combination with additional functionalities: Interchangeability, ASI, ASC	Connector Sub-D 15	T-118-01D
PZ 400 SG Extern	Version with sensor pre-amplifier for the use with „CLE“ amplifier units and with the additional functionalities: Interchangeability, ASI	Connector Sensor: ODU 4pin	T-118-01E

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