

PZ 16 CAP

compact 1-axis translation stage

Concept:

The systems of the series PZ 16 CAP are ideally suited for sub-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. With a travel range of 16µm only, the system reaches a superior positioning resolution. The PZ 16 CAP fulfills the highest demand in accuracy in combination with an integrated closed loop system.

Specials:

The PZ 16 CAP is equipped with a high resolution capacitive feed back sensor. The position is controlled by direct metrology. So the PZ 16 CAP achieves outstanding parameters for positioning accuracy and repeatability.

The systems of this series are available in vacuum and cryogenic temperature configurations.

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 threaded holes and can be accurately affixed.



image: PZ 16 CAP

Product highlights:

- accurate parallel motion
- up to 16µm motion range
- without mechanical play
- easily combined with other piezo electrical systems
- threaded holes for easy mounting of components
- high dynamic range

Applications:

- fiber positioning
- beam alignment
- semiconductor
- micro manipulation

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Technical data

linear positioning stage	unit	PZ 16 CAP
part no.		T-102-16
axes	-	Z
motion open(±10%)* / closed loop	µm	22 / 16
capacitance (±20%)**	µF	14.0
resolution (open/closed loop)***	nm	0.04 / 0.4
feed back sensor	-	capacitive
typ. repeatability	nm	±2.5
typ. non-linearity	%	0.003
resonant frequency (unloaded)	Hz	640
voltage range	V	-20...130V
connector (for additional connector configuration please see table below)****	Voltage	LEMO 05.302
connector (for additional connector configuration please see table below)****	Sensor	LEMO 05.650
cable length	m	1.6
operating temperature	°C	+5°C ... +35°C
material	-	Aluminum/Stainless Steel
dimensions (LxWxH)	mm	45x45x30
weight	g	245

* 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 16 CAP Digital	Version for digital controller series d-Drive and 30DV50 in combination with additional functionalities: Interchangeability, ASI, ASC	Connector Sub-D 15	T-102-16D
PZ 16 CAP 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-102-16E

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