piezosystemjena
incredibly precise

PX 100

compact 1-axis translation stage

image: PX 100 CAP

Concept:

The systems of the series PX 100 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 PX consist of piezo electrical actuator in stage design with a solid top and bottom plate for easily integration in optical setups. The monolithic flexure hinges design offers high precision motion range, high stiffness and in due of this excellent dynamical performance for extremely fast and accurate positioning tasks

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 very accurate repeatability in the low nanometer range.

Interfaces:

The elements of the series PX are actuators integrated with an inner lever transmission in housing. Since the lever mechanism works in both directions, pulling forces between bottom and top plate need to be avoided, as they could damage the stage. 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.

Product highlights:

- accurate parallel motion
- up to 120µm motion range
- without mechanical play
- easily combined with other piezo electrical systems
- precison pin holes for accurate adjustment
- high dynamic range

Applications:

- fiber positioning
- beam alignment
- semiconductor
- micro manipulation

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PX 100

Technical data:

linear positioning stage	unit	PX 100	PX 100 SG	PX 100 CAP
part no.		T-104-00	T-104-01	T-104-66
axis	-	X	X	X
motion in open(±10%)/closed loop (±0.2%)*	µm	100/ -	100/80	120/100
capacitance (±20%)**	µF	1.8	1.8	1.8
resolution (open/closed loop)***	nm	0.2/ -	0.2/2	0.2/1
integrated measurement system	-	-	strain gage	capacitive
typ. repeatability	nm	-	±4	±1
typ. non-linearity	%	-	0.02	0.01
resonant frequency (unloaded)	Hz	790	790	790
max. push/pull forces	N	150/15	150/15	150/15
stiffness	N/µm	1.5	1.5	1.5
voltage range	V	-20…130V	-20…130V	-20…130V
connector (additional variation please see table below) ******	-	LEMO 0S.302	LEMO 0S.302/ LEMO 0S.304	LEMO 0S.302/ LEMO 0S.650
cable length	m	1	1.2	1.6
min. bend radius of cable	mm	15	15	15
temperature range	°C	-20°C … +80°C	-20°C … +80°C	-20°C … +80°C
material	-		aluminum/stainless steel	
dimensions (LxWxH)	mm	40x40x20	40x40x20	40x40x20
weight	g	85	90	125

* 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.
PX 100 CAP Digital	Version for digital controller series d-Drive and 30DV50 in combination with additional functionalities: Interchangeability, ASI, ASC	Connector Sub-D 15	T-104-66D
PX 100 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-104-01E

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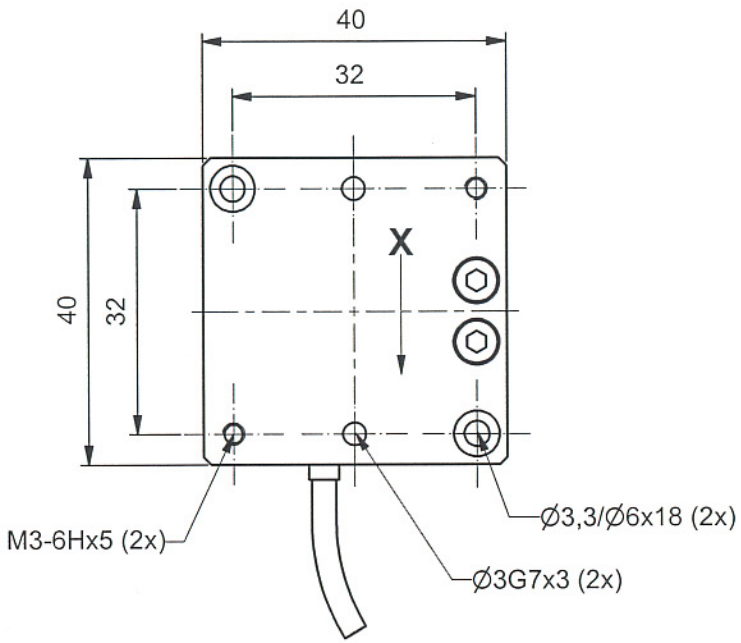
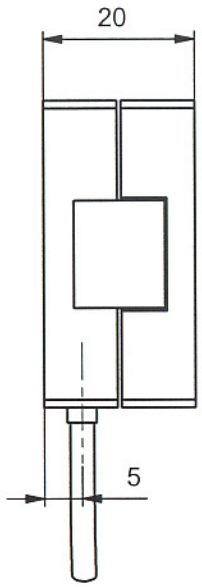
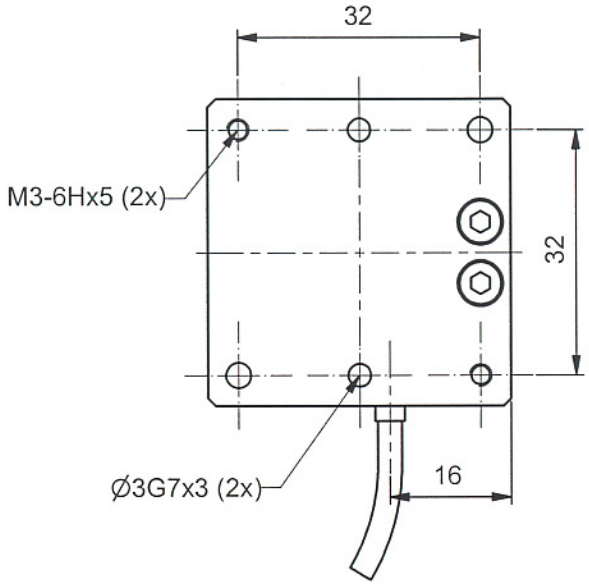
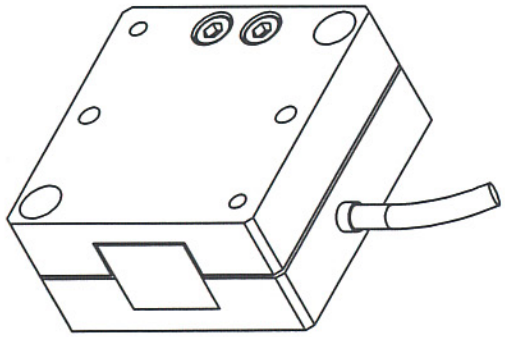
TOP VIEW





BOTTOM VIEW





ORIGINAL

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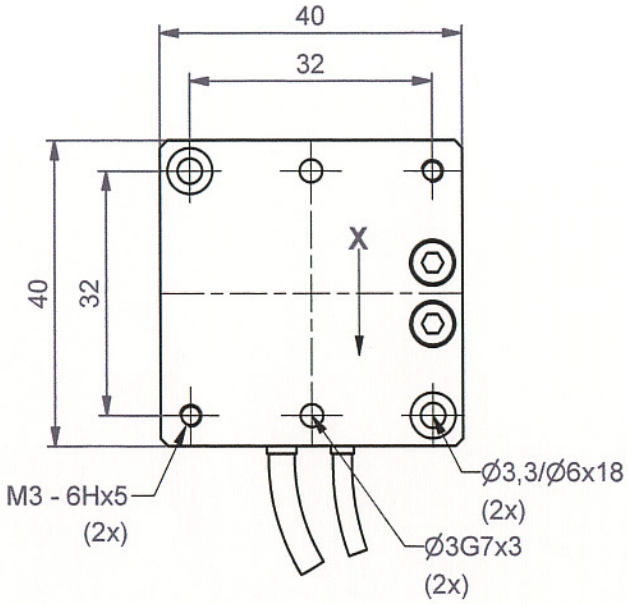

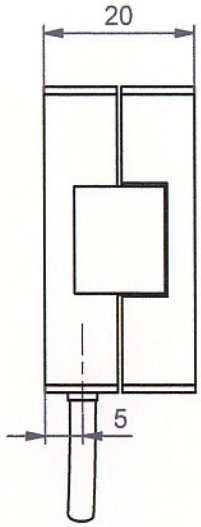

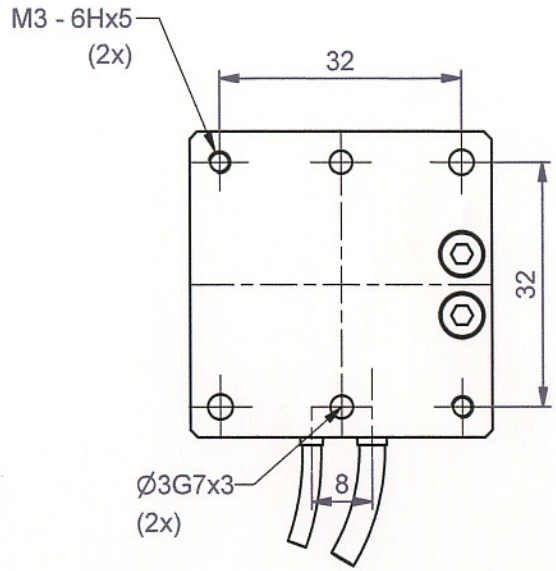

ORIGINAL

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PT10401		
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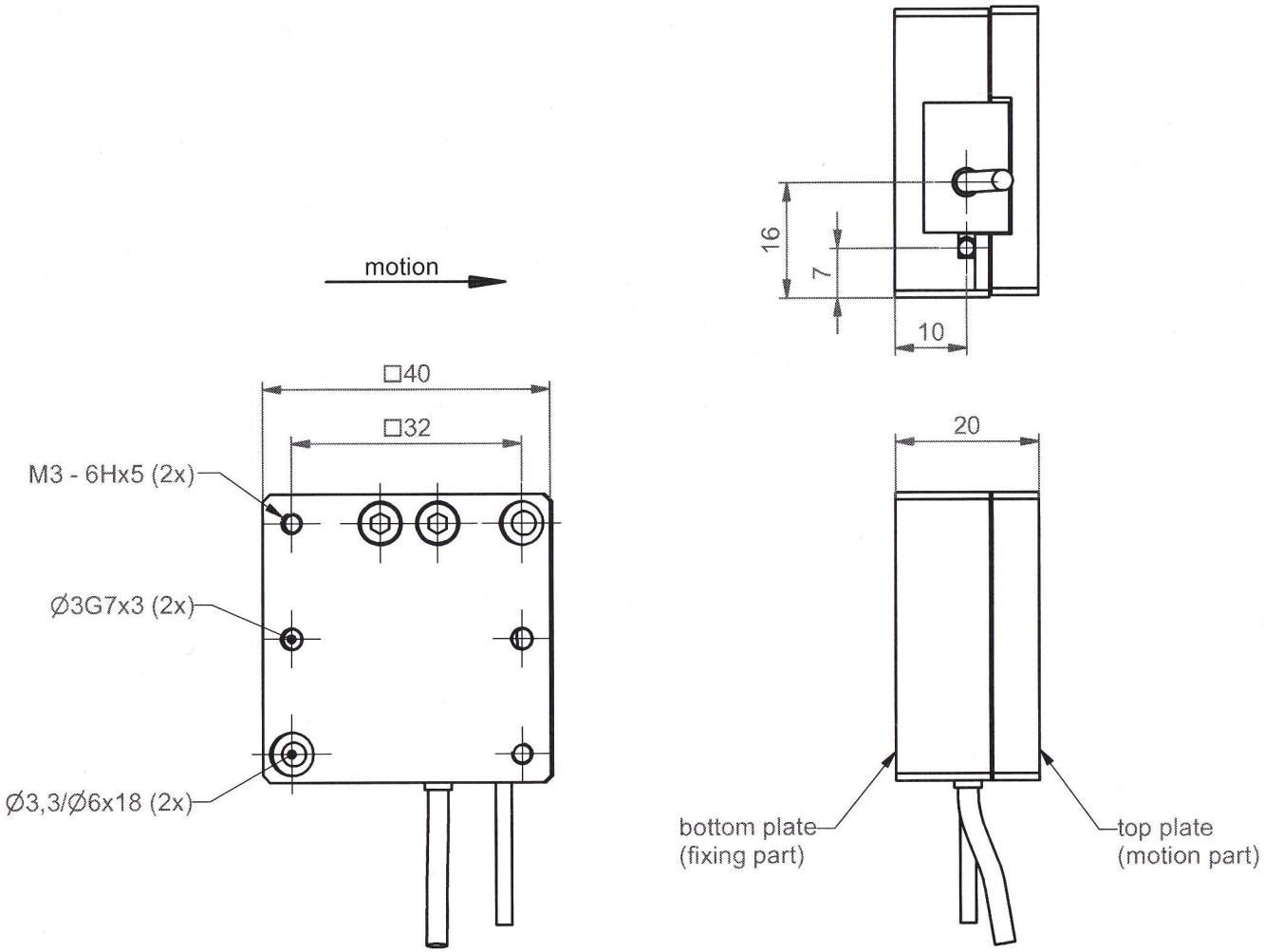

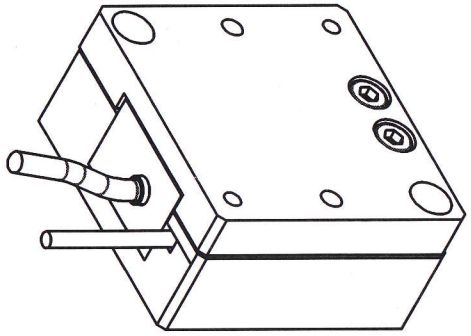

ORIGINAL

cable length:
standard -> 1,6m
EXT/DIG -> 2m (with external sensor-pre-ampifier)

part.-no.		part.-name
T-104-66		PX 100 CAP
file name		OK: date/sign.
PT10466	rev. 1	18. APR. 2012
	scale	customers drawing
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