piezosystemjena
incredibly precise

compact 1-axis translation stages

series PZ 38 to PZ100

- **accurate parallel motion by parallelogram design**
- **motion without mechanical play because of solid state hinges**
- **motion up to 100µm**
- **easily combined with other piezo electrical systems**
- **precision pin holes for accurate adjustment**
- **resonant frequency up to 760Hz**
- **available with positioning sensor**

fig.: PZ 100

applications:

- fiber positioning, laser optics
- scanning systems
- micro manipulation

Concept

The series PZ 38 and PZ 100 consists of flexure hinges guided systems. Therefore these systems are ideally suited for nm-precise positioning of optic components such as mirrors and laser diodes, adjustment and mounting in semi-conductor technologies and and metrology applications. Based on their design they are pre-loaded and can used dynamical.
The pattern distance of 20mm (series PZ 38) and 32mm (series PZ 100) is made for an easy mounting of additional components.

Specials

The systems of this series are available in vacuum and cryogenic temperature configurations.
As an option the PZ 38 and PZ 100 may come equipped with strain gage sensors and the PZ 100 as well with capacitive position sensors.
The systems can easily achieve repeatability in nm-range, depending on their configuration.

Mounting/Installation

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.

technical data:

series PZ		unit	PZ 38	PZ 100
part no.		-	T-102-00	T-105-00
axes		-	z	
motion open loop (±10%)*		µm	38	100
capacitance (±20%)**		µF	0.7	1.8
resolution***	open loop	nm	0.08	0.2
resonant frequency		Hz	760	660
stiffness		N/µm	1	0.77
max. push force		N	38	77
max. pull force		N	4	8
voltage range		V	-20…130V	
connector****	voltage	-	LEMO	
cable length		m	1	
min. bend radius of cable		mm	>15	
material		-	stainless steel; top and bottom plate made of anodized Al	
dimensions (l x w x h)		mm	25x25x18	40x40x20
weight		g	40	85
series PZ with integrated measurement system SG-sensor			**PZ 38 SG**	**PZ 100 SG**
part no.			T-102-01	T-105-01
motion closed loop (±0,2%)*		µm	32	80
integrated measurement system			strain gage	
resolution***closed loop		nm	0.7	2.0
typ. repeatability		nm	6	10
max. push force		N	38	77
max. pull force		N	4	8
connector****	sensor		LEMO 0S.304	
cable length		m	1.2	
dimensions (l x w x h)		mm	40x40x25	40x40x20
weight		g	77	95
series PZ with integrated measurement system CAP-sensor			**PZ 38 CAP**	**PZ 100 CAP**
part no.			T-102-06	T-105-06
motion closed loop (±0,2%)*		µm	32	80
integrated measurement system			capacitive	
resolution***closed loop		nm	0.7	1.0
typ. repeatability		nm	4	7
max. push force		N	38	77
max. pull force		N	4	8
connector****	sensor		LEMO 0S.650	
cable length		m	1.6	
dimensions (l x w x h)		mm	32x25x22	40x40x32
weight		g	100	140

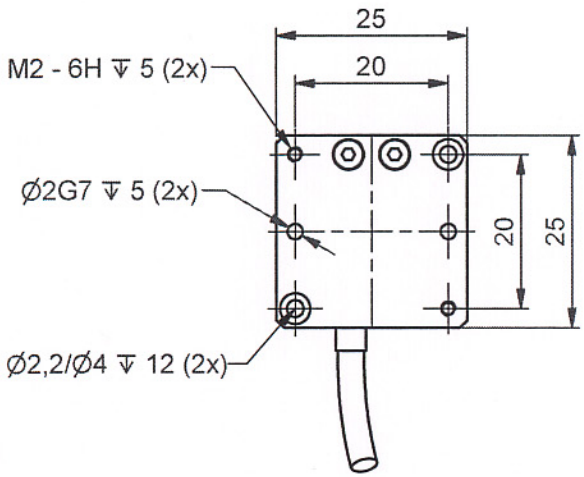
* typical value measured with NV 40/3 amplifier (closed loop: NV 40/3 CLE amplifier)
** typical value for small electrical field strength
*** The resolution of piezoelectrical actuators is nearly unlimited.
Only the noise of the power amplifier and metrology shows an influence.
****The type of connector might be changed according to the chosen controller unit.
Details are given in the order confirmation.

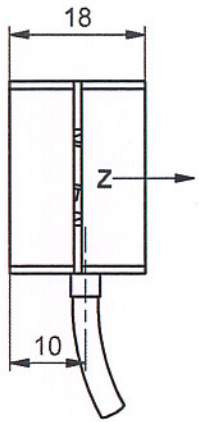
option:

- vacuum version
- cryogenic version
- other modification (e.g. body material) upon request

Please pay attention to our "notes for mounting", which are available as download on our homepage.

top





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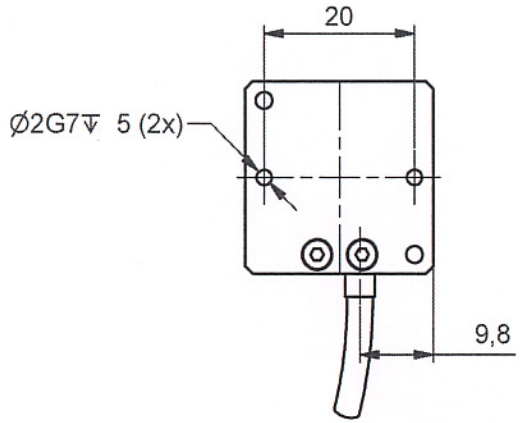

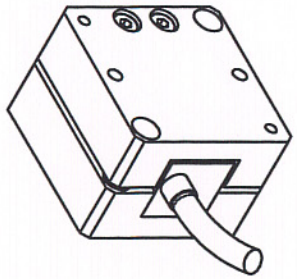

Cable 1m
Connector LEMO 2 pins

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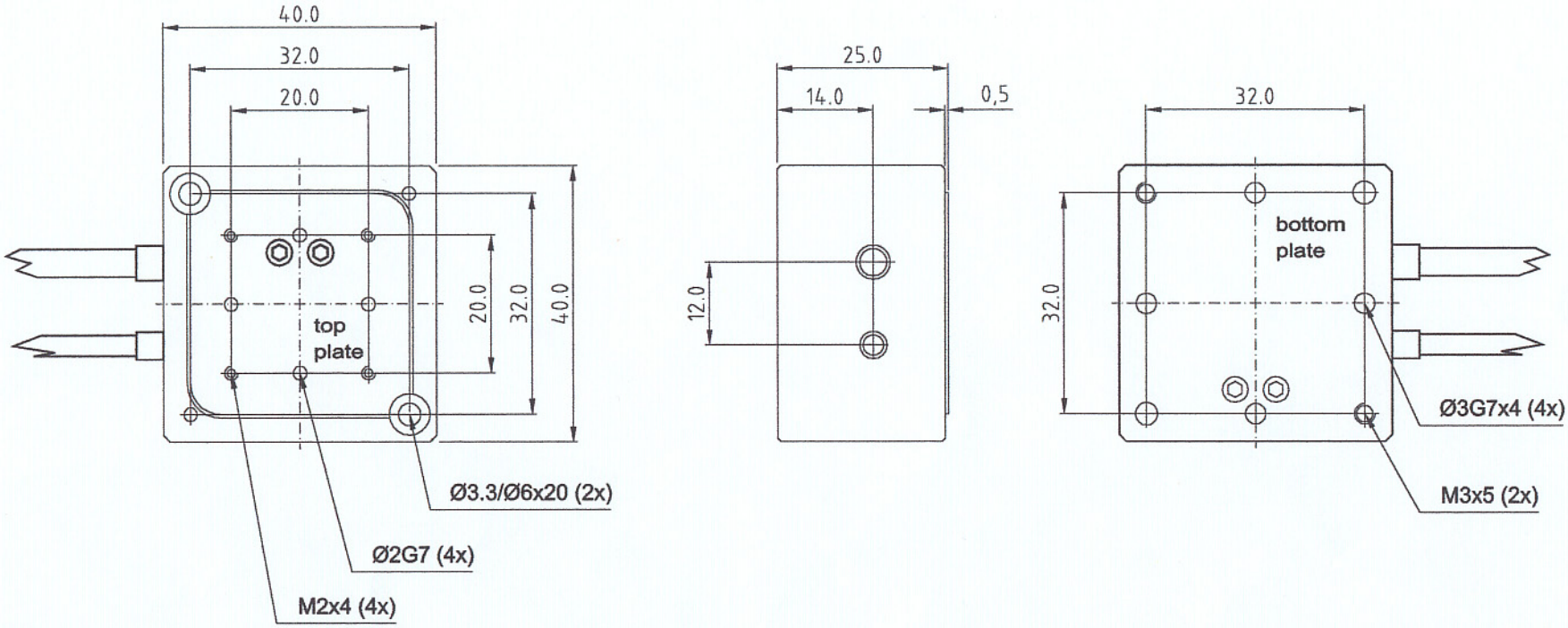
PT10200		05. JUNI 2008
	scale	customers drawing
	1.1	*piezosystem jena*

ORIGINAL



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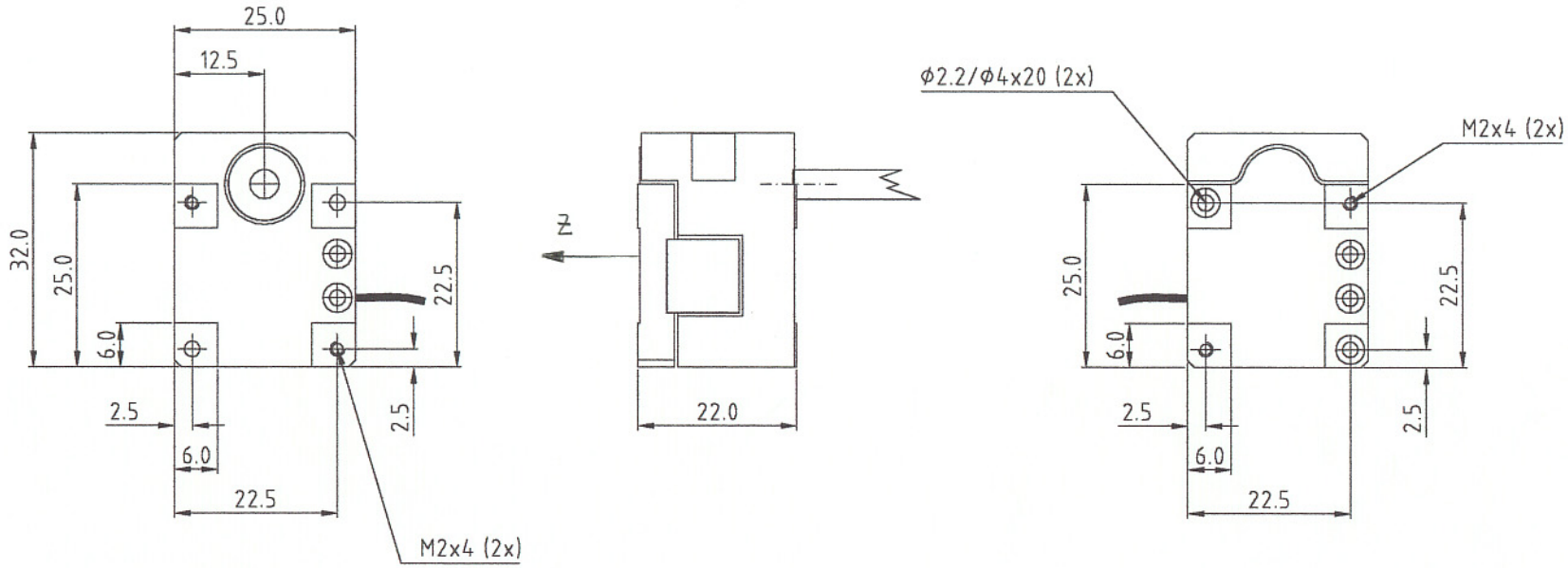

Bottom

Top

ORIGINAL

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date: 18. DEZ. 2000	OK / Sign.
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