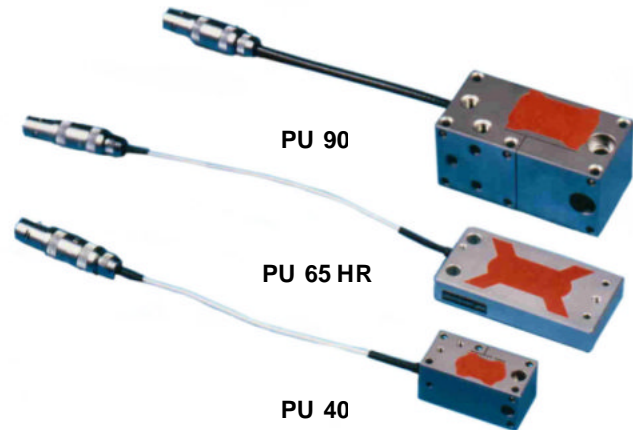


## series PU

- high mechanical stability because of high stiffness
- able to move up to a 60 kg mass
- accurate parallel motion because of parallelogram construction
- motion without mechanical play
- high resolution in nm and sub nm range
- integrated lever transmission
- motion up to 108  $\mu\text{m}$
- xy and xyz configurations are possible
- precision pin holes allow precision mounting



### applications:

- universal application for 1D, 2D and 3D systems
- mechanical engineering, precision tool making
- automation

PU translators consist of only one metallic part. That means that they show excellent mechanical stability and, because they are pre-loaded, can work dynamically. These actuators can support loads up to 600 N and, and generate single axis motion from 40 to 100 microns.

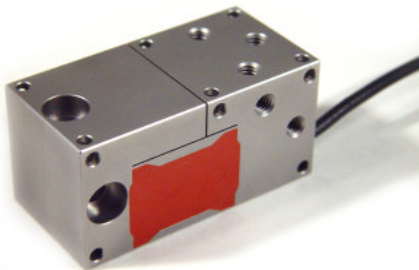
A special translator, the PU 65 HR, is optimized to have a high

series PU part no.	unit	PU 40 T-506-00	PU 90 T-501-00	PU 100 T-502-00	PU 100 HL T-503-00	PU 65 HR T-509-00
motion ( $\pm 10\%$ )**	$\mu\text{m}$	40	90	100	108	65
combinable up to 3 axes		yes	yes	yes	yes	no
max. voltage	V	150	150	150	150	150
capacitance ( $\pm 20\%$ )***	nF	700	1700	3400	6700	1700
resolution open loop*	nm	0.075	0.16	0.18	0.18	0.12
resonant frequency	Hz	1270	350	390	510	1320
stiffness	N/ $\mu\text{m}$	0.8	1.5	1.7	2.4	0.75
force generation	N	32	135	170	250	50
max. load	N	100	150	300	600	20
connector		LEMO OS. 302	LEMO OS. 302	LEMO OS. 302	LEMO OS. 302	LEMO OS. 302
weight	g	27	72	72	174	28
dimensions						
	length L	mm	28.5	50.5	50.5	50.5
	width B	mm	14	25	25	25
	height H	mm	14	25	25	25
C	mm	10	20	20	20	-
E	mm	8	15	15	15	-
J	mm	4	5	5	5	-
M	mm	M2 x 3	M4 x 6	M4 x 6	M4 x 6	-
N	mm	$\varnothing 2.67 \times 4$	$\varnothing 2.5G7 \times 4$	$\varnothing 2.5G7 \times 4$	$\varnothing 2.5G7 \times 4$	-
P	mm	$\varnothing 2.2 / \varnothing 4 \times 4$	$\varnothing 4.4 / \varnothing 8 \times 4$	$\varnothing 4.4 / \varnothing 8 \times 4$	$\varnothing 4.4 / \varnothing 8 \times 4$	-

- \* measured with E-103-18 amplifier
- \*\* typical value measured with -10V to 150V
- \*\* typical value for small electrical field strength

**PU with integrated measurement system:**

series PU with integrated measurement system part no.	unit	PU 40 SG T-506-01	PU 90 SG T-501-01	PU 90 CAP T-501-06	PU 100 SG T-502-01	PU 100 HL SG T-503-01	PU 100 CAP T-502-06	PU 100 HL CAP T-503-06
motion** open loop	µm	40	90	90	100	108	100	100
closed loop	µm	32	72	72	80	86	80	80
dimensions	-	(PU 40)	(PU 90)	see drawing	(PU 100)	(PU 100)	see drawing	see drawing
non-linearity**	%	0.17	0.33	0.07	0.08	0.2	0.04	0.11
repeatability**	nm	33	132	31	28	26	8	30

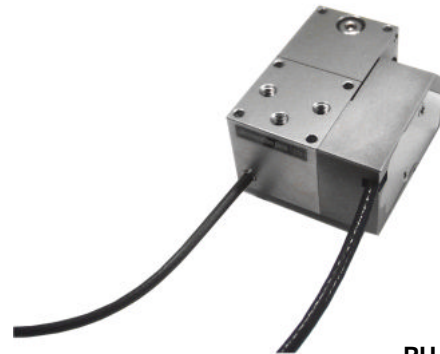


**specifications:**

operating voltage: -10 to +150 V  
 temperature range: -20 to 80 °C  
 housing: stainless steel/ aluminium  
 connector: LEMO  
 cable length: 1 m

**options:**

- integrated measurement systems for closed loop control (strain gauge, accurate to typically better than 0.2%, capacitive typ. 0.05%), repeatability 8-35 nm
  - other materials (nonmagnetic stainless steel; anodized aluminum; titanium)
  - application for vacuum and low temperature
- Other modification available upon request.



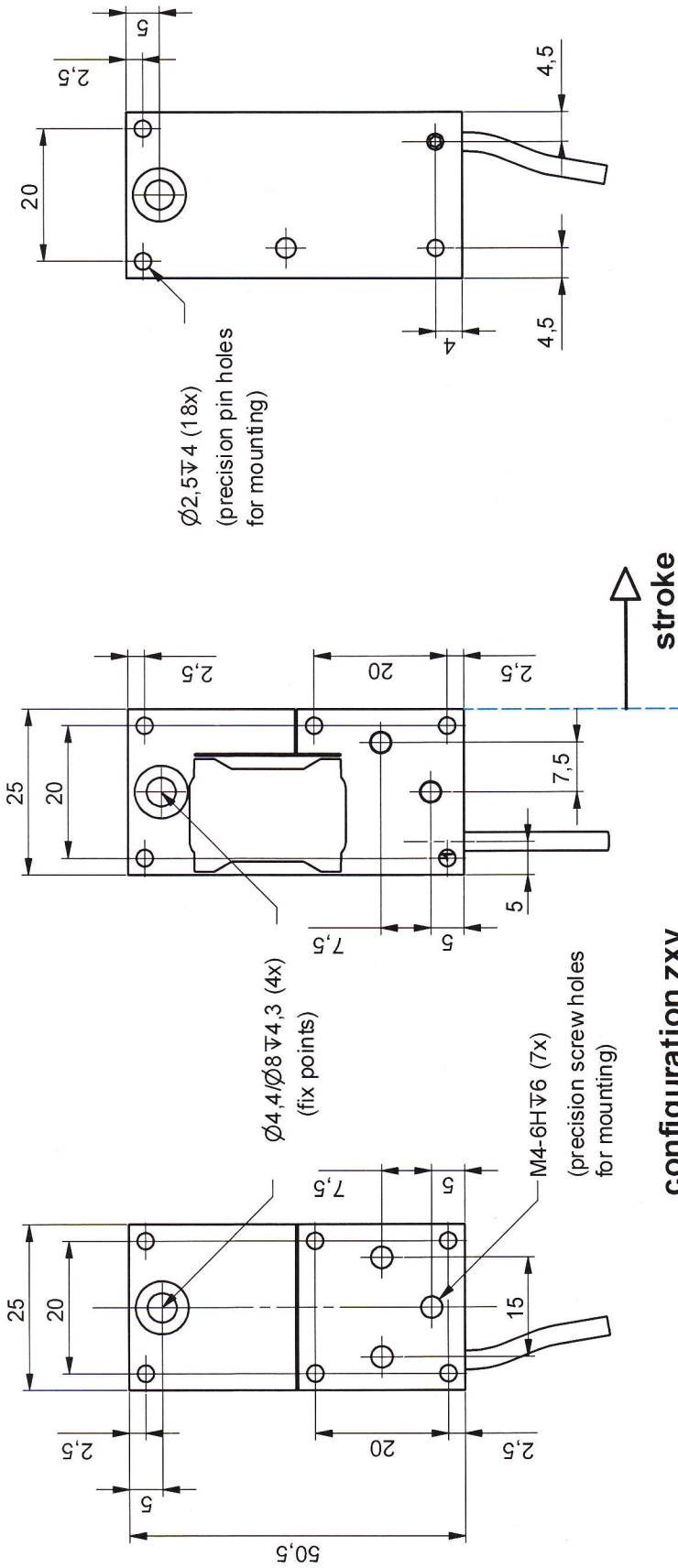
**PU 100 CAP**

**PU XYZ configurations:**

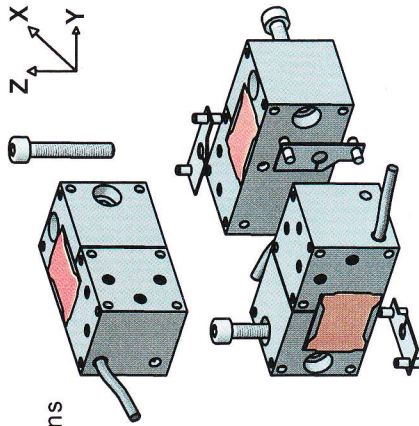
series PU XYZ part no.	PU XYZ 40 T-507-00	PU XYZ 90 T-504-00	PU XYZ 100 T-505-00
motion in xyz (±10%)** in µm	100 x 100 x 100	90 x 90 x 90	100 x 100 x 100

\*\* typical value measured with -10V to 150V

PU xyz 100 with strain gauge measurement systems available upon request.

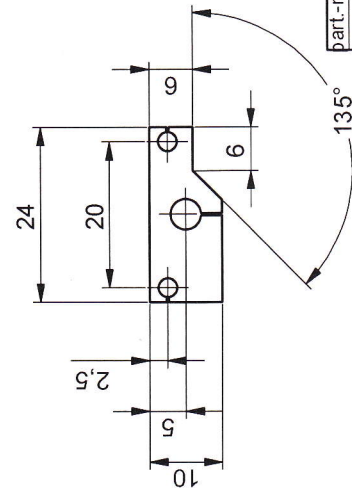
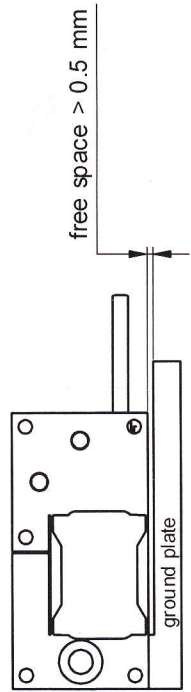


### configuration zxy



translator can be combined in XY, XZ, and XYZ configurations (catalog part-no.: T-504-00 / T-505-00)

please note that there must be a space between the translators and the plate onto which it is fixed, otherwise the movement will be hindered and the actuator can be destroyed



distance plate for attachment can be mounted on different positions  
thickness 0.5 mm

**ORIGINAL**

This drawing is valid for part-no.:  
T-501-00 PU 90  
T-502-00 PU 100  
T-503-00 PU 100 HL

part.-no.	T-50x-00	part.-name	PU 90 / 100 (HL)
file name	PT50x00	OK: date/sign.	23. NOV 2010
		rev.	01
		scale	1:1
		customers drawing	piezosystem jena