

PU 40

Compact 1-Axis Translation Stage



Motion up to 40 μm



Accurate parallel motion by parallelogram design



High resolution in nm and sub-nm range



XY and XYZ configurations are possible



The PU 40 consists of only one metallic part that allows for excellent mechanical stability and the ability for it to work dynamically.

This translation stage shows a nearly linear motion by an applied voltage signal from -20 up to 130 V.

This stage can be combined for X, Y, Z 3D motion systems. The basic flexure stage is equipped with the threads for mounting. Each piezo system is supplied with the necessary screws and parts for a multi-axis configuration.

Variants:

- PU 40
- PU 40 SG
- PU XYZ 40

Recommended Controller:

NV40/3*



E-101-20

*) Suitable for open-loop system. NV 40/3 CLE recommended for closed-loop.

Applications

- Universal application for 1D, 2D, and 3D systems

PU 40

Technical Data

PU Series		Unit	PU 40	PU 40 SG	PU XYZ 40****
Part no		-	T-506-00	T-506-01	T-507-00
Combinable up to 3-axes		-	yes	yes	-
Motion	Open-loop ($\pm 10\%$)*	μm	40	40	40 x 40 x 40
	Closed-loop ($\pm 0.2\%$)*		-	32	32 x 32 x 32
Capacitance ($\pm 20\%$)**		μF	0.7	0.7	Specification of a single axis is mentioned for PU 40 (part. no. T-506-00) already. This unit consist of 3 single actuators mounted together.
Feedback sensors		-	-	strain gauge	
Resolution*	Open-loop*	nm	0.08	-	
	Closed-loop*		-	0.8	
Resonant frequency		Hz	1270	1270	
Typ. repeatability		nm	-	33	
Stiffness		$\text{N}/\mu\text{m}$	0.8	0.8	
Max. push force		N	32	32	
Max. pull force		N	3	3	
Voltage range		V	-20 ... +130	-20 ... +130	
Connector		-	LEMO	LEMO ODU	
Cable length		m	1	2	
Material		-	stainless steel		
Dimension (l x w x h)		mm	28.5 x 14 x 14	28.5 x 14 x 14	
Weight		g	27	27	105

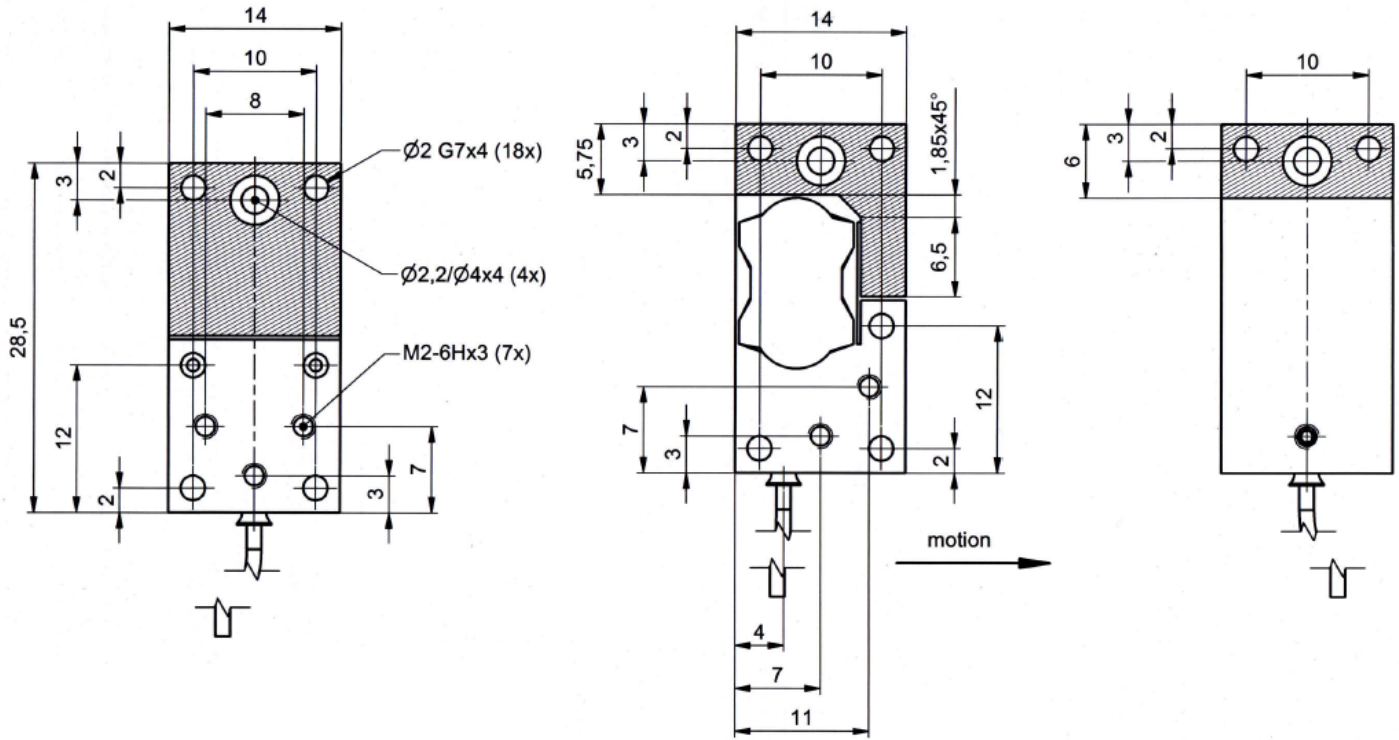
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* typical value measured with NV 40/3 amplifier and the resolution is only limited by the noise of the power amplifier and metrology.

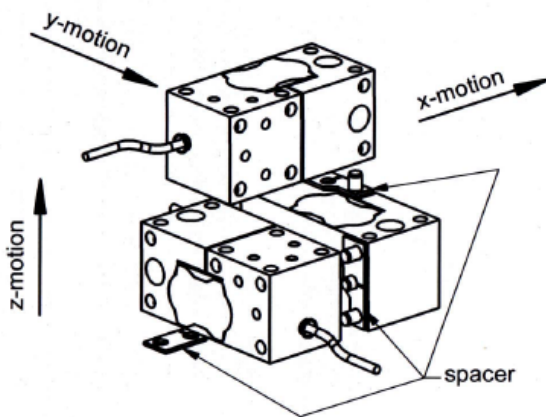
** typical value for small electrical field strength

PU 40

Part Drawing



M 1 : 1
zxy-configuration



translators can be combined in various configurations
(see example)

Please note! There must be a gap (≥ 0.5 mm) between the translators and between the translator and its mounting point too, otherwise the movement will be hindered and the actuator may be destroyed. Use the spacers!

Dimensions given in mm.

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