

# Precision Piezo Stage | PPS-28

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The PPS-28 is a high-precision, long travel linear piezo stage. Miniature crossed roller bearings assure high stiffness and guiding accuracy for loads up to 50 N (horizontal orientation). It utilizes our patent-pending multi-phase piezo motor resulting in high speed (> 2 mm/s) and high blocking force (> 2 N). The PPS-28 is available in open loop or with an external encoder. Closed-loop resolution of 2 nm is achievable. Versions capable of operation in vacuum ( $10^{-9}$  mbar) are available. The PPS-28 is compatible with the MMC-100 and MMC-110 controllers.

## KEY FEATURES

- Travel range of up to 102 mm
- 1 nm closed loop resolution
- Load capacity up to 5 kg
- Steel crossed roller bearing
- Low profile, 15 mm height
- Vacuum and non-magnetic versions available

## TECHNICAL DATA

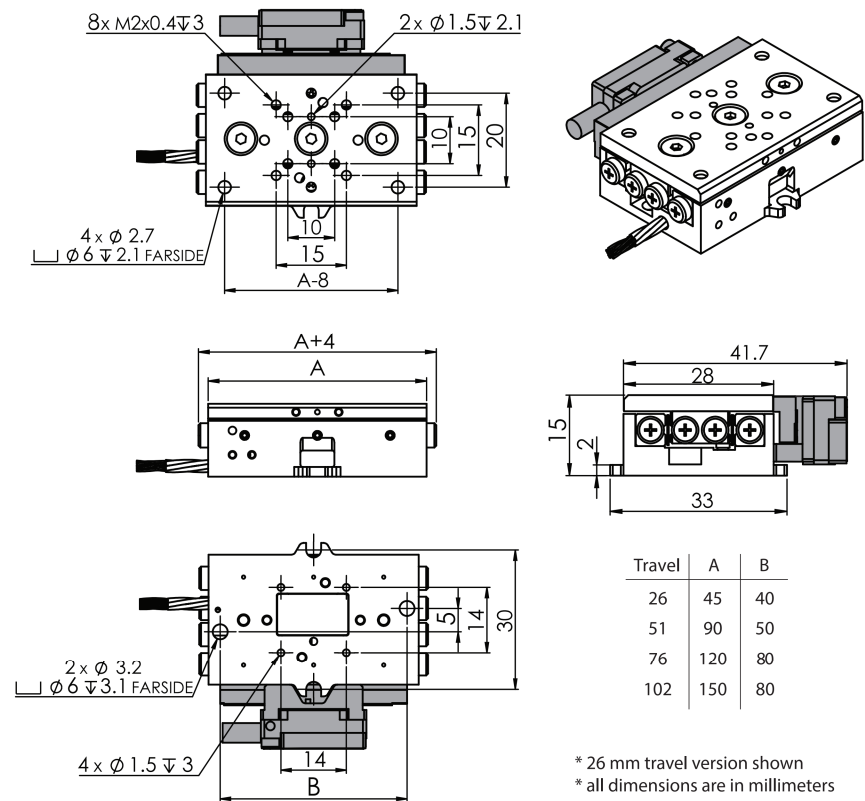
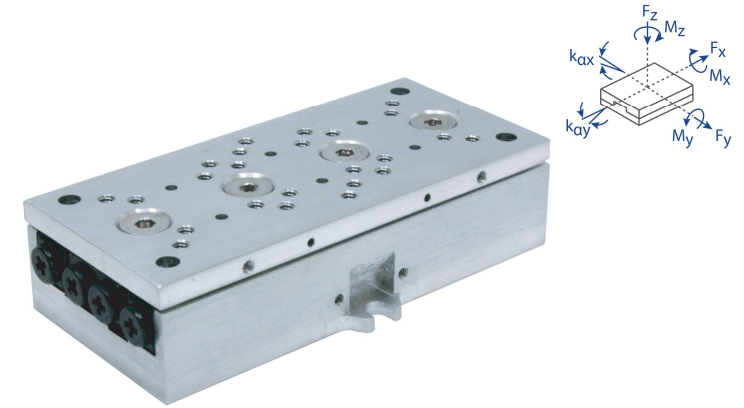
Travel range [mm]	26	51	76	102
Straightness / Flatness [ $\mu\text{m}$ ]	$\pm 1.5$	$\pm 2.5$	$\pm 3$	$\pm 3.5$
Pitch [ $\mu\text{rad}$ ]	$\pm 50$	$\pm 70$	$\pm 80$	$\pm 100$
Yaw [ $\mu\text{rad}$ ]	$\pm 60$	$\pm 75$	$\pm 90$	$\pm 100$
Weight [g]	63	125	165	206
Motor option	Piezo Motor			
Speed, max [mm/s]	2 (MMC-100), 10 (MMC-110)			
Encoder option	None (open loop)	Analog (1 V <sub>pp</sub> )	Digital (RS-422)	
Resolution, typical [nm]	1	10	1	
Repeatability, bi-directional [nm]	n/a	$\pm 50$	$\pm 50$	
Repeatability, uni-directional [nm]	n/a	50	50	
Accuracy [ $\mu\text{m}$ ]	-	$\pm 1$	$\pm 1$	
Materials	aluminum body, steel bearing (other materials i.e. stainless steel, titanium, etc. available upon request)			

## ORDERING INFORMATION

PPS-28- 1 0

<b>DRIVE</b>	Piezo Motor, PM-002 .....	1
<b>TRAVEL</b>	26 mm .....	1
	51 mm .....	3
	76 mm .....	4
	102 mm .....	5
<b>ENCODER</b>	None .....	0
	Analog (1 V <sub>pp</sub> ) .....	2
	Digital (RS-422) .....	3
<b>LIMIT SWITCH</b>	None .....	0
<b>ENVIRONMENT</b>	Atmospheric .....	0
	High Vacuum, $10^{-6}$ mbar .....	6
	Ultra High Vacuum, $10^{-9}$ mbar .....	9

Load, max	F <sub>x</sub> [N]	F <sub>y</sub> [N]	F <sub>z</sub> [N]	M <sub>x</sub> [N·m]	M <sub>y</sub> [N·m]	M <sub>z</sub> [N·m]	k <sub>ax</sub> [ $\mu\text{rad/N·m}$ ]	k <sub>ay</sub> [ $\mu\text{rad/N·m}$ ]
PM-002	2	50	50	1	1	1	-	-



Travel	A	B
26	45	40
51	90	50
76	120	80
102	150	80

\* 26 mm travel version shown  
\* all dimensions are in millimeters

Specifications are subject to change without notice.