

Precision Positioning Stage | PPS-28SM

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The PPS-28 Stepper Motor version is suitable for applications requiring high speed and high blocking force. Miniature crossed roller bearings assure high stiffness and guiding accuracy for loads up to 50 N (horizontal orientation). It utilizes a 2-phase stepper motor resulting in high speed (> 5 mm/s) and high blocking force (> 5 N). The PPS-28SM is available in open loop or with an external encoder. Resolutions of 100 nm are achievable. Versions capable of operation in vacuum (10^{-6} mbar) are available. The PPS-28SM is compatible with the MMC-200 controller.

KEY FEATURES

- Travel range of up to 102 mm
- 50 nm resolution
- Load capacity up to 5 kg
- Steel crossed roller bearing
- Low profile, 15 mm height
- Vacuum versions available

TECHNICAL DATA

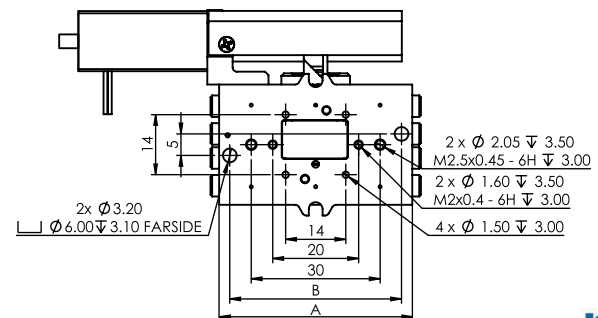
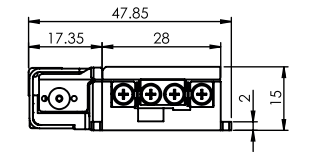
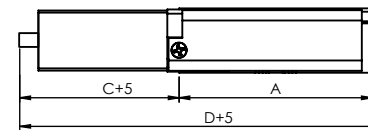
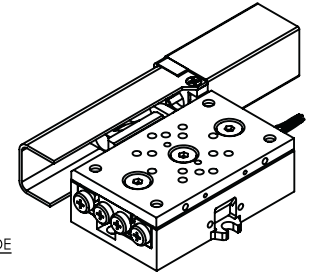
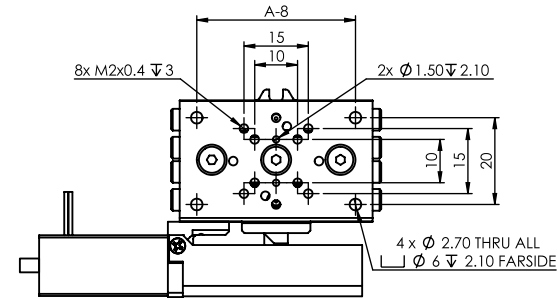
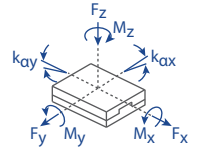
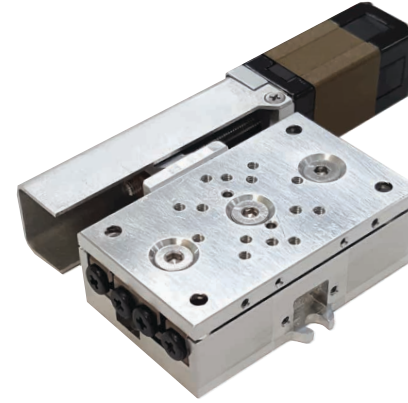
Travel range [mm]	26	51	76	102
Straightness / Flatness [μm]	± 1.5	± 2.5	± 3	± 3.5
Pitch [μrad]	± 50	± 70	± 80	± 100
Yaw [μrad]	± 60	± 75	± 90	± 100
Weight [g]	-	-	-	-
Motor option	2-Phase Stepper Motor			
Speed, max [mm/s]	5			
Encoder option	None (open loop)	Analog (1 V_{pp})	Digital (RS-422)	
Resolution, typical [μm]	0.1	0.05	0.05	
Repeatability, bi-directional [μm]	± 4	± 0.2	± 0.2	
Repeatability, uni-directional [μm]	0.5	0.2	0.2	
Accuracy [μm]	± 10	± 1	± 1	
Materials	aluminum body, steel bearing, stainless steel bracket, brass nut (other materials i.e. stainless steel, titanium, etc. available upon request)			

ORDERING INFORMATION

PPS-28- 2

DRIVE	Stepper Motor, SM-007	2
TRAVEL	26 mm	1
	51 mm	3
	76 mm	4
	102 mm	5
ENCODER	None	0
	Analog (1 V _{pp})	2
	Digital (RS-422)	3
LIMIT SWITCH	None	0
	Magnetic	1
ENVIRONMENT	Atmospheric	0
	High Vacuum, 10^{-6} mbar	6

Load, max	F _x [N]	F _y [N]	F _z [N]	M _x [N·m]	M _y [N·m]	M _z [N·m]	k _{ax} [$\mu\text{rad}/\text{N}\cdot\text{m}$]	k _{ay} [$\mu\text{rad}/\text{N}\cdot\text{m}$]
SM-007	5	50	50	1	1	1	-	-



Travel	A	B	C	D
26	45	40	32.75	79.75
51	90	50	19.25	111.25
76	120	80	22.25	144.25
102	150	80	13.25	165.25

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

Specifications are subject to change without notice.