

Precision Positioning Stage | PPS-20SM

The PPS-20 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 20N (horizontal orientation). It utilizes a 2-phase stepper motor resulting in high speed (> 5mm/s) and high blocking force (>10N). The PPS-20SM 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-20SM is compatible with the MMC-200 controller.

KEY FEATURES

- Travel range of up to 51 mm
- Stepper Motor - Leadscrew Drive
- 50 nm encoder resolution
- Load capacity up to 20 N (Horizontal)
- Crossed roller bearing
- Low profile, 13mm height
- Vacuum versions available

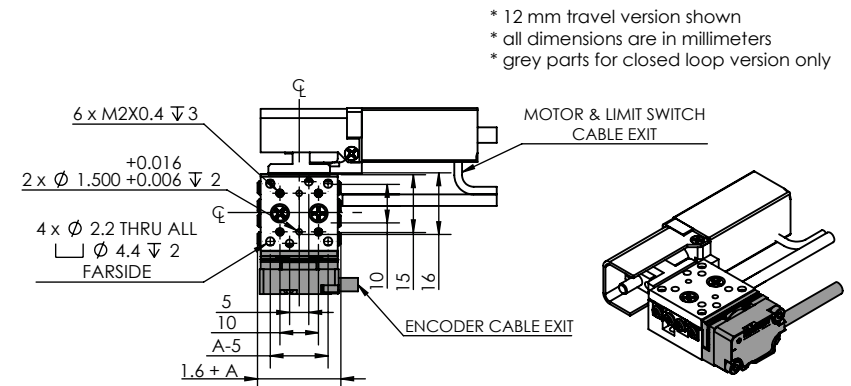
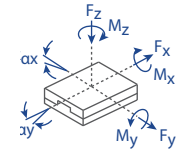
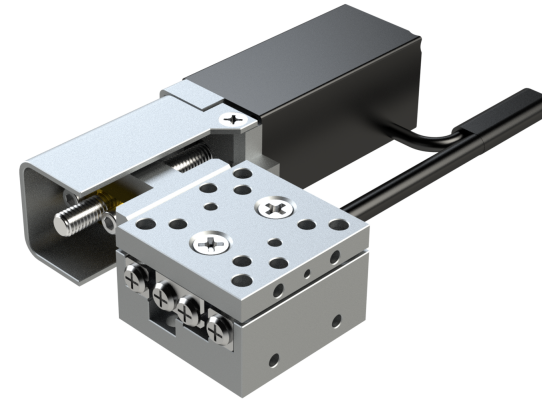
TECHNICAL DATA

Travel range [mm]	10	18	26	51
Straightness / Flatness [μ m]	± 1	± 1.5	± 1.5	± 2.5
Pitch [μ rad]	± 60	± 80	± 80	± 100
Yaw [μ rad]	± 70	± 90	± 90	± 100
Weight [g], Open Loop	60	65	70	110
Weight [g], Closed Loop	70	75	80	120
Motor option	2-Phase Stepper Motor			
Speed, max [mm/s]	5			
Encoder option	None (open loop)	Analog (1 Vpp)	Digital (RS-422)	
Resolution, typical [μ m]	0.1	0.05	0.05	
Repeatability, bi-directional [μ m]	± 4	± 0.2	± 0.2	
Repeatability, uni-directional [μ m]	0.5	0.2	0.2	
Materials	aluminum body, steel bearing, brass nut (other materials i.e. stainless steel, titanium, etc. available upon request)			

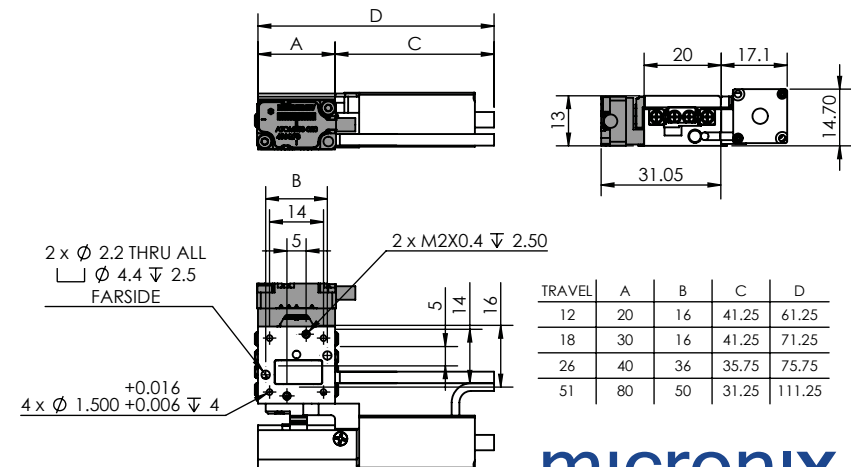
ORDERING INFORMATION

		PPS-20-	2			1
DRIVE	Stepper Motor, SM-007		2			
TRAVEL	12 mm		1			
	18 mm		2			
	26 mm		3			
	51 mm		5			
ENCODER	None		0			
	Analog (1 Vpp)		2			
	Digital (RS-422)		3			
LIMIT SWITCH	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} [μ rad/N·m]	k_{ay} [μ rad/N·m]
SM-007	5	20	20	0.7	0.7	0.7	-	-



* 12 mm travel version shown
* all dimensions are in millimeters
* grey parts for closed loop version only



TRAVEL	A	B	C	D
12	20	16	41.25	61.25
18	30	16	41.25	71.25
26	40	36	35.75	75.75
51	80	50	31.25	111.25

Specifications are subject to change without notice.