

# Piezo Positioner | PP-18

The PP-18 is a low cost linear piezo stage with miniature crossed roller bearings, which assure high stiffness. It utilizes our patented multi-phase motor resulting in high speed (>2mm/s) and high blocking force (> 1.5N). An integrated encoder provides excellent repeatability. The PP-18 is compatible with the MMC-100, MMC-110 and NanoDrive™ controllers.

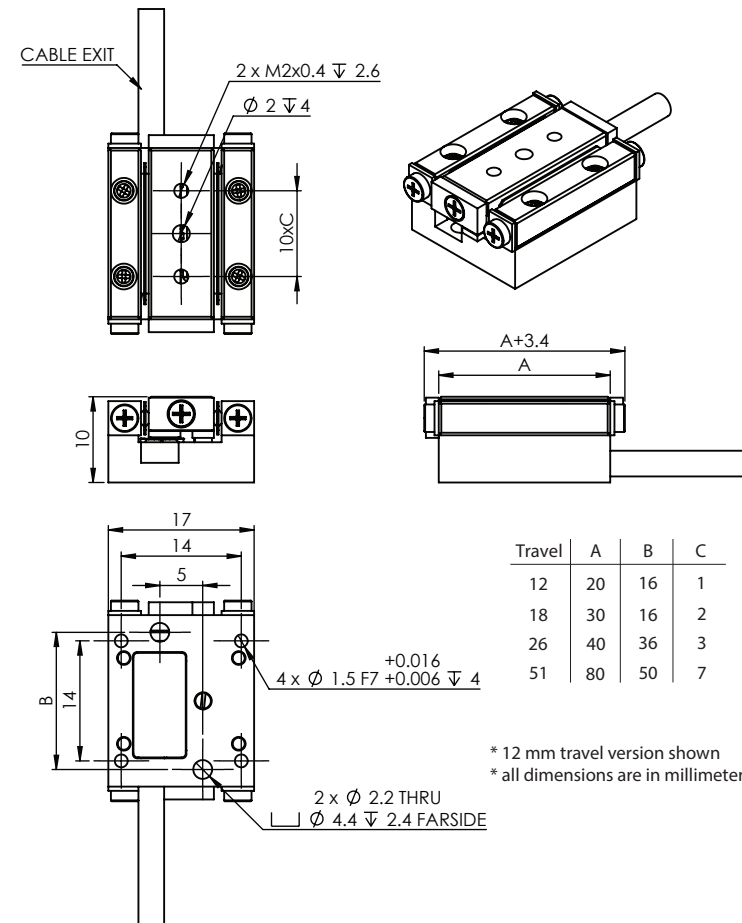
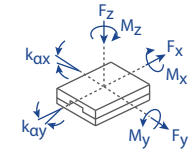
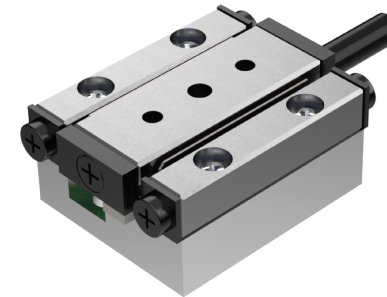
## KEY FEATURES

- Travel range of up to 51 mm
- 40 nm closed loop encoder resolution standard
- Load capacity up to 0.5 kg (horizontal orientation)
- Crossed roller bearing
- Low profile, 10 mm height, 17 mm wide

## TECHNICAL DATA

|  |   |           |                         |           |
|--|---|-----------|-------------------------|-----------|
| <b>Travel range [mm]</b>                           | <b>12</b>   | <b>18</b> | <b>26</b>               | <b>51</b> |
| <b>Straightness / Flatness [<math>\mu</math>m]</b> | $\pm 5$   | $\pm 10$  | $\pm 15$                | $\pm 20$  |
| <b>Pitch [<math>\mu</math>rad]</b>                 | $\pm 100$   | $\pm 200$ | $\pm 300$               | $\pm 400$ |
| <b>Yaw [<math>\mu</math>rad]</b>                   | $\pm 100$   | $\pm 200$ | $\pm 300$               | $\pm 400$ |
| <b>Weight [g], Closed Loop</b>                     | 15  | 20        | 28                      | 60        |
| <b>Motor option</b>                                | <b>Piezo Motor</b>  |           |                         |           |
| <b>Speed, max [mm/s]</b>                           | 2   |           |                         |           |
| <b>Encoder option</b>                              | <b>None (open loop)</b>   |           | <b>Digital (RS-422)</b> |           |
| <b>Resolution, typical [nm]</b>                    | 1   |           | < 40                    |           |
| <b>Repeatability, bi-directional [nm]</b>          | n/a   |           | $\pm 200$               |           |
| <b>Repeatability, uni-directional [nm]</b>         | n/a   |           | 200                     |           |
| <b>Materials</b>                                   | aluminum body, steel bearing<br>(other materials i.e. stainless steel, titanium, etc. available upon request) |           |                         |           |

| Load, max | $F_x$ [N] | $F_y$ [N] | $F_z$ [N] | $M_x$ [N-m] | $M_y$ [N-m] | $M_z$ [N-m] | $k_{ax}$ [ $\mu$ rad/N-m] | $k_{ay}$ [ $\mu$ rad/N-m] |
|-----------|-----------|-----------|-----------|-------------|-------------|-------------|---------------------------|---------------------------|
| PM-002    | 1.5       | 5         | 5         | 0.1         | 0.1         | 0.1         | -                         | -                         |



| Travel | A  | B  | C |
|--------|----|----|---|
| 12     | 20 | 16 | 1 |
| 18     | 30 | 16 | 2 |
| 26     | 40 | 36 | 3 |
| 51     | 80 | 50 | 7 |

\* 12 mm travel version shown  
\* all dimensions are in millimeters

## ORDERING INFORMATION

PP-18- 1 0 0

| DRIVE                    | Piezo Motor, PM-002 | 1 |
|--------------------------|---------------------|---|
| TRAVEL                   | 12 mm               | 1 |
|                          | 18 mm               | 2 |
|                          | 26 mm               | 3 |
|                          | 51 mm               | 5 |
| ENCODER                  | None                | 0 |
|                          | Digital (RS-422)    | 3 |
| LIMIT SWITCH ENVIRONMENT | None                | 0 |
|                          | Atmospheric         | 0 |

Specifications are subject to change without notice.