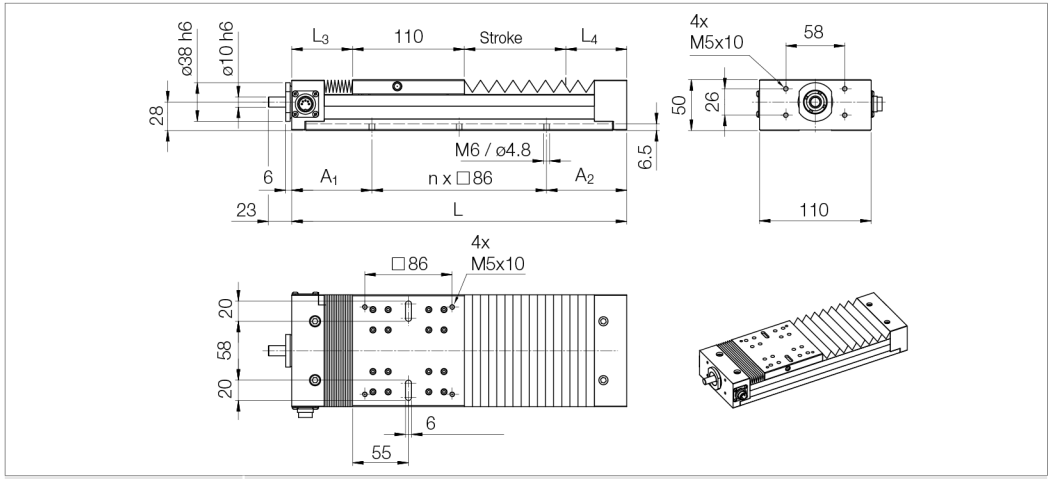
# Positioning unit PE1...R... with ball screw drive




| Nominal size | | Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Designation | Stroke [mm] | L [mm] | $L_3$ | $L_4$ | n | $A_1$ | $A_2$ | Ball screw length | Weight [kg] |
| PE1.4...FR... | 50 | 255 | 47.5 | 47.5 | 2 | 41.5 | 41.5 | 225 | 3.0 |
| with expansion | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * |
| bellows | 1500 | 2365 | 377.5 | 377.5 | 26 | 64.5 | 64.5 | 2071 | 17.2 |
| PE1.4...NR... | 50 | 255 | 47.5 | 47.5 | 2 | 41.5 | 41.5 | 225 | 3.0 |
| without protec- | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * | ¦ * |
| tive covering | 2160 | 2365 | 47.5 | 47.5 | 26 | 64.5 | 64.5 | 2373 | 17.2 |

* For intermediate dimensions, see catalogue

CAD data

Enquiry (technical/quote)

| PE | BSD | Axial load rates | | Positioning accuracy | Repeating accuracy | Accelera-tion | Axial play | | Idle torque |
|---|---|---|---|---|---|---|---|---|---|
| Size | d x p [mm] | $C_0$ [N] | $C_{dyn}$ [N] | [µm/mm] | [mm] | $a_{max}$ [m/s²] | Type | Axial play [mm] | [Nm] |
| | 16 x 5 | | | | | | V | — | 0.100 |
| PE1...R... | 16 x 10 | 4551 | 4327 | 52/300 [2] | < 0.01 [1] | 10.0 | V | — | 0.200 |
| | 16 x 16 | | | | | | V | — | 0.320 |

d x p = screw diameter x thread pitch

[1] backlash not factored in

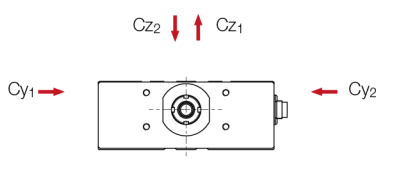
[2] also available with 23 µm / 300 mm

V = preloaded

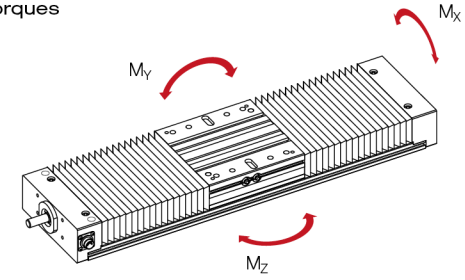
| PE | Movement speed | | Moments of inertia | | Stroke max. | Expansion bellow | Feed and friction force | Moved mass |
|---|---|---|---|---|---|---|---|---|
| Type | Guide $v_{max}$ [m/s] | Drive $v_{max}$ [m/s] | $I_Y$ [cm⁴] | $I_Z$ [cm⁴] | [mm] | | $F_V$ [N] | $m_b$ [kg] |
| PE1.4...R... | 1.6 | [2] | 8.9 | 178.2 | 2160 | without | 10.00 | 1.100 |
| | | | | | 1500 | with | 10.00 | |

[2] for ball screw drive, dependent on rotational speed characteristics, spindle length and relevant critical rotational speed.

Load ratings




Torques




| Positioning unit | Maximum permissible force [kN] | | | | | Maximum permissible torque [Nm] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | static | | | dynamic | | static | | | dynamic | | |
| | $C_{y0\,1,2}$ | $C_{z0\,1}$ | $C_{z0\,2}$ | $C_{y1,2}$ | $C_{z1,2}$ | $M_{x0}$ | $M_{y0}$ | $M_{z0}$ | $M_x$ | $M_y$ | $M_z$ |
| PE1.4...R... | 13.8 | 13.8 | 13.8 | 9.2 | 9.2 | 422 | 380 | 380 | 281 | 253 | 253 |

The determination of dynamic load ratings and torques is based on a 50,000 m stroke. If comparative values must be calculated for a 100,000 m stroke, the values for $M_x$, $M_y$, $M_z$ and C must be divided by the factor 1.26.

With a view to serviceable life, loads of less than 20% of the dynamic load ratings have generally proved to be expedient.

Download data sheet (PDF)

Download catalogue (PDF)