

NEXACT® OEM Miniature Linear Motor / Actuator

Compact, Fast, with Long Travel Range, PiezoWalk® Principle



N-310

- Travel range 20 mm
- Compact in size, inexpensive design
- Resolution to 0.03 nm
- Drive force up to 10 N

Nanometer precision and high feed force with PiezoWalk® walking drives

In the PiezoWalk® walking drive, several piezo actuators do a walking motion that leads to a forward feed of a runner. Control of the actuators allows the smallest step and forward feed motion at a resolution of well under one nanometer.

Highly accurate position measuring with incremental linear encoder

Noncontact optical linear encoders measure the position directly at the platform with the greatest accuracy. Nonlinearity, mechanical play or elastic deformation have no influence on the measurement.

Application fields

- Industrial precision positioning
- Semiconductor technology
- Semiconductor tests
- Wafer inspection
- Lithography
- Nanoimprinting
- Nanometrology

Motion	Unit	Tolerance	N-310.11
Active axes			X
Travel range in X	mm		20
Travel range in X (analog mode)	µm	Max.	10
Maximum velocity in X, unloaded	mm/s		10

Positioning	Unit	Tolerance	N-310.11
Step size in full step mode	µm		10
Resolution in X, open loop	nm	Typ.	0.03

Drive properties	Unit	Tolerance	N-310.11
Drive type			NEXACT® piezo walking drive
Operating voltage	V		-10 to +45
Drive force in X	N	Typ.	10

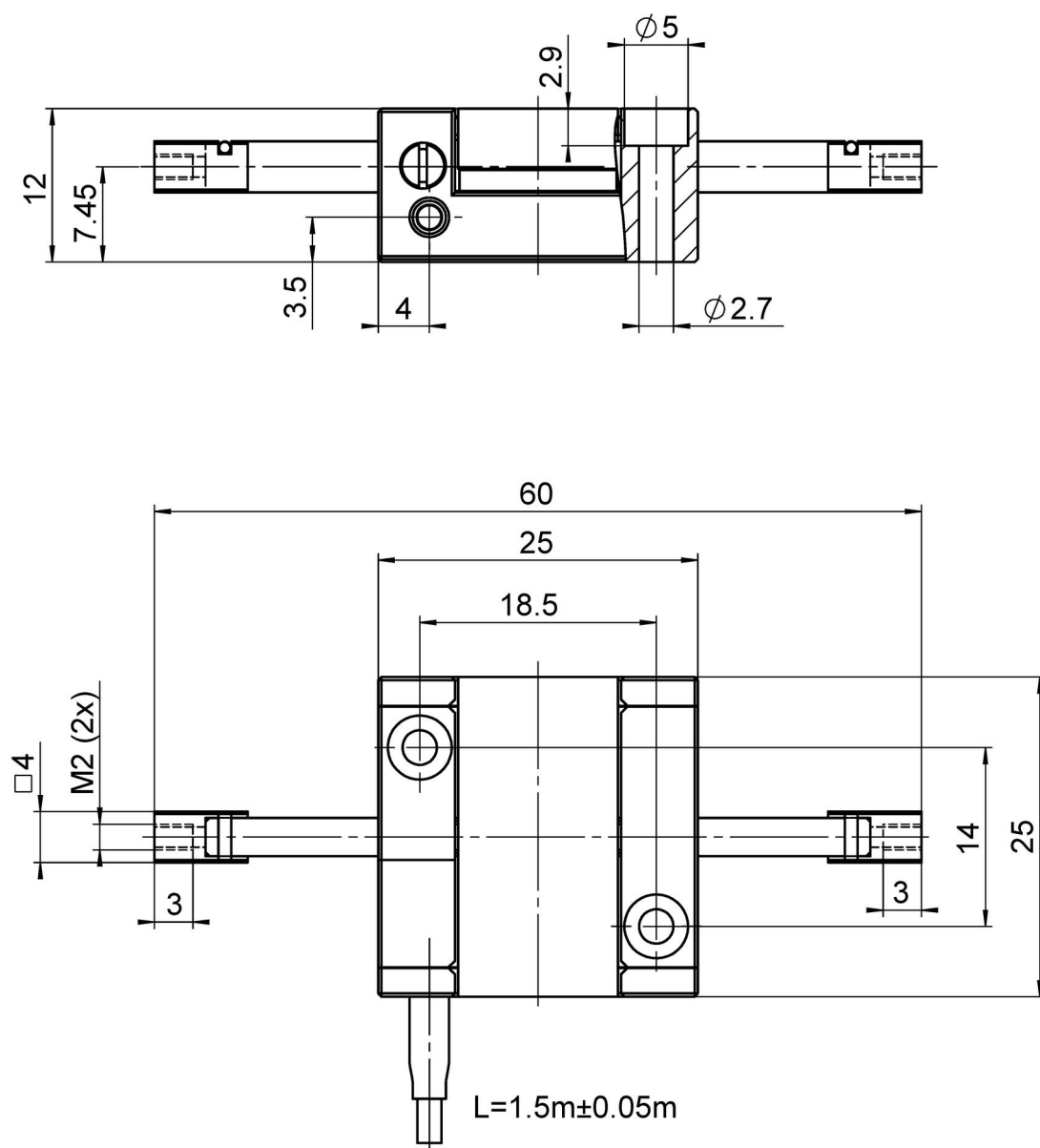
Mechanical properties	Unit	Tolerance	N-310.11
Holding force in X, passive	N	Max.	12
Overall mass	g	±5 %	50
Material			Stainless steel, ceramic; cable: PFA, PTFE

Miscellaneous	Unit	Tolerance	N-310.11
Operating temperature range	°C		0 to 50
Connector			HD D-sub 15 (m)
Cable length	m	±50 mm	1.5
Recommended controllers/drivers			E-713, E-861, E-861.11C885

Maximum velocity in X, unloaded: depending on the drive electronics
 Resolution in X, open loop: depending on the drive electronics

At PI, technical data is specified at 22 ±3 °C. Unless otherwise stated, the values are for unloaded conditions. Some properties are interdependent. The designation "typ." indicates a statistical average for a property; it does not indicate a guaranteed value for every product supplied. During the final inspection of a product, only selected properties are analyzed, not all. Please note that some product characteristics may deteriorate with increasing operating time.

Drawings / Images



N-310.11, dimensions in mm

Order Information

N-310.11

NEXACT® OEM miniature linear motor / actuator; NEXACT® piezo walking drive; 20 mm travel range; 10 N drive force; 10 mm/s maximum velocity; 1.5 m cable length