

# NEXACT® OEM Miniature Linear Motor / Actuator

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



## N-310

- Travel range 10 to 125 mm, variable runner lengths
- Compact design, inexpensive design
- Resolution to 0.03 nm
- Force generation to 10 N

### Fields of application

- Industrial precision positioning
- Semiconductor technology
- Semiconductor tests
- Wafer inspection
- Lithography
- Nanoimprinting
- Nanometrology
- Motion in strong magnetic fields and in a vacuum

### Nanometer precision and high feed force with PiezoWalk® walking drives

Several piezo actuators perform a walking motion in the PiezoWalk® walking drive that leads to 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 encoder

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

### Suitable for sophisticated vacuum applications

Piezo motors from PI can be designed for use in a vacuum and are suitable for operating in strong magnetic fields. Special versions of the drives are available for this purpose. Piezo walking drives can also be used in cleanrooms or in environments with strong ultraviolet radiation.

## Specifications

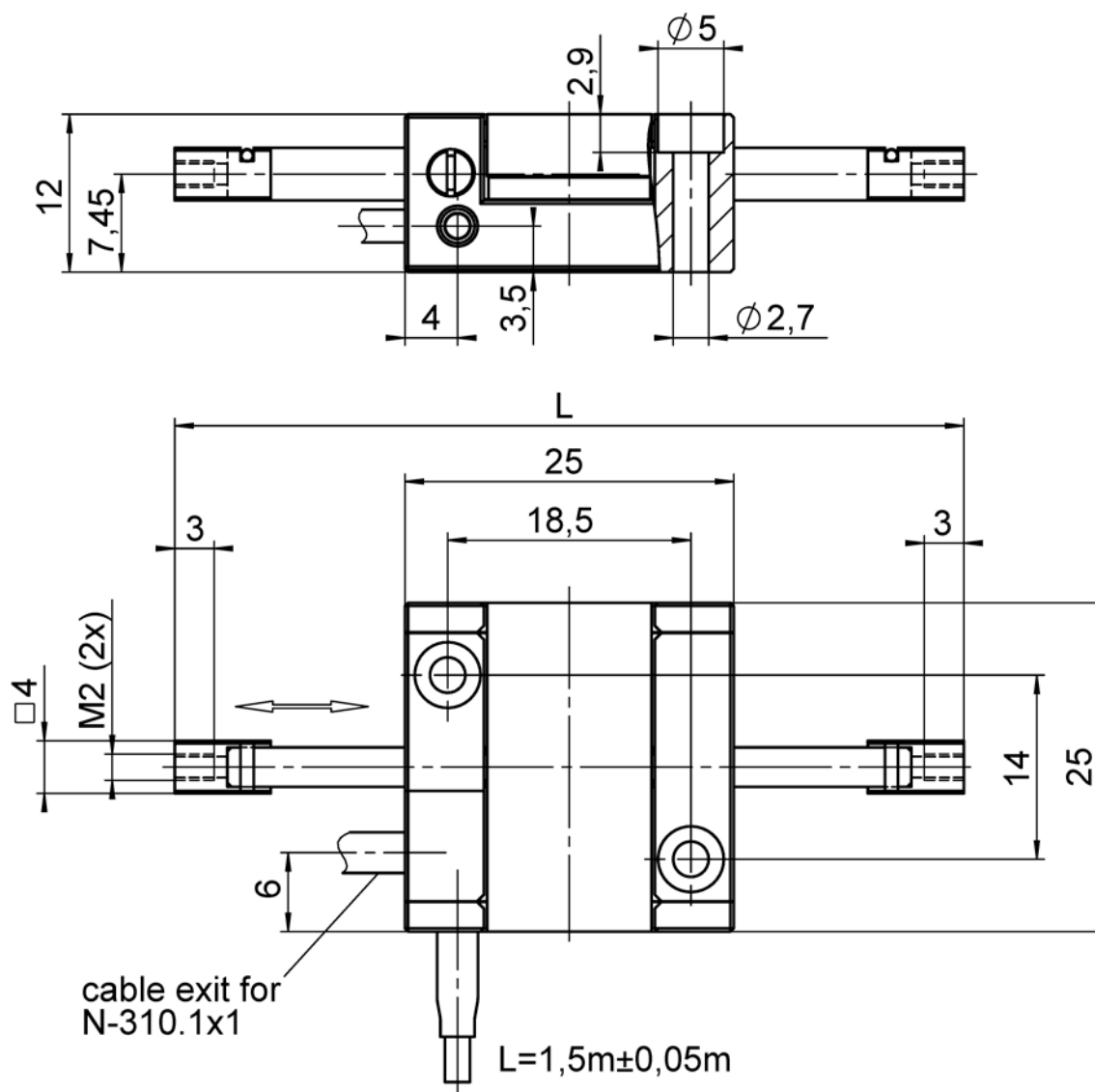
	N-310	Unit	Tolerance
Active axes	X		
<b>Motion and positioning</b>			
Travel range	N-310.10: 10 N-310.11: 20 N-310.12: 30 N-310.13: 50 N-310.14: 75 N-310.15: 100 N-310.16: 125	mm	
Step size (in step mode)	5 nm to 10 µm		
Travel range in analog mode	±5	µm	max.
Resolution, open loop*	0.03	nm	typ.
Velocity*	10	mm/s	max.
<b>Mechanical properties</b>			
Push/pull force (active)	10	N	max.
Holding force (passive)	12	N	max.
<b>Drive properties</b>			
Drive type	NEXACT® linear drive		
Operating voltage	-10 V to +45	V	
<b>Miscellaneous</b>			
Operating temperature range	0 to 50	°C	
Housing material	Stainless steel		
Mass	50 (20 mm travel range)	g	±5 %
Cable length	1.5	m	±10 mm
Cable exit	N-310.x0: Cable exit in Y N-310.x01: Cable exit in -X		
Connector	HD Sub-D 15 (m)		
Recommended electronics	E-712, E-861, E-861.11C885, E-862		

\* Depending on drive electronics.

All specifications based on room temperature (22 °C ±3 °C).

Ask about customized versions.

## Drawings / Images



	L
N-310.10 / .101	50
N-310.11 / .111	60
N-310.12 / .121	70
N-310.13 / .131	90
N-310.14 / .141	115
N-310.15 / .151	140
N-310.16 / .161	165

N-310, dimensions in mm; runner length L = travel range + 40 mm.

## Ordering Information

### **N-310.10**

NEXACT® OEM linear drive, 10 mm, 10 N

### **N-310.101**

NEXACT® OEM linear drive, 10 mm, 10 N, turned cable exit

### **N-310.11**

NEXACT® OEM linear drive, 20 mm, 10 N

### **N-310.111**

NEXACT® OEM linear drive, 20 mm, 10 N, turned cable exit

### **N-310.12**

NEXACT® OEM linear drive, 30 mm, 10 N

### **N-310.121**

NEXACT® OEM linear drive, 30 mm, 10 N, turned cable exit

### **N-310.13**

NEXACT® OEM linear drive, 50 mm, 10 N

### **N-310.131**

NEXACT® OEM linear drive, 50 mm, 10 N, turned cable exit

### **N-310.14**

NEXACT® OEM linear drive, 75 mm, 10 N

### **N-310.141**

NEXACT® OEM linear drive, 75 mm, 10 N, turned cable exit

### **N-310.15**

NEXACT® OEM linear drive, 100 mm, 10 N

### **N-310.151**

NEXACT® OEM linear drive, 100 mm, 10 N, turned cable exit

### **N-310.16**

NEXACT® OEM linear drive, 125 mm, 10 N

### **N-310.161**

NEXACT® OEM linear drive, 125 mm, 10 N, turned cable exit