

N-412

Linear Actuator with PIShift Piezomotor

Cost-Effective and Easy to Integrate



- Easy frontal mounting
- Silent: Operating frequency to >20 kHz
- Velocity over 5 mm/s
- Sub-micron resolution
- Holding force to 10 N
- Low operating voltage to 48 V_{pp}
- Self-locking, no heat generation at rest

Piezomotor-based direct drive

OEM actuator without position sensor. Continuous motion with step frequencies in the ultrasound range. Frontal mounting with M10x1 thread or 9.5 mm shank.

PIShift piezo inertia drive

Self-locking when at rest, no heat generation. Noiseless drive with operating frequencies beyond 20 kHz. Resolution in step mode approx. 300 nm, open-loop.

Fields of application

Industry and research. Alignment of optical elements, micromanipulation, biotechnology, cell manipulation, medical technology.

Specifications

Preliminary data	N-412.50	N-412.51	Unit	Tolerance
Active axis	X	X		
Mechanical interface	PIShift Linear Actuator, 9.5 mm Shank	PIShift Linear Actuator, M10x1 Thread		
Motion and positioning				
Travel	13	13	mm	
Step size (in step mode)	300	300	nm	typ.
Step frequency*	23	23	kHz	max.
Max. velocity*	5	5	mm/s	min.
Mechanical properties				
Stiffness in motion direction	>4	>4	N/μm	±20 %
Push / pull force (active)	7	7	N	max.
Max. holding force (passive)	10	10	N	min.
Drive properties				
Drive type	PIShift piezo inertia drive	PIShift piezo inertia drive		
Operating voltage	48	48	V _{pp}	max.
Miscellaneous				
Operating temperature range	0 to 50	0 to 50	°C	
Material**	Stainless steel	Stainless steel		
Dimensions	58 mm length, 15 mm diameter	58 mm length, 15 mm diameter		
Mass	25	25	g	±5 %
Cable length	1.5	1.5	m	±10 mm
Connector	DIN 4-pin	DIN 4-pin		
Recommended controller / driver	E-870 PIShift drive electronics	E-870 PIShift drive electronics		

Ask about custom designs!

* Depending on the drive electronics

** Ceramic rod

Ordering Information

N-412.50

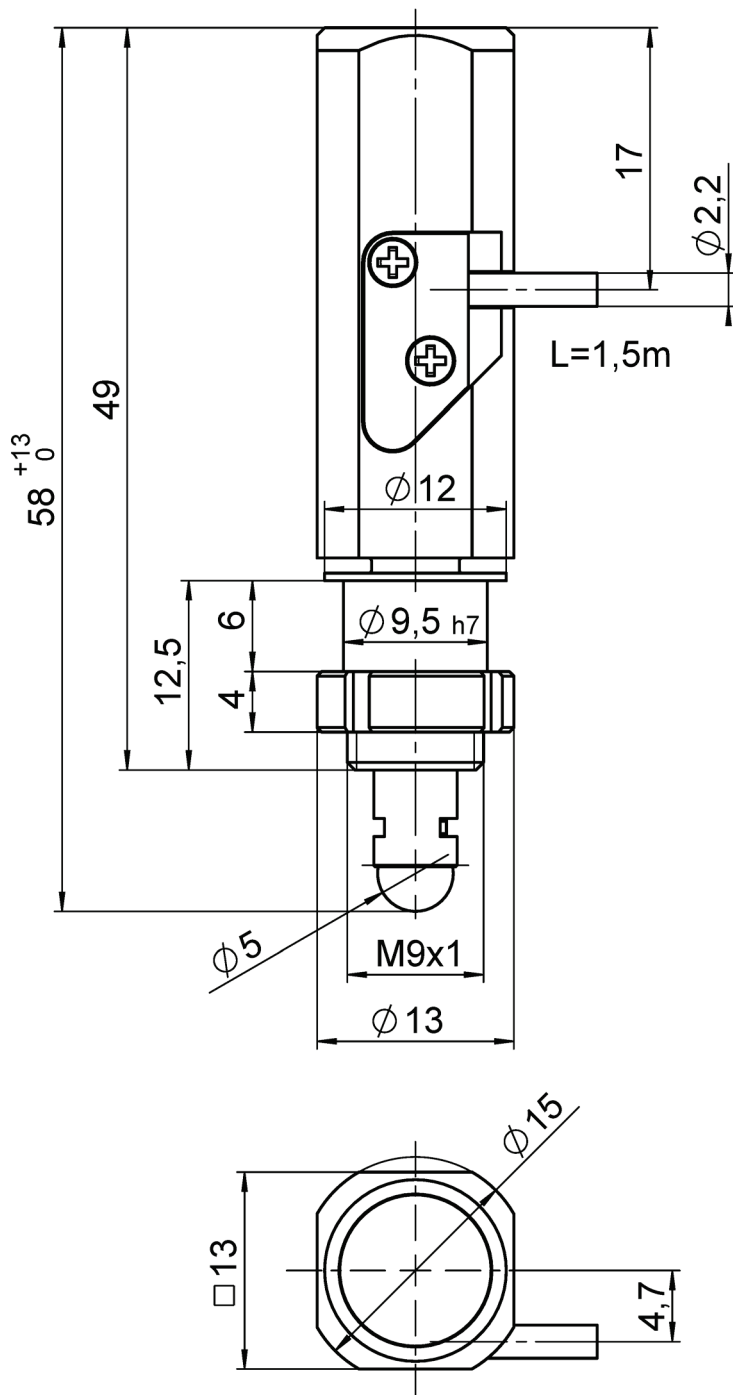
PIShift OEM linear actuator, 13 mm travel range, 7 N feed force, noiseless operation, 9.5 mm (0.375") shank

N-412.51

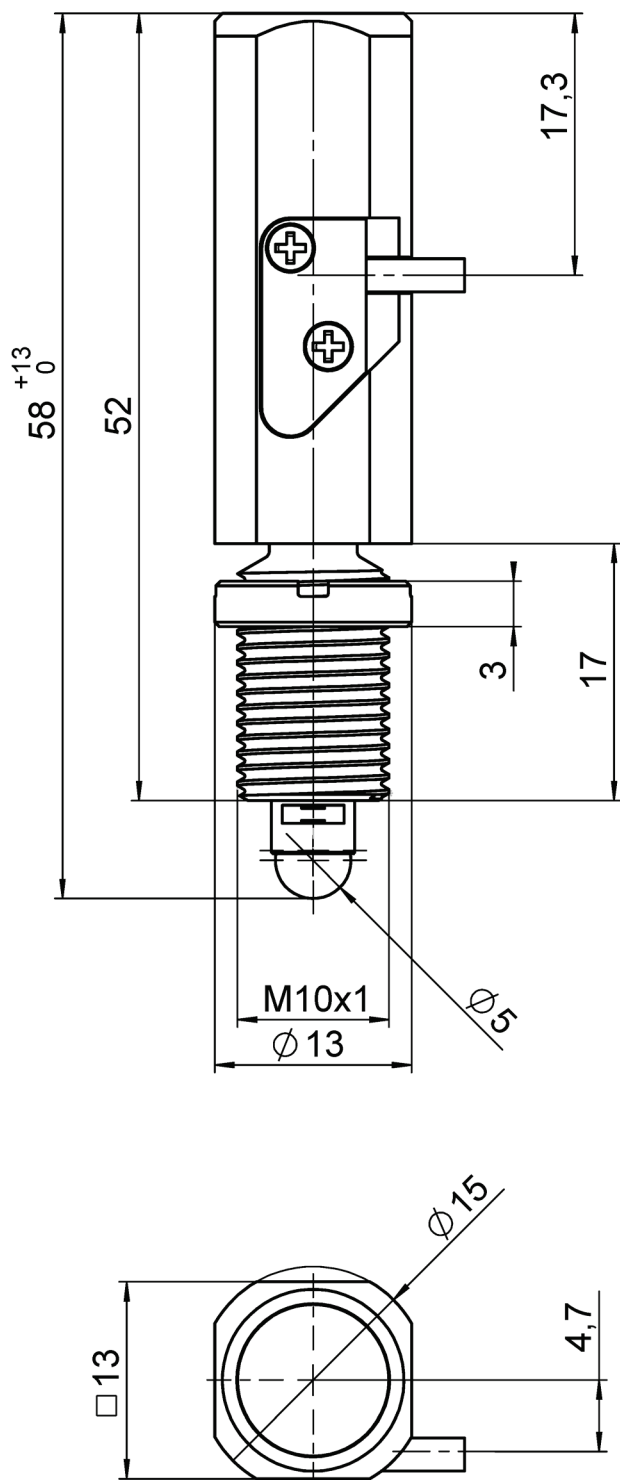
PIShift OEM linear actuator, 13 mm travel range, 7 N feed force, noiseless operation, M10x1 mounting thread

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Drawings / Images



N-412.50, dimensions in mm



L=1,5m

N-412.51, dimensions in mm