

PIRest Actuators

Active Shims with Nanometer Resolution and Long-Term Stability



P-131

- Long-term stability without permanent power supply
- Easy readjustment of machines at inaccessible locations
- Avoids time-consuming manual adjusting processes
- Nanometer resolution and micrometer displacement
- Load capacity up to 4000 N per actuator
- Temperature sensor

Fields of application

- Set-and-forget applications
- Adaptive mechanics
- Drift compensation
- Alignment of optical components
- Precision mechanics
- Static precision positioning
- Metrology / interferometry

Long-term stable positioning without permanent power supply

Once displaced, actuators with PIRest technology hold their position stable without permanent control voltage. Nanometer precision, maintenance-friendly and inexpensive adjustments are possible even at inaccessible locations.

High user-friendliness due to automatic configuration

Important operating parameters are stored on the mechanic's ID chip and are read out automatically when the electronics are switched on.

Specifications

	P-131.11	P-131.12	P-131.13	Unit	Tolerance
Dimensions OD × ID × L	22 × 8 × 7	22 × 8 × 17	22 × 8 × 32	mm	
Nominal travel range*	2	5	10	μm	±20 %
Min. incremental motion*	<10	<10	<10	nm	
Load capacity	4000	4000	4000	N	
Stiffness	1000	350	170	N/μm	typ.
Electrical capacitance	3.4	10.2	20.4	μF	±20 %
PIRest operating modes					
Operating point for active adjustment	120	120	120	V	max.
Operating point a for long-term stable position	0	0	0	V	
Miscellaneous					
Cable length	1.5	1.5	1.5	m	
Voltage connection	Sub-D 9 (m)	Sub-D 9 (m)	Sub-D 9 (m)		
ID chip	Yes	Yes	Yes		
Temperature sensor	Yes	Yes	Yes		
Operating temperature range	5 to 40	5 to 40	5 to 40	°C	
Suitable connecting cable**	E-815.AKx00	E-815.AKx00	E-815.AKx00		
Recommended electronics	E-135	E-135	E-135		

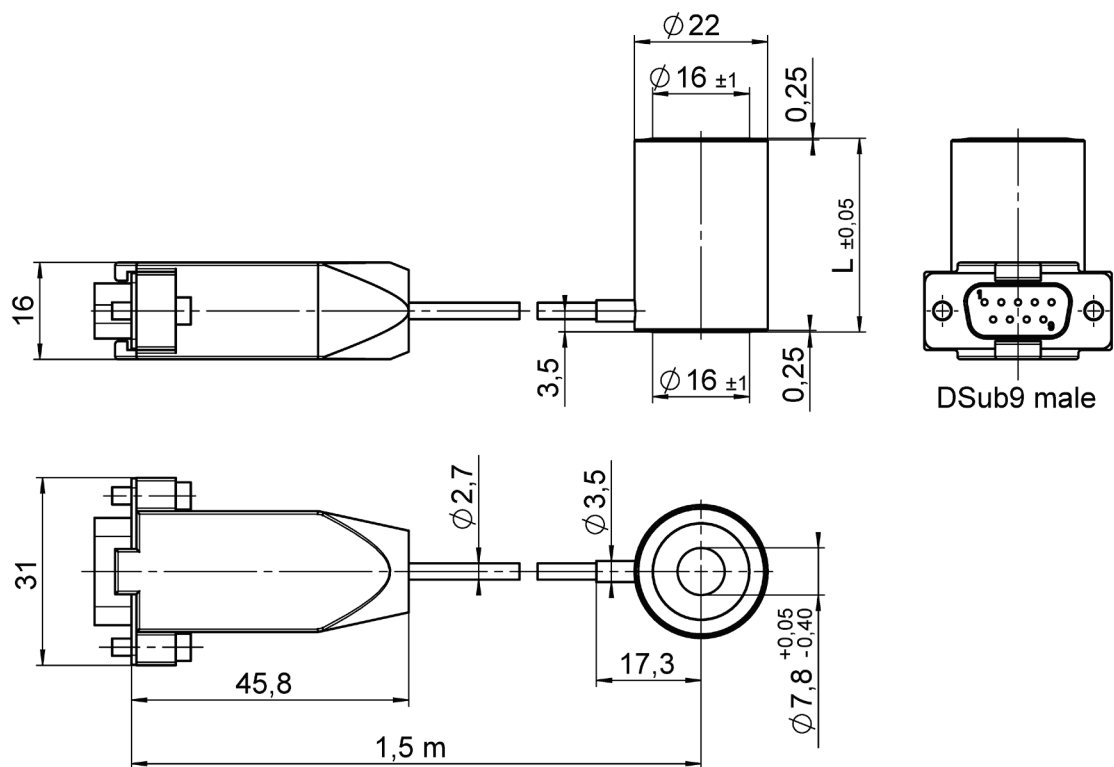
* At room temperature

** Please order separately. Selection of the cable depends on the number of actuators to be connected.

Vacuum versions available on request.

Ask about customized versions.

Drawings / Images



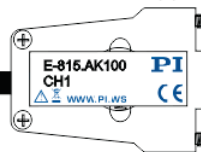
	Travel Range	L
P-131.11	2 μm	7 mm
P-131.12	5 μm	17 mm
P-131.13	10 μm	32 mm

P-131.1x: dimensions in mm

HD Sub-D 15 (m)



Sub-D 9 (f)



E-815.AK100: PIRest adapter cable, 1 channel, 0.5 m

HD Sub-D 15 (m)



2 × Sub-D 9 (f)



E-815.AK200: PIRest adapter cable, 2 channels, 0.5 m

HD Sub-D 15 (m)



3 × Sub-D 9 (f)



E-815.AK300: PIRest adapter cable, 3 channels, 0.5 m

Ordering Information

PIRest active shims

P-131.11

PIRest active shim, 2 μ m travel range

P-131.12

PIRest active shim, 5 μ m travel range

P-131.13

PIRest active shim, 10 μ m travel range

Accessories required (please order separately)

E-815.AK100

PIRest adapter cable, 1 channel, Sub-D 9 (f) to HD Sub-D 15 (m), 0.5 m

E-815.AK200

PIRest adapter cable, 2 channels, 2 \times Sub-D 9 (f) to HD Sub-D 15 (m), 0.5 m

E-815.AK300

PIRest adapter cable, 3 channels, 3 \times Sub-D 9 (f) to HD Sub-D 15 (m), 0.5 m

E-815.AK600

PIRest adapter cable set, 6 channels, consisting of 2 \times E-815.AK300 (channels 1 to 3 and channels 4 to 6)