

## ABOUT HPOWER

hpower actuators combine fastest response times in  $\mu\text{s}$ , superior kHz dynamics, high force generation in the range of tens of kN and nanometer precision in a way that is unmatched by any other linear driving system. The actuation can be obtained without any mechanical wear, making the actuators extremely durable. hpower products include ring and stack type actuators, as well as shakers and shock generators. hpower is the result of the collaboration between piezosystem jena and Piezomechanik GmbH and therefore combines centuries of piezo expertise with new innovations.

## STACK TYPE ACTUATORS SERIES PSt 1000/10 VS18

SERIES PST WITH CASING AND PRELOAD,  
DIAMETER 18 MM



### Concept

Solid Stack type actuators with casing and preload are based on a special smart material known as PZT ceramics. This enables these actuators to achieve outstanding performance with a motion range from  $0\ \mu\text{m}$  to  $150\ \mu\text{m}$  or even higher on request, while generating maximum forces of up to 4kN. The actuators are available in different lengths, a stack with a length of 50 mm usually possesses a maximum motion of  $50\ \mu\text{m}$  to  $70\ \mu\text{m}$  (0.1% - 0.15% of the length).

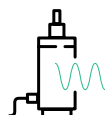
### Product highlights

- max. load: 5000 N
- max. force generation: 4000 N
- high stiffness
- high resonant frequency

### Options

- low temperature modification
- ultra high vacuum (UHV) modification
- strain gauge (SG) measurement system
- piezo material HP (high power & capacitance)

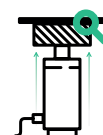
### Applications:



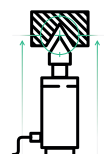
MODAL  
ANALYSIS



VIBRATION  
CONTROL



MATERIAL  
TESTING

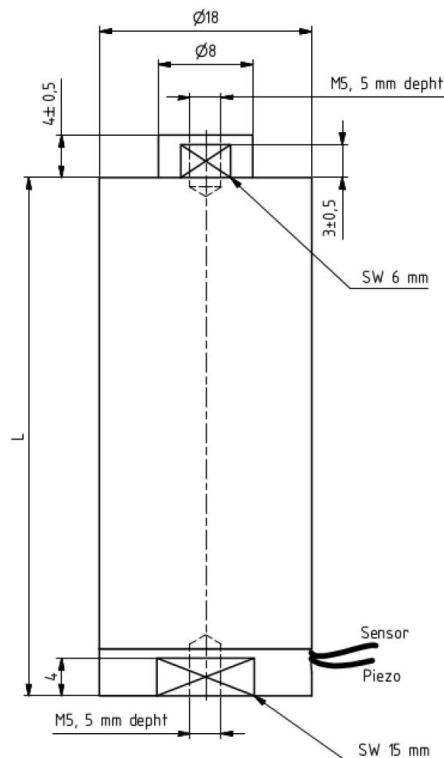


MECHANICAL  
ENGINEERING

### Technical data of PSt 1000/10 VS18 series

type	motion, $\mu\text{m}^*$	voltage range, V	Length, mm	resonant frequency, kHz	Blocking force, N**	Maximum load, N	Capacity, nF	Stiffness, $\text{N}/\mu\text{m}^{***}$
PSt 1000/10/07 VS18	7	1000	24	40	4000	5000	20	300
PSt 1000/10/20 VS18	18	1000	33	35	4000	5000	45	150
PSt 1000/10/40 VS18	40	1000	51	27	4000	5000	110	75
PSt 1000/10/60 VS18	60	1000	69	23	4000	5000	170	50
PSt 1000/10/80 VS18	80	1000	87	20	4000	5000	220	35
PSt 1000/10/100 VS18	100	1000	105	15	4000	5000	270	30
PSt 1000/10/150 VS18	150	1000	145	5	4000	5000	390	17

### Technical drawing of PSt 1000/10 VS18 series



\*Motion at voltage 0V to 1000V. Motion with -200 to 1000V amplifier can be up to 30% higher.

\*\*Maximum blocking force at -200V to 1000V. Blocking force with 0V to 1000V amplifier can be up to 30% - 40% less.

\*\*\*Determined with a short-circuited actuator and respectively connected amplifier.

**Get in touch with us**  
and we will help configuring  
the best solution.

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