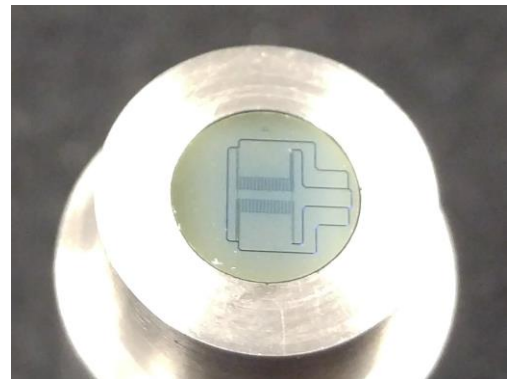


## Data Sheet – Type CS-D10

### Description

The IC2 type CS-D10 Capacitive Shear Stress Sensor is a micromachined, floating element device that enables time-resolved, one-dimensional, direct mean and fluctuating wall shear stress measurements. The sensor is packaged on a PCB endcap and installed in a cylindrical stainless steel housing. A shielded 6-pin cable is used to connect the sensor head to a designated Sensor Control Unit (SCU).



### Key Features and Benefits

- Time-resolved, direct mean and fluctuating wall shear stress measurements
- Large dynamic range – < 20  $\mu\text{Pa}$  to 10 Pa
- Small sensing element – 2 mm x 0.4 mm
- Non-intrusive – minimal flow disturbance
- Shoulder and key for precision alignment – custom packaging available
- Removable 6-pin shielded sensor cable

### Typical Performance Specifications

<b>Maximum shear stress</b>	10 Pa
<b>Bandwidth</b>	DC – 800 Hz
<b>Mean (DC) sensitivity</b>	150 mV/Pa
<b>DC measurement accuracy</b>	< 0.1% Full Scale / 10 min
<b>Dynamic sensitivity @ 1 kHz</b>	260 mV/Pa
<b>Minimum resolution @ 1 kHz</b>	< 20 $\mu\text{Pa}$
<b>Dynamic range @ 1 kHz</b>	> 114 dB
<b>DC offset (20°C, 70% RH)</b>	2.6 V

### General Specifications

<b>Operating temperature range</b>	0 – 50°C (32 – 122°F)
<b>Sensing element dimensions</b>	2 mm x 0.4 mm
<b>Sensor head dimensions/weight</b>	Diameter (head): 12.7 mm (0.5 in) Length (head): 6.4 mm (0.25 in) Diameter (shoulder): 15.9 mm (0.63 in) Total length: 52.3 mm (2.1 in) Weight: 50 g (0.11 lb)
<b>Sensor flushness</b>	< $\pm 25 \mu\text{m}$ ( $\pm 0.001$ in)
<b>Cable length</b>	2 m (6.6 ft) standard – custom lengths available

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