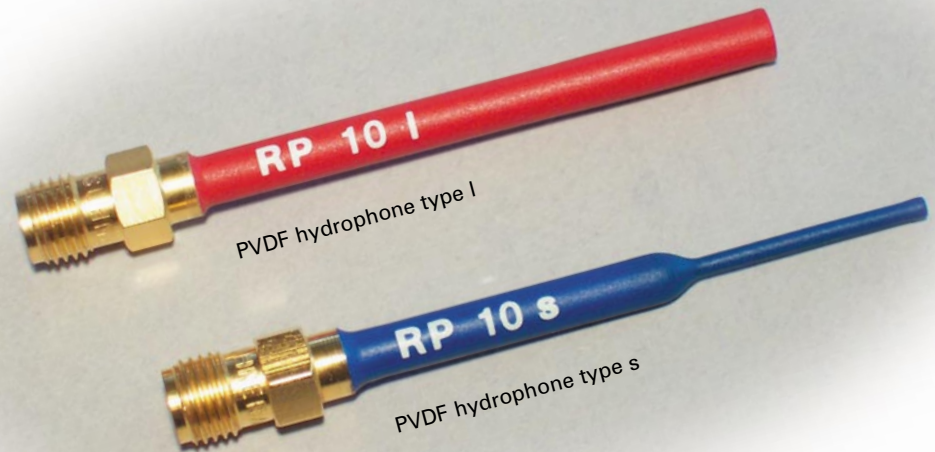


PVDF hydrophones



High precision
 measurements of
 acoustical signals
 with pressure
 amplitudes
 up to 10 bar

RP acoustics PVDF hydrophones are ideal for measurements in the low pressure region of 1 mbar to 10 bar. The hydrophones use the piezoelectric effect for the pressure/ voltage conversion.

The polymer Polyvinylidenfluorid (PVDF) becomes piezoelectric when it is mechanically stretched and

exposed to a strong electric field. A small piece of piezoelectric PVDF foil is attached and electrically contacted to the tip of the hydrophone. This is the pressure sensitive element of the measuring instrument.

Two different types of PVDF hydrophones are available:

PVDF hydrophone types:

Type s	<i>Diameter of the pressure sensitive area: 1 mm (Higher spatial resolution, lower sensitivity)</i>
Type I	<i>Diameter of the pressure sensitive area: 3 mm (Lower spatial resolution, higher sensitivity)</i>

RP acoustics PVDF hydrophones are calibrated in a water basin with a reciprocity calibration sound source. The acoustic field of the sound source is controlled by the RP acoustics Fiber Optic Probe Hydrophone FOPH 2000.

The PVDF hydrophones are delivered with the calibration data and a coaxial cable of 1.5 m length. The coaxial cable is used for the connection of the hydrophones to the high impedance input of an oscilloscope or an amplifier.

Hydrophone amplifier for weak sound signals



Summary of the technical data

Hydrophone Type	s	l
Length	55 mm	55 mm
Connector	SMA	SMA
Spatial Resolution	1 mm	3 mm
Risetime	typ. 100 ns	typ. 100 ns
Bandwidth	typ. 1 kHz - 3 MHz	typ. 1 kHz - 3 MHz
Sensitivity	typ. 2 mV/bar	typ. 15 mV/bar
Pressure range	1 mbar - 10 bar	1 mbar - 10 bar
Accuracy	+/- 15 %	+/- 15 %
Temperature range	10° C to 35° C	10° C to 35° C

Amplifier

For the measurement of very low pressure amplitudes, an amplification of the measured signal is required. RP acoustics offers a hydrophone amplifier with an amplification of 40 dB or 60 dB (switchable).

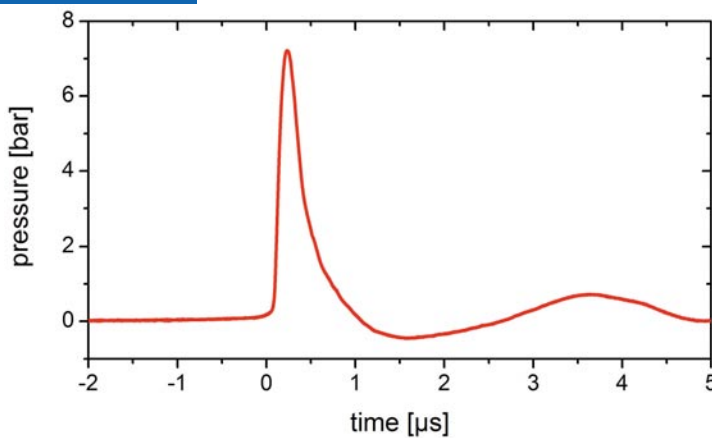
Applications

Numerous possible applications exist in the field of general ultrasonic measurements:

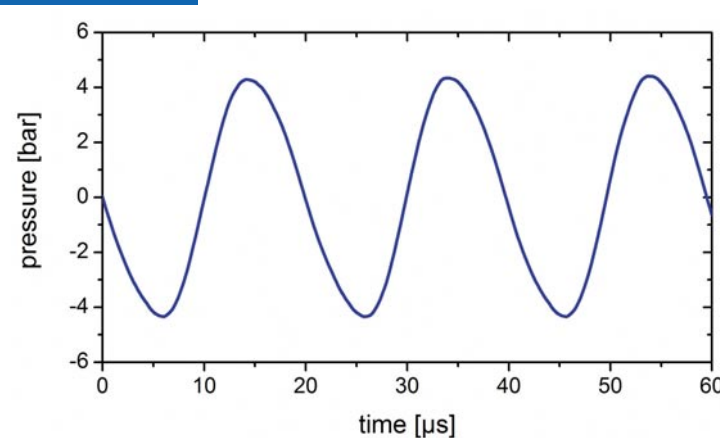
- Underwater ultrasound studies.
- Measurements in the wave field of medical devices for diagnosis and therapy at low acoustical intensities.
- Examination of the wave field of ultrasound cleaning devices.
- Control of ultrasound resonators.

RP acoustics PVDF hydrophones are only suitable for measurements in water. The use in acid or alkaline liquids, in solvents or in cavitation fields can lead to hydrophone damages.

Pressure pulse emitted by an underwater spark discharge. Distance between the spark discharge and the hydrophone: 10 mm



Pressure signal in an ultrasound cleaning basin. Due to nonlinear effects during the sound propagation in the liquid, the pure sine signal is slightly deformed to a saw tooth signal



If you are interested in more information or if you wish to receive a quotation, please contact:



深圳为尔康科技有限公司 联系人：曾祥满 手机：13632925349

QQ：274798107 电话：0755-28896837 地址：深圳市龙岗区沙平北路111号6008

网址：www.medicalQC.com 邮箱：szchina1718@163.com