

## Submersible Preamplifier & DC Coupler



Precision Acoustics Ltd manufactures a wide range of hydrophones the ultrasonic frequency range. The Submersible Preamplifier & DC Coupler are designed to work with both needle and coplanar membrane hydrophones. Whilst the Submersible Preamplifier & DC Coupler provide a small amount of gain, their principal function is to buffer electrical impedance to 50  $\Omega$ . The Submersible Preamplifier & DC Coupler are an integral part of all needle, and co-planar membrane, hydrophone systems and these hydrophone products should not be used without them.

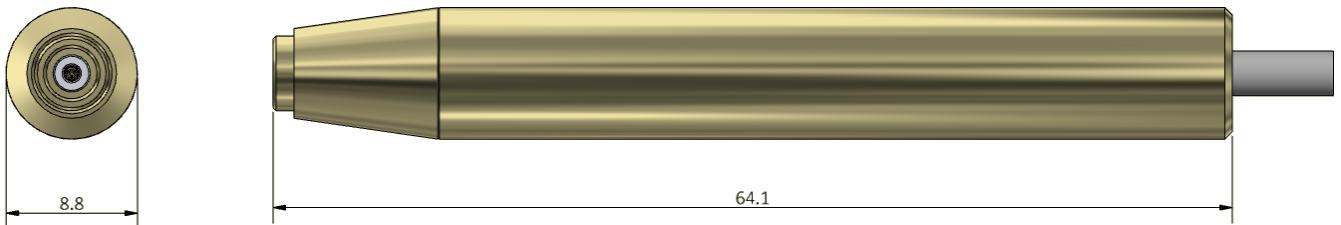
## SUBMERSIBLE PREAMPLIFIER

The submersible preamplifier provides impedance buffering and a small amount of signal gain for needle and coplanar membrane hydrophone systems. The gain of the preamplifier is always included within the calibration of a hydrophone system and does not need to be separately accounted for.

The supply voltage required to power the submersible preamplifier and the hydrophone signal output from it share the same conductors in the interconnecting coaxial cable between the preamplifier and the DC coupler.

### Specification

Bandwidth	10 kHz to 50 MHz (-3dB) 5 kHz to 100 MHz (-6dB)
Maximum output level	700 mV (peak-peak into a 50 Ω load)
Output noise	60 μV rms (over 100 MHz bandwidth)
Output impedance	50 Ω
VSWR	≤ 1.2 : 1
Operating temperature range	0 °C to 50 °C
Terminations	MCX (input) SMC (output)
Cable	2.0 m RG174 50 Ω coax
Maximum dimensions	64.1 mm (length) 8.8 mm (diameter)
Weight	17.5 g (excluding cable)
Maximum operating depth	5 m (when supplied with an extra length cable)
Power supply	Phantom powered from DC Coupler with Power Supply



## DC COUPLER WITH POWER SUPPLY (DCPS)

The DC Coupler with power supply transforms mains voltage (switchable input voltage range between 100/240 V AC) into the stabilized DC supply required to power the submersible preamplifier via a voltage offset applied to the intermediate co-axial cable. The coupler then strips the DC component from the signal output from the preamplifier so that the DC Coupler's BNC connector outputs only the RF hydrophone signal.

### Specification

AC supply voltage	Wide range input 100/120/230/240V AC (switchable) 50/60 Hz
Input impedance	50 $\Omega$
Output impedance	50 $\Omega$
VSWR	$\leq 1.2 : 1$
Power consumption	1.6 W
Operating temperature range	0 °C to 50 °C
Terminations	SMC (input) BNC (output)
Maximum dimensions	185 mm (length) 109 mm (width) 45 mm (height)
Weight	1020 g

*All information is based on results gained from experience and tests, and is believed to be accurate but is given without acceptance of liability for loss or damage attributable to reliance thereon as conditions of use lie outside the control of Precision Acoustics Ltd.*