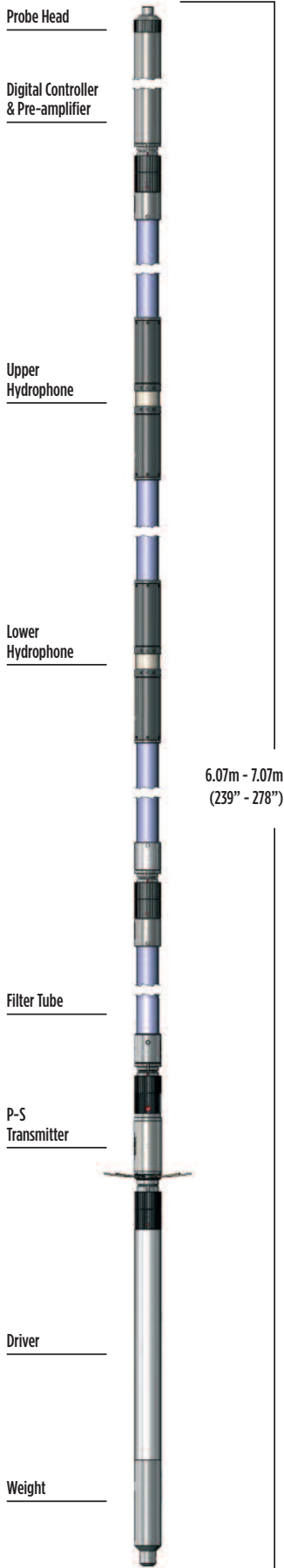


PS Logger



PS Logger Probe

The PS Logger probe is a low-frequency acoustic sonde designed to measure compressional and shear-wave velocities in soils and soft rock formations.

It operates using indirect excitation rather than mode conversion as in a conventional sonic. It is capable of acquiring high resolution P and S wave data in borehole depths of up to 600m in water.

Principle of Measurement:

The PS Logger probe contains a unique design of powerful hammer source and two receivers, separated by acoustic damping tubes. To acquire data, the probe is stopped at the required depth and the source is fired under surface command. Firing causes a solenoid-operated shuttle aligned across the borehole axis to strike plates on opposite sides of the probe in turn, setting up a pressure doublet in the surrounding fluid. The resultant fluid motion produces a tube wave at the borehole wall with velocity close to the shear velocity of the formation together with a compressional wave.

As the waves propagate parallel to the borehole axis, they set up corresponding fluid movements that are detected by the two neutral buoyancy 3D hydrophone receivers and geophones, allowing the wave velocity to be determined.

The facility to stack multiple shots and filter the data as in normal seismic data acquisition is included in the operating software.

SPECIFICATION:

Features

- High energy shear-wave source has typically 20x power of conventional sonic probes
- Low-frequency measurement, more representative of engineering situations
- Stacking of multiple shots
- Probe separates for shipping
- Real-time wavelet (wiggle) display
- Compatible with Robertson Geo Micrologger

Measurements

- Formation compressional wave velocity
- Formation shear-wave velocity

Applications

- Site Investigation - foundation studies, windfarms, offshore structures, dam safety
- Physical properties of soil/rock - shear modulus, bulk modulus, compressibility and Poission's ratio
- Earthquake engineering - characterization of strong motion sites
- Velocity control for seismic reflection surveys
- Engineering

Operating Conditions

- Borehole type: open-hole, water-filled
- Recommended Logging Speed: Static measurements

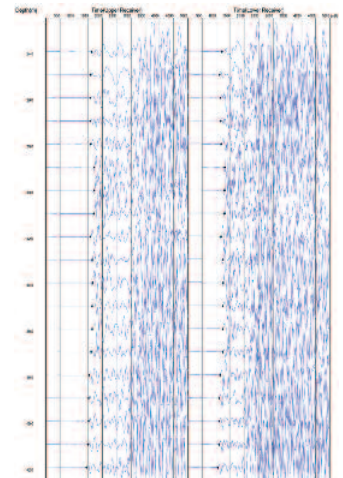
Specifications

- Diameter: 50mm
- Assembled length: 6.07m - 7.07m (1 or 2m filter)
- Shipping case length: 1.45m (4.75ft)
supplied in two transport cases
- Assembled weight: 26.5kg - 28kg (1 or 2m filter)
- Max. temperature: 70°C
- Max. pressure: 6.5MPa
- Transducer type: solenoid and hammer
- Receiver type: 3D hydrophones (p), geophones (s)
- Receiver spacing: 1000mm (3.28ft)
- Waveform acquisition period: 5.12mS to 409.6mS
- Sampling: 2.5µs minimum
- Down-hole gain: 0db to 42db (surface control)

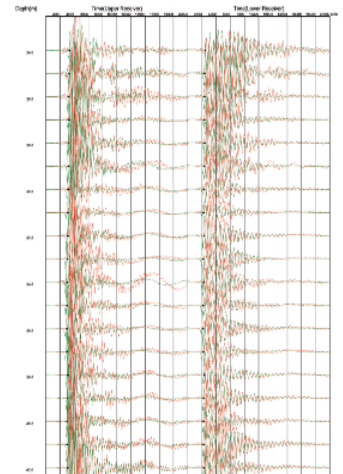
Part Numbers

- 1002244 PS Logger probe in carrying case

P Waves



S Waves



Examples of logging data