



DDS | Dual Downhole System

The Dual Downhole System (DDS) is used to receive P- and S-waves in dry and water filled boreholes in order to determine interval velocities. The DDS consists of two stations each equipped with tri-axial sensors. The stations are mechanically connected to each other to ensure the alignment of all horizontal sensors. Both stations are coupled to the borehole wall by a pneumatic clamping system (inflatable bladder). Air is supplied to the DDS through an electro-pneumatic hybrid cable with a Kevlar tension string. A magnetic compass shows azimuthal deviation to North and can be used to get the orientation of the DDS in the borehole. The cable is terminated by a connector to the seismograph.



Dual downhole system DDS with cable drum, pneumatic clamping mechanism (inflatable bladder) and compass.

Technical Details

Natural sensor frequency: 10 Hz
(others on request)
Sensor arrangement: Tri-axial
Operational depth: 100 m
Number of stations: 2
Station interval: 2 m
Station length: 620 mm
Station diameter: 65 mm
Station weight: 2.5 kg
Cable weight per metre: 145 g
Cable strength: 2150 N
Borehole diameter: 75 mm
Clamping system: Inflatable bladder
Orientation: Magnetic compass (+/-2.5°)
Depth indicator: Cable marking every 2 m
Connector: To any seismograph
Storage: On drum

DDS versus BGK

DDS (dual downhole system)	BGK (borehole geophone)
Same source signal at each station	Source signal may vary from depth to depth
Interval velocity independent of trigger time	Accurate trigger time needed
Crosscorrelation traveltime analysis can be used to determine interval velocity	Errorneous traveltime picks may lead to unrealistic velocities



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