Geo-Source 200 & 400 FW

Fresh Water Multi-Tip Sparker System

Geo-Source 200 FW

Operational Features

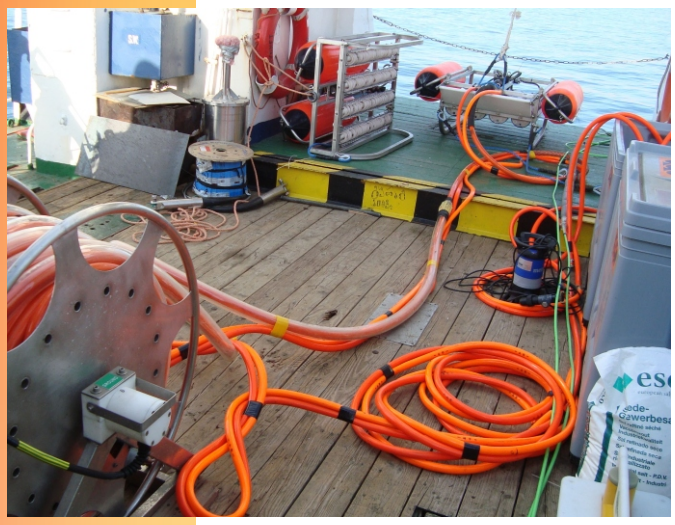
- Ultra hi-res seismic source for fresh water environment
- Vertical resolution up to 30 cm
- Water depths from 2 to 1500 m
- Penetration to 400 ms below bottom
- Overall performance depending on acoustic characteristics of vessel, geology and acquisition conditions

Applications

- Lake & River surveys
- Port surveys
- Site & route surveys
- Inland water engineering
- Mineral exploration

How does a sparker work in fresh water?

The four electrode modules (100 tips each) are enclosed in flexible sleeves. Salt water is pumped through these sleeves to provide the saline environment which is needed to create a plasma bubble at the sparker tips. The circulating salt water also removes the gases generated at each discharge. The closed circuit comprises an onboard salt water reservoir and pump, supply and return hoses to and from the source, and a manifold system within the source frame.



Examples of Records

To see examples of our sparker records, please visit "downloads" on our website: ***www.geo-spark.com***

Geo-Source 200 FW and 400 FW

The Geo-Source 200 FW and the bigger 400 FW have been designed for operation either with the classic Geo-Spark 1000 or with new portable Geo-Spark 2000X pulsed power supply. Obviously the source can also be used with the larger powersupplies provided you use the appropriate energy settings

Sustainable fresh water sparkers would not exist without our Preserving Electrode Mode

Since the tips of the freshwater sparker are enclosed in the flexible sleeves it would be very labourious to trim the tips every 2 hours, ...like you should do with an ordinary sparker

Since the Preserving Electrode Mode reduces the wear of the electrode tips to practically zero....., it becomes practically feasible to mount the tips in flexible sleeves filled with salt water.

Zero tip wear is also essential for the acoustic repeatability of the pulse, which depends largely on a constant, unaltered electrode surface.

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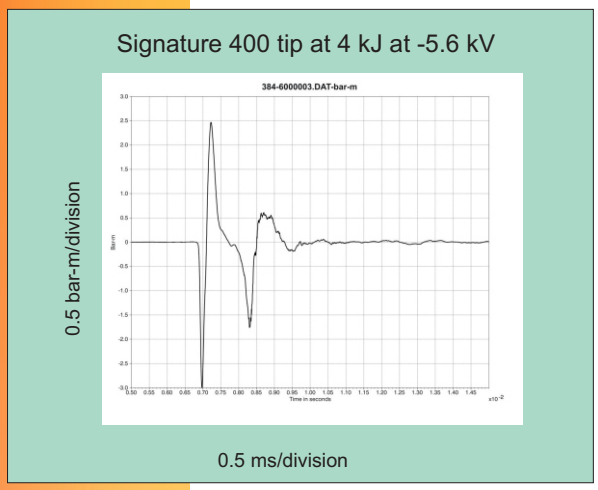
Technical Specifications

Geo-Source 400 FW

Signature 400 tip at 4 kJ at -5.6 kV



Total Control of All Parameters

The advanced Geo-Source 200 / 400 FW design gives you total control of:

- **Joules per tip**
- **Number of tips actively in use**
- **Source depth and geometry**

- Two/four floats provide a stable towing configuration and insure the proper depth of the electrode tips at 20 -30 cm below the surface. This is critical to achieve constructive interference between the primary pulse and its own sea-surface reflection (surface ghost).
- The electrode modules are evenly spaced in a planar array of 1.0 m x 2.0 m. This geometry not only enhances the downward projection of the acoustic energy, it also reduces the primary pulse length, since all tips are perfectly in phase.
- Four individually powered electrode modules of 50 or 100 tips each allow the distribution of energy from the pulsed power supply over 100, 200, 300 or 400 tips.
- Each tip has an exposed surface of 1.4 mm^2, suitable for 10 (=ten) Joules per tip.
- The recommended maximum energy for optimum results in high resolution work with the Geo-Source 200 FW is 500 to 1000 Joules maximum
- The Geo-Source 400 FW can go to 4000 Joules

HV Cable Reel with Rotating HV Contacts

Floating coaxial HV tow cable

The Geo-Source 200/ 400 FW is towed by a quality, Kevlar-reinforced, coaxial power/tow cable, with stainless steel Kellum towing grip. It is designed to have a very low self-inductance in order to preserve the high dI/dt pulse output of the Geo-Spark PPS.

The last 20 m of the cable are contained in 51 mm PU hose providing sufficient buoyancy to keep the cable afloat at the surface.

The cable is connected to the yellow decklead by two rotational HV contacts, which allow the cable reel to be operated without disconnecting anything

This feature not only increases the general safety of the operation but eliminates also the need of attaching buoys to the cable during deployment.

The coaxial structure of the HV power cable is 100 % safe and reduces all electromagnetic interference to the