Pre-Amplifier System

Manual of Operation

PHOENIX GEOPHYSICS

Contents

System Description

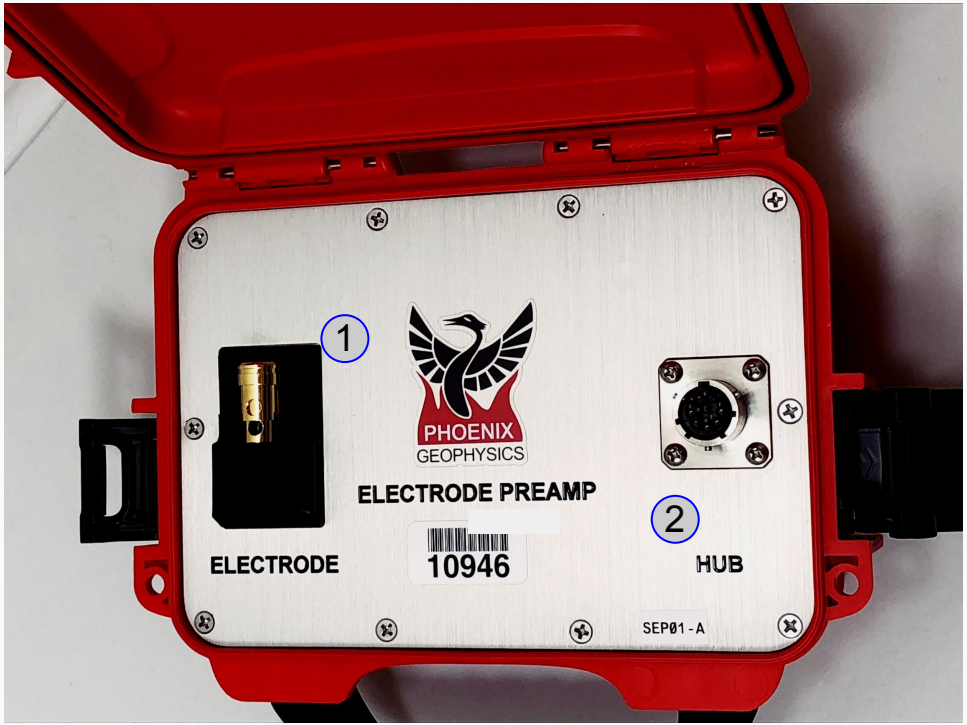
The system is designed to allow recording in places where the contact resistance is really high (on the order of Megaohms). To achieve this, The pre-amplification system provides a high input impedance. Each pre-amplifier is protected by a high voltage arrester to prevent damage due to static discharges or other high voltage transients.

When the contact resistance of electrodes is high, electrodes and electric lines act as ultra-broadband sensors of external noise. For this reason the system also comes equipped with low pass filters at each pre-amplification unit, preventing such noise from saturating the inputs of the receiver.

Electrode Preamp

The Electrode Preamplifier is designed to connect the electrodes to the Receiver through a Pre-Amplified, electrically protected interface.

1. **Electrode** connector
2. Preamp to **Hub** connector (8-pin cable)



Electrode Preamp Hub

The Electrode Preamp Hub concentrates the signals from the preamplifiers and interconnects them to the Receiver

1. Ex / Ey **Receiver** connector
2. Ground Electrode connector
3. 12VDC power input
4. E1 (Ex) **N**orth and **S**outh Preamplifier connectors (8-pin cables)
5. E2 (Ey) **E**ast and **W**est Preamplifier connectors (8-pin cables)

Tech Specs

Input impedance	500 MΩ
Suggested operating frequency range	1000 Hz - 1000s
Suggested contact resistance range	10 Ω - 5 MΩ
Signal voltage range	+/- 10 V
Power voltage range (centralized, 4 electrodes powered from the hub)	10.5 - 13.8 V
Operating temperature range	-25 °C to +70 °C
Approximate cut off frequency of the low pass filter (factory calibrated)	12.5 kHz (2-pole)
Transient arrester test passed	10x Human model ESD air discharges separated by 1 second each

For more information

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