

Acoustic Fluid Logger IV



Onscreen above, the red line is the compressed gas shot down the wellbore, the blue line is the fluid level, the green line is a second reflection of the fluid.

Easy computerized fluid levels

When you need to know the fluid level in an oil or gas well, the **Acoustic Fluid Logger IV** from Sage Technologies delivers, then lets you use that fluid level data to diagnose problems and predict a well's potential.

The **Acoustic Fluid Logger IV** finds the depth and number of joints to fluid level, and displays both the fluid level and gas-free fluid level on your computer screen. Software also allows you to calculate bottom hole pressure and pump intake pressure, and to predict production increases.

Sage AFL software uses graphical output to increase understanding of events within the wellbore. And the easy to use Windows-based software can be installed on multiple computers at no extra charge. Storing well data for comparison over time is as simple as saving files and labelling each with an identifier such as the well name and date of test. For sharing and emailing well data, send files in their original .dat filename or save as a .pdf file.

Shooting and saving fluid levels over time builds a comparative record on each well, a valuable tool for well diagnosis and treatment.



AFL IV —included components

- Acoustic Fluid Logger IV
- Pressure Pulse Gas Gun, 1,500 psi
- Sage AFL software on USB stick
- 1,500 psi quick-connect gauge
- 200 psi quick-connect gauge for measuring casing pressure
- 2.5 lb. CO₂ bottle
- CO₂ Charge hose
- CO₂ refill adapter
- Carrying case
- 25-ft. microphone cable
- USB cable
- Wall-mount battery charger
- Spanner wrench, O-rings and maintenance tools
- Operator's manual

Optional component:

- Pressure transducer: 1,500 psi

Fluid level monitoring increases production

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Acoustic Fluid Logger IV

Delivers a fuller picture of fluid level analysis



The **Acoustic Fluid Logger IV** handles both deep and shallow wells easily, and can deliver fluid levels on all well configurations. Tests can be run down the annulus, down the tubing when a packer is present, and down open casing. During a standard fluid level test, **Pressure Pulse Gas Gun** fires a compressed gas shot down the wellbore. The resulting reflections from the collars and fluid are recorded and displayed on your computer screen as a fluid level shot which can be zoomed, studied and stored.

The Pressure Pulse Gas Gun, with a 1,500 psi pressure rating, is a stainless steel large-chambered device with a rugged side-to-side load-fire valve and a sensitive internal microphone. Its compact design and its accompanying carrying case ensure easy transport to the wellsite. A 2.5 lb. CO₂ bottle and stab-in charge hose allow you to charge the gun quickly before each fluid level shot.



A Swagelok quick-connect on top of the gun allows easy swap of the standard gauge for a 200 psi gauge, for measurement of casing pressure. The optional 1,500 **Pressure Transducer** also uses the gun's quick-connect for measuring surface pressure, which allows the Sage AFL software to calculate gas afterflow.

The **Pressure Transducer** and cable are shown at left stored inside the pocket of the AFL IV recorder. The Pressure Transducer is a high quality stainless steel media isolated pressure sensor, intended for the use of measurement of liquids and gases. The Sage Pressure Transducer offers a one-piece stainless steel sensing element free of welds, internal o-rings or oil fill. This translates into rugged construction, high cycle life and a wide range of media compatibility. The Swagelok quick-connect is watertight and the electrical output is via 4-20ma current loop for outstanding noise immunity.

Sage AFL Software Features

- **Determines Fluid Level depth by choice of 3 methods:** *Constant Acoustic Velocity* which measures travel time between shot start and fluid level used in conjunction with acoustic velocity to determine fluid depth, *Joint Length* which determines the number of joints to fluid level, and *Constant Depth* which uses event of known depth such as tubing anchor or cased-hole to open-hole transition to calculate depth to fluid.
- **Calculated Data:** Fluid Level, Gas Free Fluid Level, Pump Intake Pressure, Bottom Hole Pressure.
- **Calculated Production Results:** Enter the Static Reservoir pressure, and Pump Intake Pressure to estimate Production Results of oil and water if the well's producing pressure is lowered or raised.
- **Well Analysis** with the Acoustic Fluid Logger IV allows closer inspection of digital echoes to help identify wellbore problems such as tubing leaks, casing leaks and other costly wellbore events.

Works with your field computer—no captive computer in system

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