QUARTERBACK

Brochure No. 401a

Well Integrity Service

XD2 - XSOUND Liquid Level Survey

Liquid Level Measurement

The **XSOUND** equipment consisting of a Well Analyzer is used in conjunction with a compact Gas Gun/microphone assembly to determine the liquid level depth in a well. An acoustic pulse is generated at the surface of the well. The acoustic pulse travels through the gas and is reflected by changes in area including tubing collars and the liquid level.

The TML software automatically processes this acoustic data to determine liquid level depth.

This portable system is based on a precision analog to digital converter controlled by stand alone Model H analyzer with battery powered microprocessor controlled digital acoustic signal processor, recorder and display unit. When installed and used in accordance with instructions it is designed for operation in hazardous environments.

- For annulus kill/corrosion inhibitor fluid displacement volume determination before top up

Applications

Determine liquid level in well tubing and casing;

- Determine static tubing liquid level in shut in well
- Determine liquid level in well casing with Sustained casing pressure SCP or failing GLV issues

Benefits

- Quick determination of liquid level in tubing and well annuli
- No in-well intervention by wireline or slickline
- Combinable with XAMINE measurements to give valuable data for liquid leaks
- Easily transportable, light weight unit
- Simple rig up and operation

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Description of Features

XSOUND service is a surface deployed equipment designed to detect liquid level depth in tubing and annulus-A/B/C of a well.

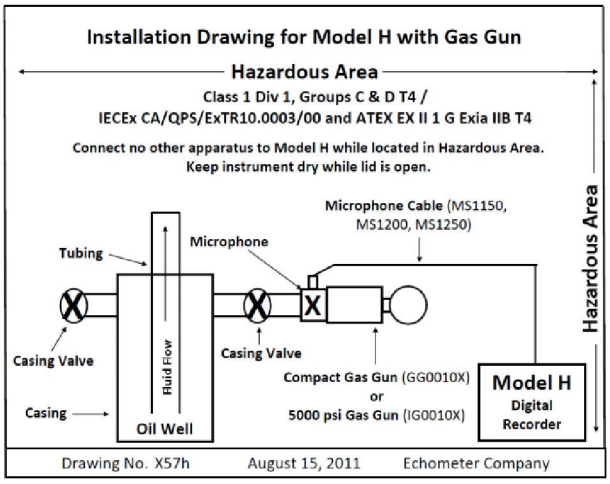
The equipment consists of gas gun/microphone assembly install to the ½" NPTF port on top of a tree cap or a casing wing valve, and a Well Analyzer data acquisition unit.

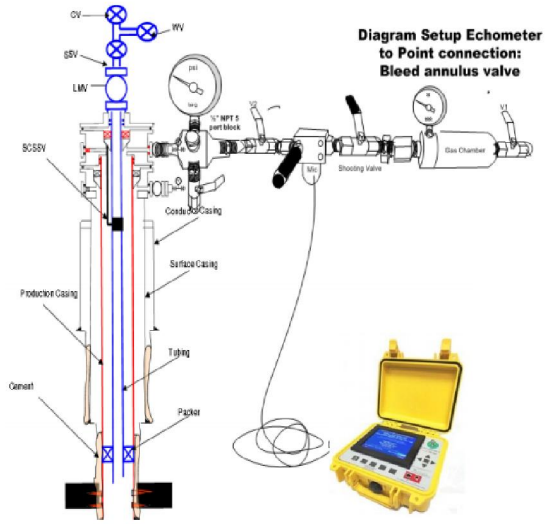
The gas gun with its 164cm3 (10cu.in) volume gas chamber generates an acoustic pulse which travels down the casing annulus/tubing gas and is reflected by collars and the liquid level. The reflected acoustic pulse is converted into an electrical signal by the gas gun microphone.

The compact gas gun can be operated in explosion or implosion mode. High pressure gas from the well can be released into the compact gas gun gas chamber to create the initial pulse for the implosion mode while an external gas supply is charge into the gas gun gas chamber to generate the acoustic pulse for the explosion mode.

Specifications

Dimensions	L 52 mm	W 52 mm	H 30 mm
Weight	15 kg (total) – Gas Gun & Analyzer		
Gas Gun assembly	5000 psi Gas Gun unit -EX Zone 1		
- Max working pressure	5000 psi	345 bar	
- Connection inlet	½" NPTM		
- Cabling	50m Shielded cable		
Data Acquisition Unit	Model H - EX Zone 1		
- Other Accessory	2200 psi nitrogen gas cylinder c/w gas cylinder rack & 3K psi HP Hose		





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