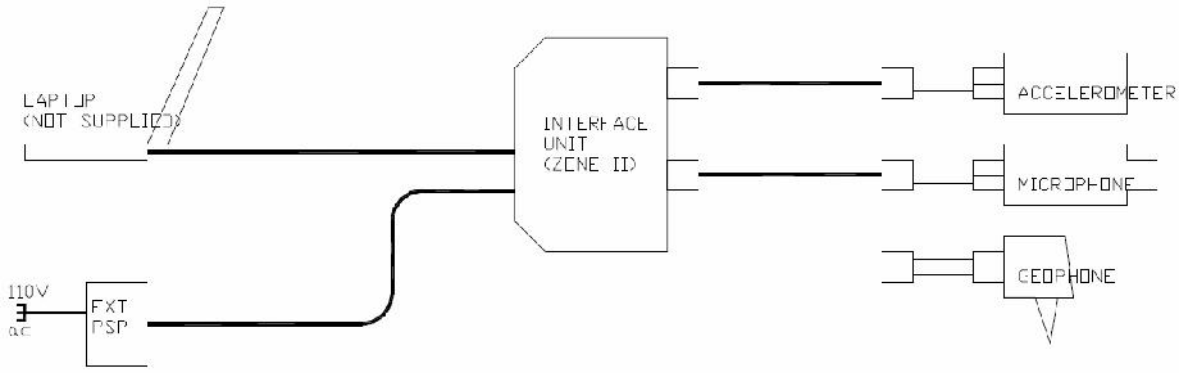
Description

The Surface Shot Detection System (SSDS-B) is a two-channel recording device that accepts inputs from a variety of sensors, records the information on a Diskette or Minidisk and allows one to print the output to a paper log. Records can be kept on Diskette and played back for analysis.

The device uses two sensors, a microphone and an accelerometer attached to the tubing string. Alternative sensors such as hydrophone, geophone, pump stroke counters or pressure transducers may also be used but are not supplied with the device.

The complete set of equipment is packaged in two Pelikan type water type cases.



Ratings

Max. Power Consumption (not including Lap Top) 8.00 W at 4.6 VDC
Battery Life 10 hr
Operating Temperature 32°F to 150°F (0°C to +65°C)
Channel Distortion 65 dB max
Channel/Channel Crosstalk 55 dB max
Transducer Frequency Response 20 Hz to 1.2 kHz
Voice Frequency Response 20 Hz to 2 kHz

Recording Equipment

A Dell 8100 Laptop (not supplied with the unit) or equivalent is used as the recording unit. Signals as low as 10 Hz can be recorded with no attenuation loss. Each Diskette may record up to 4 hours or 8 hours depending on the sampling mode and a microphone is provided for recording additional voice-over information on the Diskette. The earphones are provided and intended for monitoring the voice signals rather than listening to the sensors. The unit may be powered from the USP outlet of the laptop; however, a separate power supply is supplied and is recommended.

Sensors

Accelerometer

The accelerometer sensor is rigidly clamped to the tubing to measure the transmitted vibrations. The sensor will respond to accelerations up to 40 G and has a resolution of 0.005 G.

Microphone

The microphone responds to differential changes in pressure rather than the absolute pressure applied.
The dynamic range is ±55 psi with a resolution at 0.001 psi. The working rating is 10,000 psi but the manufacturer does not guarantee the accuracy of the response above 1000 psi. The microphone should preferentially be installed in the tubing line at the choke manifold or alternatively on the annulus.

Cables and Connectors

A seismic oil resistant line cable is used with watertight connectors. The cables and plugs are colour coded to allow easy identification on the rig floor.

Specifications Microphone	Accelerometer
Specifications	Specifications
▪ Zone II	▪ Zone II
▪ Non H2S	▪ Non H2S
▪ Range (±2.5 V output) psi 50	▪ Range (for ±5 0utput) G +50
▪ Maximum Pressure (slow) psi 1000	▪ Resolution G 0.005
▪ Maximum Static Pressure psi 10,000	▪ Sensitivity (±5%) mV/G 100
▪ Resolution (rms) psi 0.002	▪ Frequency Range (±10%) Hz 0.7 to 5000
▪ Sensitivity mV/psi 100	▪ Temperature Range °F -50 to +250
▪ Resonant Frequency kHz 250	▪ Vibration/Shock (protected) G 500/5000
▪ Low Frequency (-5%) Hz	▪ Size (dia x height) 30mm x 64 mm
▪ Rise Time msec 2	▪ Weight 0.200Kgs
▪ Discharge Time Constant s ^{3}1	▪ Case Material SS
▪ Linearity %FS 1	▪ Sealing hermetic welded
▪ Acceleration Sensitivity psi/g 0.002	
▪ Temperature Range °F -100 to +275	
▪ Sealing welded	
▪ Case/Diaphragm-Material SS	
▪ Weight 0.01Kgs	
▪ Size (dia x height) 30mm x 64mm	