

Directional Probes Overview

What are the Directional Probes?

- **DM Directional Module**
- **PM Position Monitor**
- PCD Pressure Case DEP II
- **DEP Directional Electronic Probe**
- **DEP II Directional Electronic Probe II**
- MEP Mud-pulse Electronic Probe
- MEP II Mud-pulse Electronic Probe II

Position Monitor

- Primarily used for negative pulse services.
- Electronics built into a 2" O.D. pressure case.
- Internal calibration done in Houston only.
- Calibrated for a range of temperatures.
- Dumb sensor calibration factors have to manually stored in INSITE.
- Requires a internal pressure transducer to determine pumps on/pumps off conditions.
- Quartz hinged accelerometers.

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Directional Module

- Primarily used for positive pulse services.
- Also replacing the Position Monitor (PM) in negative pulse.
- Electronics built into a 2" O.D. pressure case.
- Internal calibration done in Houston only.
- Normally used as a hot hole tool (Solar 175).
- 1553 Serial Manchester communications only.
- Kemlon connectors found on both ends.
- Serial No. and Part No. always indicate top of tool.
- High side tool face found on the bottom (alignment hole).

CAUTION: USING THE WRONG POSITION CAN TURN INCLINATION FROM 0° TO 180°.

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Pressure Case DEP II

4 Stage Evolution:

- Pressure Case DEP II (PCD)
- Pressure Case DEP II Kemlon (PCD K)
- Pressure Case DEP II Ruggedized (PCD R)
- PCD-C
- ♦ All types have electronics built into a 1-3/4" pressure case.
- Interfaces with FEWD tools
- Custom Data String (CDS) Capability, MEP Mode, GAM Mode, EMT Mode, MGT Mode.

PCD

- 10-pin amphenol connector on top
- 7-pin amphenol connector on bottom
- High side tool face found on bottom (flat area).
- RS 232 serial communications on top.
- Uses coil cord connectors if gamma services included.

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Pressure Case DEP II

PCD-K

- 10-pin amphenol connector on top, kemlon connector on bottom.
- Allows Manchester 1553 communications to FE tools i.e. EWR-P4, CNP ...
- Problems were encountered with cracked kemlon connectors.

PCD-R

- Same type of connector setup as with the PCD K.
- Kemlon boot was re-designed.

PCD-C

Kemlon boot on both sides

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Directional Electronic Probe

Stage Evolution:

- Directional Electronic Probe (DEP)
- Directional Electronic Probe II (DEP II)
- All tools require manual insertion into a 1-3/4" sensor pressure case.
- From this point onwards, all directional modes were electronically switched using a surface computer.

DEP

- 7 pin amphenol connector on top.
- High side tool face found on bottom (T-slot) which indicates Gx position.
- Option available to take pumps-off survey by adding a lithium battery on upper housing.

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Directional Electronic Probe

♦ DEP II

- 10-pin amphenol connector on top, 7-pin amphenol connector on bottom.
- Bottom coil cord connected to a brass crossover and kemion connector.
- Lithium battery replaced with Manchester 1553 communications board.
- Allowed capability to attached FE tools if required.
- Currently being phased out and replaced with PCD-R.
- Custom Data String (CDS) Capability, MEP Mode, GAM Mode, EMT Mode, MGT Mode.

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Mud Pulse Electronic Probe

Stage Evolution:

- Mud Pulse Electronic Probe (MEP)
- Mud Pulse Electronic Probe II (MEP II)
- All tools require manual insertion into a 1-3/4" sensor pressure case.
- MEP
 - ♦ 1st generation Sperry-Sun Directional probe.
 - 7-pin amphenol connector on top.
 - High side tool face found on bottom (T-slot) which indicates Gx position.
 - Manual switching for directional modes using a screwdriver.

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