

## Positive Pulse - Micro MWD

### Features

- Tool string retrievable through minimum 2.0" restriction
- Low overall cost of ownership, including single low cost battery
- Short tool string, only 7ft 5in in length
- Surveys at every connection plus toolfaces
- No specialized MWD personnel required
- High quality ruggedized tri-axial sensor
- Downhole reprogrammable

### Applications

- Directional Drilling
- Performance Drilling
- Correction Runs
- Orientation

### Telemetry

- MaxWell patented positive pulse transmitter
- Low power consumption saving on battery cost
- Self cleaning design protects against LCM, sand and drilling fines
- Simple self test of surface and downhole equipment
- Compact transmitter unit - fast maintenance cycle

### Surface System

- All equipment Zone 1 approved
- Fast rig up to doghouse
- Windows based operating system
- Simple to use
- No license fees / dongle free



Flow Sleeve  
Assembly

Electronics /  
Battery  
Assembly

Centralizer  
Assembly



## Positive Pulse - Micro MWD

### Features

Parameter	Range	Resolution	Units
Inclination	0-180	+/- 0.1	degree
Azimuth	0-360	+/- 1.0	degree
Toolface	0-360	+/- 1.0	degree
Temperature	0-150	3	Celcius

Full Accuracy MWD measurements for SWD

Bus based electronics permit easy integration of other sensors

### Data Transmission

Type:	Positive Pulse	degree
Coding:	Compact error checked transmission	
Programming:	Four Selectable States	degree
Update Rates:	Toolface every 60s	Celcius
Static Survey:	Computed or Raw transmission	

### Environmental

Shock	1000g, 0.5msec, 1/2sine
Vibration	30g Peak, 50 to 500 Hz
Temperature	0-150°C (32-302°F)
Pressure	15,000 psi
LCM tolerance	< 50ppb medium nut plug
Sand Content	<1% by Volume recommended

### Tool Details

#### Dimensions

Length	7ft 5in (2.26m)
Diameter	1.75 inches (45mm)
Weight	44 lbs (20kg)

#### Power

Compact Battery containing long life 'C' Lithium cells

Duration:	SWD mode - 10 days
	Toolface Mode - 3 days

#### Memory

Storage (non-volatile) for up to 1000 surveys

### Collar Size

Collar OD	4.75	6.50	8.00
Collar ID	2 11/16	3 1/4	4
Min Flow (mud)	70	215	500
Max Flow (mud)	290	715	1250
Pressure Drop	←----- 60-150 psi -----→		
Other collar sizes available on request			

