

# TeleScope ICE

## UltraHT MWD service

### APPLICATIONS

- Transmission of multiple real-time measurements during high-speed drilling of HT and ultraHT wells
- Well placement in HT and ultraHT reservoirs
- Harsh and complex drilling environments, including deep water and extended-reach drilling

### BENEFITS

- Expands normal operating window to 200 degC [392 degF]
- Optimizes well trajectory and landing with precise real-time data
- Mitigates risk with real-time drilling dynamics
- Reduces well construction time and cost
- Maximizes ROP while obtaining high-density data

### FEATURES

- Proprietary ultraHT-rated electronics
- Downhole power generation
- High-density data transmission of
  - Continuous and static survey
  - Internal and annular pressure
  - Azimuthal gamma ray
  - Shock and vibration
- Compatible with PowerDrive ICE\* ultraHT RSS and all other Schlumberger BHA components

The TeleScope ICE\* ultraHT MWD service reliably transmits survey and formation evaluation data at high speed in harsh drilling conditions. Designed with proprietary ultraHT-rated electronics, the TeleScope ICE service reliably provides critical data for real-time drilling optimization and well placement.

### Position your ultraHT well with precision

The TeleScope ICE service provides azimuthal gamma ray, continuous direction and inclination, annular pressure, and drilling dynamics data to help you geosteer accurately and mitigate drilling risk in ultraHT wells. This service maximizes the amount of information available and optimizes well trajectory in real time to effectively target productive zones.

### Reduce well construction time and cost

Receiving real-time measurements in ultraHT wells eliminates the need for a BHA trip to remove tools with measurement electronics and a gyro trip to determine wellbore position.

The proprietary electronics in the TeleScope ICE service have been verified to

- 200 degC for 35,000 hours
- 2 million shocks at 200 degC.

The MWD service is turbine-powered, which prevents trips to replace batteries. By streamlining operations to develop ultraHT wells, the TeleScope ICE service saves rig time and well construction cost while providing critical measurements for real-time well placement and risk mitigation.



# TeleScope ICE

## Mechanical Specifications

Nominal OD, in [cm]	4.75 [12]	6.75 [17.1]
Max. OD, in [cm]	5.05 [12.8]	6.89 [17.5]
Collar length, ft [m]	31.9 [9.7]	31.9 [9.7]
Hole size, in [cm]	5¼ to 6¼ [14.6 to 17.14]	8¾ to 9¾ [21.27 to 25.08]
Weight, lbm [kg]	1,540 [700]	2,650 [1,200]
Max. dogleg		
Rotating, °/100 ft	15 (at up to 150 rpm)	8 (at up to 150 rpm)
Sliding, °/100 ft	30	16
Flow range, galUS/min [L/min]	150 to 400 [568 to 1,514]	275 to 800 [1,041 to 3,028]
Power supply	Downhole turbine	
Lost circulation material tolerance, lbm/bbl [kg/m <sup>3</sup> ]	Medium nut plug, 50 [142.5]	
Max. operating temperature, degF [degC]	392 [200]	
Operating frequency range, Hz	0.5 to 13.5	
Max. external pressure, psi [MPa]	30,000 [207]	
Max. shock	30 min at Shock Level 3 (>10 Hz above 50 $g_n$ ) 200,000 cumulative shocks above 50 $g_n$	

## Measurements Specifications

Directional	Stationary	Continuous
Inclination accuracy, °	±0.1 (1 $\sigma$ )	±0.2 (1 $\sigma$ )
Azimuth accuracy, °	±1 (1 $\sigma$ ) above 5° inclination	±2 (1 $\sigma$ )
Toolface accuracy, °	±1 (1 $\sigma$ )	±1 (1 $\sigma$ )

## Gamma Ray (Average and Quadrant)

Accuracy, %	±5
Range, gAPI	0 to 1,024
Statistical repeatability	±5 gAPI at 100 gAPI and 100 ft/h, 3-point average
Vertical resolution, in [cm]	12 [30.5]

## Annular and Internal Pressure Measurement

Accuracy, psi [kPa]	±30 [206.8]
Range, psi [kPa]	0 to 30,000 [0 to 206,843]
Resolution, psi [kPa]	±1 [±6.8]

## Drilling Mechanics Measurements

Vibration	
Range, $g_n$	0 to 60
Accuracy, $g_n$	±1
Resolution, $g_n$	±0.125
Shock	
Range, $g_n$	±500
Accuracy, %	±10
Resolution, $g_n$	1
Collar rotation	
Range, $g_n$	0 to 400
Accuracy, %	±10
Resolution, rpm	1

[slb.com/TeleScopeICE](http://slb.com/TeleScopeICE)

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