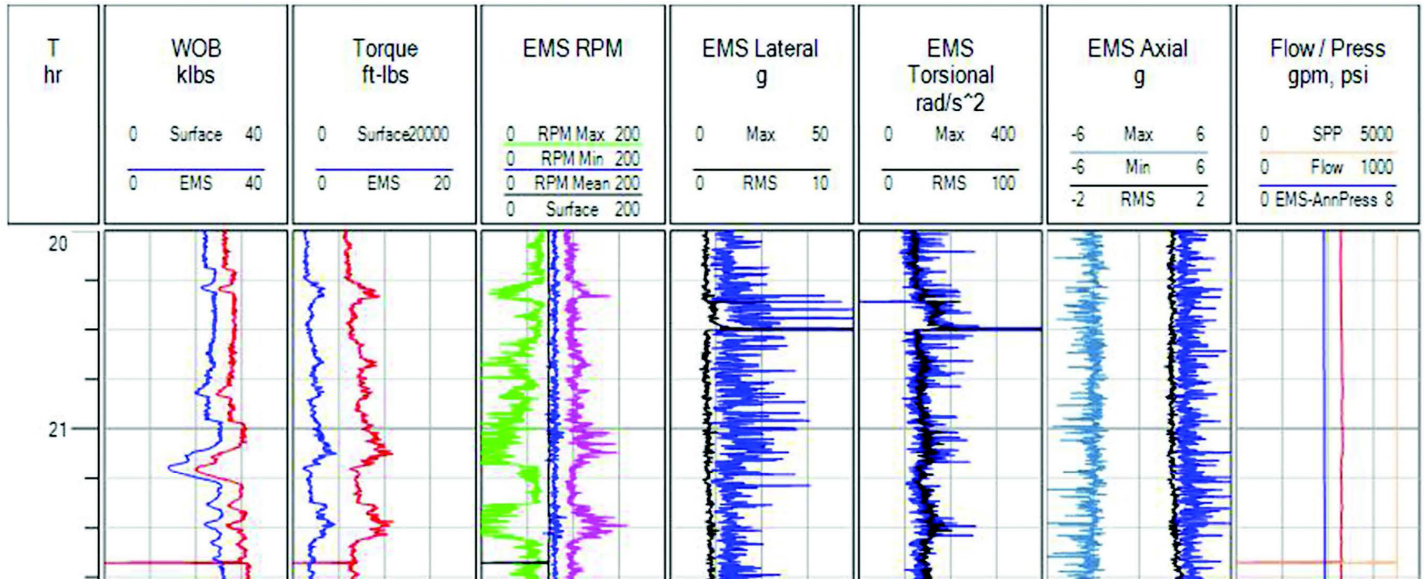


# BlackBox/BlackStream 6.75-in. EMS Downhole Measurement Tool



The 6.75-in. BlackBox™ and BlackStream™ enhanced measurement system (EMS) tools, available in either memory recording or IntelliServ™ real-time data streaming configurations, are capable of an array of measurements, including multi-axis vibration, load, pressure, bending, and rotation. Our collar-based EMS tool helps us deliver custom solutions for drilling challenges such as stick-slip, whirl, and borehole quality to optimize drilling performance and reduce well delivery costs.

## Features and Benefits

### No nonmagnetic requirements

- Does not create interference with magnetic materials downhole

### Versatile, short sub length

- Allows for multiple placement options in the BHA or drillstring

### Self-contained power supply

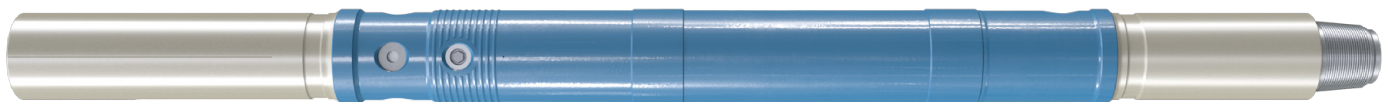
- Allows tool to be run independent of other downhole equipment

### Patented depth/pressure compensation

- Ensures downhole weight and torque measurements of the highest accuracy

### High-resolution burst data

- Allows for higher memory-data resolution than real-time tools



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## Measurement Type

Lateral vibration (X-axis , Y-axis)	-120 to +120 G
Axial vibration (Z-axis)	-35 to +35 G
Torsional vibration	-5,000 to +5,000 rad/s <sup>2</sup>
RPM	-1,200 to +1,200 RPM
Weight	-120 to +240 klbs
Torque	-20 to +20 kft-lbs
Annular pressure	0 to 20,000 psi
Temperature	-40 to 302°F (-40 to 150°C)

## General Specifications

Nominal OD/ID	6.75 in./2.25 in.
Length	7.5 ft, 9.5 ft
Tool connection	BlackBox: NC50 box/pin (4.5-in. IF) NC46 available BlackStream: GPDS50 Box / NC50 Pin
Material	High-strength steel alloy
Rated dogleg	Rotating: 8°/100 ft Sliding: 15°/100 ft
Rated pressure	20,000 psi
Rated temperature	150°C
Max Tension	900k lbs
Max Flow Rate	900 GPM
Battery life	BlackBox: Up to 350 hr BlackStream: Up to 225Hours
Memory storage	350 hr continuous data (typical) 1.5 hr high-speed data (typical) Stats capture/record rate = 0.4 Hz
Data Collection	Stats capture/record rate= 0.4 Hz Burst data record rate = 800 Hz
Burst Data	10-sec. window every 15 min.
Pressure Drop:	38 psi @ 900 gpm and 11 ppg mud