

BlackBox/BlackStream 8.25-in. EMS Downhole Measurement Tool

The 8.25-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.

General Specification

Measurement Type	Range	Sensor Accuracy	Sensor Resolution
Lateral vibration (X-axis, Y-axis)	-120 to +120 g	1% FS	0.0042 g
Axial vibration (Z-axis)	-35 to +35 g	1% FS	0.0013 g
Torsional vibration	-5,000 to +5,000 rad/s ²	1% FS	0.62 rad/s ²
RPM	-1,200 to +1,200 RPM	5 RPM	0.05 RPM
Weight	-150 to +350 klb	2.5% FS	11.5 lb
Torque	-60 to +60 ft-lb	2% FS	1.9 ft-lb
Annular pressure	0 to +25,000 psi	0.4% FS	0.0051 psi
Internal pressure	0 to +25,000 psi	0.4% FS	0.0051 psi
Temperature	-40 to 302°F (-40 to 150°C)	37°F (3°C)	32°F (0.13°C)
Bending (2-axis)	-80 to +80 kft-lb	2% FS	2.07 ft-lb

BlackBox/BlackStream

Nominal OD	8.00 in. at tool joint
Max OD	9.00 in.
Nominal ID	3.00-in. slick
Length	14 ft with saver subs
Tool connection	DC58 box/pin
Material	Nonmagnetic
Rated temp	302°F (150°C)
Rated pressure	25,000 psi
Max dogleg	Rotating: 8°/100 ft Sliding: 14°/100 ft
Max tension	1.5 million lb
Max torque	87 kft-lb
Battery life	BlackBox: 600 hr BlackStream: 350 hr
Memory life	350 hr continuous data (typical) 1.5 hr high-speed data (typical)
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	35 psi @ 1,400 gpm and 11 ppg mud



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Connections

Box	Pin	
DC58	DC58	Wired top sub
DC58	DC58	Top sub
XT57	DC58	Wired top sub
XT57	DC58	Top sub XO
NC56	DC58	Top sub XO
6 ⁵ / ₈ Reg	DC58	Top sub XO
DC58	XT57	Bottom sub XO
DC58	NC56	Bottom sub XO
DC58	DC58	Bottom sub
DC58	6 ⁵ / ₈ Reg	Bottom sub XO

Make-up torque

XT57	56,500 ft-lb
DC58	61,500 ft-lb
NC56	52,600 ft-lb
6 ⁵ / ₈ Reg	58,400 ft-lb

