

MultiSense IQ dynamics mapping system

Deliver more efficient and consistent drilling performance

Understanding the dynamics of bit-rock interactions is crucial to maximizing the efficiency and safety of drilling operations. The MultiSense™ IQ dynamics mapping system is an advanced in-bit sensing technology that provides a deeper understanding of drilling dynamics at the rock face.

As an add-on service for any bit, the MultiSense IQ system delivers continuous, high-frequency measurements of parameters at the bit for smarter insights that guide design decisions and improve formation characterization. The system helps maximize drilling performance at a lower cost-per-foot in several ways.

Reliable and consistent

Operators need assurances that their downhole tools will provide consistent, reliable, and high-quality data.

The MultiSense IQ system's module meets the highest internal reliability standards for operability and data quality. The module's in-bit sensors measure a range of parameters—including vibrations, stick/slip, shock, and revolutions per minute—and identify any inaccuracies faster and more precisely than a human.

The drilling team can then make more informed assessments and quicker

adjustments to maintain drilling efficiency and minimize nonproductive time.

Fast, agile response

Rapid access to downhole data is essential to forming actionable insights that improve the speed and certainty of drilling. The self-contained, self-activated MultiSense IQ module connects easily to the BHA and deploys quickly, with the support of field crews trained in time-saving workflows that ensure operational readiness once the system reaches its measuring depth.

Whether an operator needs data back before the next bit touches bottom or wants to conduct a thorough post-well analysis, data is always available from a robust digital infrastructure. Streamlined analysis helps minimize review time and decision-making—without waiting for input from data specialists.

Driving continuous improvements

As operators keep looking to boost drilling efficiency, lower costs, and maximize production from every well, the MultiSense IQ system accelerates continuous improvement in the drilling process.

Application engineers review and analyze the high-density data through

Applications

- Single and multiple wells with hole sizes of 5 in. (127 mm) and greater
- Wells with a risk of drilling vibrations
- Identifying performance limiters
- Root cause and failure analysis
- Benchmarking and building parameter roadmaps

Benefits

- Provides dynamic, at-the-bit measurements
- Maintains consistent BHA length above the bit
- Reduces non-productive time
- Delivers high drilling efficiency
- Helps ensure consistent predictable drilling performance

simple yet meaningful visualizations, and deliver clear, detailed insights to operators. Such insights can help fine-tune bit designs and operational parameters to deliver more efficient and consistent drilling performance.

The MultiSense IQ data seamlessly integrates into the Drilling Insights platform, which uses our cloud-based digital ecosystem to develop actionable insights that help plan and

execute a single well, multiple wells, or an entire field campaign.

Contact your Baker Hughes representative to learn how the MultiSense IQ dynamics mapping system can help deliver more efficient and consistent drilling performance in your wells.



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Baker Hughes 

MODULE SPECIFICATIONS

Sizes	
Bit size range	5-in to 18.5-in (127 mm to 469.9 mm)
Individual tool length / placements	No additional outer connection, module incorporated inside drill bit shank
ID restriction	None
Power	Lithium batteries
Operating specs and limits	
Maximum operating temperature	-13 to 329°F (-25 to 165°C)
Maximum hydrostatic pressure	15,000 psi (1034 bar)
Flow rate range	Same as drill bit
LCM	Same as drill bit
Pressure drop	Same as drill bit
Activation	20 RPM for 10 seconds
Data acquisition and processing	
Sample rate	> 2 kHz
Interval between statistical records	< 1 second
Typical continuous high-frequency burst storage	Configurable 250 Hz to 2 kHz
Run time	200 hours maximum

SENSOR SPECIFICATIONS

Vibration	
Measurement	3 triaxial accelerometers
Vibration range	-40g to +40g
Shock range	-200g to +200g
Downhole RPM	
Measurement	Gyro and accelerometer based
Range	0 to 665+ RPM
Temperature	
Range	-13 to 329°F (-25 to 165°C)
Resolution	0.9°F (0.5°C)