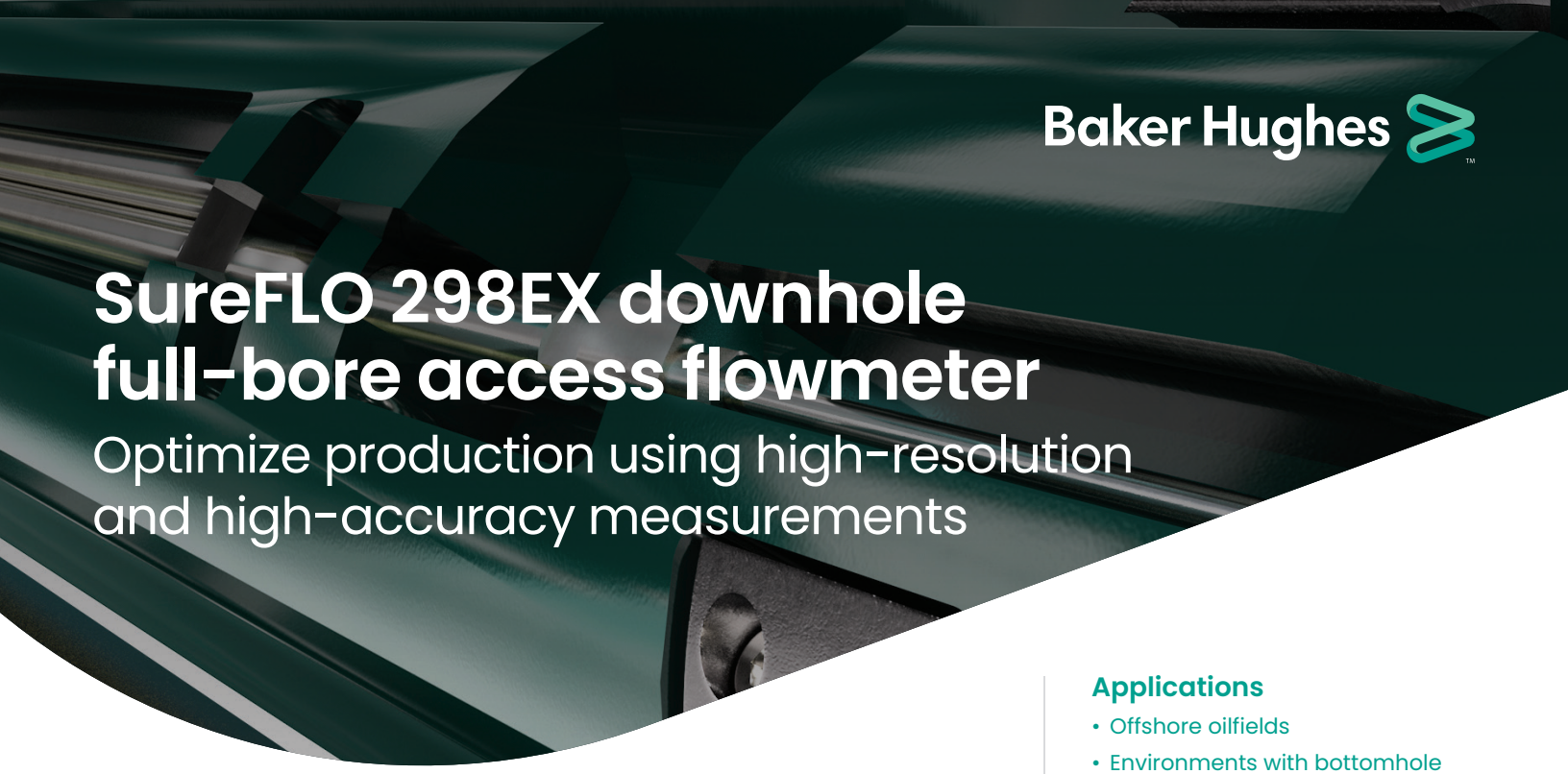


SureFLO 298EX downhole full-bore access flowmeter

Optimize production using high-resolution and high-accuracy measurements

The Baker Hughes **SureFLO™ 298EX flowmeter** is the first electronic, permanent, full-bore access downhole flowmeter in the industry that offers a full-tubing inside diameter (ID). It is an enhanced version of the original SureFLO 298 system, which provides a complete suite of downhole information such as flow rate, surface gas flow rates, water-cut, gas breakout indicator, and real-time pressure and temperature measurements.

The specialized design of the SureFLO 298EX system allows it to measure flow without having an internal diameter restriction in the wellbore. Through finite element analysis (FEA), unique stress relief features have been incorporated to enable a thin-walled expanded section. This design feature ensures that well fluids are being produced under natural lift to help minimize tooling pressure loss.

Advancement in technology of our quartz **SureSENS™ gauge** allows the SureFLO 298EX flowmeter to maintain full-tubing ID through the carrier. This gauge technology provides very high-resolution and high-accuracy pressure and temperature measurements, allowing very small differential pressures to be measured with accuracies of 98% or higher.

The SureFLO 298EX system is applicable in both liquid and gas environments. A real-time fluid property measurement is used to enable dynamic fluid profiling to provide more accurate flow measurement. With the addition of a permanent pressure and temperature gauge above or below the SureFLO 298EX carrier, a measurement of the produced fluid fraction can also be obtained.

Contact your Baker Hughes representative today to find out how the SureFLO 298EX flowmeter can help you optimize production.

Applications

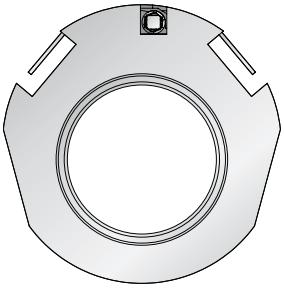
- Offshore oilfields
- Environments with bottomhole pressures up to 30,000 psi (2068.4 bar) and temperatures up to 347°F (175°C)

Features and benefits

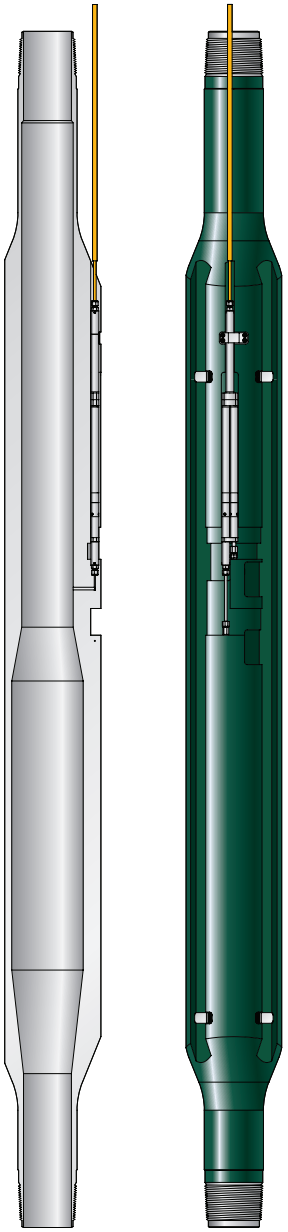
- Flowmeter body machined from a single piece of bar stock
  - Eliminates requirement for welding or heat-treating processes
  - Meets API standards for permanent downhole completions
- Slim body design for common casing restriction
  - Allows it to be run in most completion designs
- Full ID with no inserts
  - Provides an unrestrictive production flow without compromising tubing access
  - Allows other interventions to be performed below the flowmeter without additional wireline runs
- Natural lift
  - Allows full exploitation of the reservoir
- Gas compression effects are minimized
  - Improves measurement accuracy in gas production and injection

Specifications

Carrier	
Tubing size (inches)	3 ½ in. – 7 in.
Carrier assembly material	4140 L80, 13Cr, 25Cr to NACE MR0175
Gauge pressure connection	Metal-to-metal seal
Tensile strength	API 5C3 compliant
Internal yield pressure	API 5C3 compliant
Collapse pressure	API 5C3 compliant
Hydro-test pressure	API 5C3 compliant
Flow performance	**Uncertainty**
Bulk flow rate	≤ ±2 relative
Density	≤ ±2 relative
Water cut	≤ ±1



Top view



SureFLO™ 298EX downhole full-bore access flowmeter

	Sizes			
Tubing	**3½ in.**	**4½ in.**	**5½ in.**	**7 in.**
Flow rates – liquid (high accuracy)	10,000–50,000 bpd	12,000–60,000 bpd	20,000–70,000 bpd	50,000–95,000 bpd
Flow rates – liquid (medium accuracy)	2,000–10,000 bpd	5,000–12,000 bpd	15,000–20,000 bpd	25,000–50,000 bpd
Flow rates – gas (high accuracy)	40–130 MM ft^3/d	80–240 MM ft^3/d	95–330 MM ft^3/d	120–700 MM ft^3/d
Flow rates – gas (medium accuracy)	10–175 MM ft^3/d	20–300 MM ft^3/d	30–4005 MM ft^3/d	60–120 MM ft^3/d
Maximum OD of flowmeter	6.047 in.	7.533 in.	8.285 in.	11.015 in.
Internal tubing drift	2.867 in.	3.701 in.	4.435 in.	6.113 in.

Baker Hughes