VSR WET-GAS FLOWMETER

Delivering continuous multiphase measurements without separation or a nuclear source
Where conventional flow-measurement technologies fail, the VSR wet-gas flowmeter provides continuous individual- and group-well flow-rate measurements for oil, water, and gas without separating production phases. This industry-leading, non-nuclear technology provides continuous, real-time measurements that help you to optimize and allocate production in wells with gas-volume fractions (GVF) above 90%.

Installed simply and with a minimal footprint, the VSR wet-gas flowmeter enables you to increase well-test frequency and accuracy while reducing both capital expenditures (CAPEX) and operating expenses (OPEX). With no moving parts, no need for frequent calibration, and no level-control issues, the system exceeds your measurement standards while reducing maintenance costs, personnel requirements, and the HSE risks of conventional flow-measurement technologies.

THE VSR ADVANTAGE

- Delivers accurate three-phase measurements in wet-gas environments
- Requires no nuclear source
- Enables production optimization and allocation without separation
- Reduces equipment, installation, and maintenance costs
- Measures water cut independently from other measurements
- Eliminates the need for frequent calibration
- Performs regardless of salinity, water chemistry, and impurities

MEASURING UP TO YOUR STANDARDS

Never settle for inaccurate and infrequent flow measurements in your wet-gas wells.
Spend less and simplify your processes

The VSR wet-gas flowmeter gives you far more of what you need—accurate flow data—with far less expense and maintenance.

Reduce CAPEX
Bigger isn’t always better. With a minimal footprint, the compact and portable VSR wet-gas flowmeter significantly reduces wellsite complexity, lowers your upfront equipment costs, and shrinks your pad-size requirements.

Cut OPEX and personnel requirements
Slash your everyday expenses. Installed simply with standard inlet and outlet piping connections, the VSR wet-gas flowmeter reduces set-up time and costs. The flowmeter reduces pressure loss, process-fluid amounts, and maintenance requirements. Because it has no moving parts, no need for frequent calibration, and no sand-filling issues, you can achieve continuous data flow with minimal personnel and OPEX.

Standardize any well
Render difficult wells mundane. The VSR flowmeter delivers superior performance in remote locations, sites with space constraints, HPHT wells, and corrosive-fluid wells. Designed for any location, the flowmeter features low power consumption and broad ambient temperature ratings that make it suitable for solar-panel power, cold weather, and desert applications.
IMPROVE RESERVOIR MANAGEMENT

The VSR wet-gas flowmeter delivers the real-time, accurate flow data you need to optimize production performance and profitability across your asset.

INCREASE DATA ACCURACY
More reliable data yields better results. With proprietary multiphase measurement technologies, the VSR flowmeter delivers pinpoint data accuracy in wet-gas applications. It is less sensitive to fluid properties than any other multiphase flowmeter and is unaffected by changes in salinity, water chemistry, or impurities.

ENHANCE UNDERSTANDING AT THE WELLHEAD
Understand each and every well. The VSR flowmeter improves reservoir-management decisions by delivering continuous, real-time data with one-second resolution at each wellhead.

MONITOR WATER ENCROACHMENT
Stop production problems before they begin. Using our exclusive Red Eye water-cut meter, the VSR flowmeter measures water levels at an accuracy of 0.25 barrels per million standard cubic feet of gas. The system yields instantaneous water-content measurements, detects water onset and can optimize hydrate and corrosion-inhibitor injection.
PROACTIVELY
MANAGE YOUR ASSETS

With more than 30 years of experience, Weatherford is one of the world’s largest surface-well-testing providers. Our comprehensive selection of technologies—including the VSR wet-gas flowmeter—can help you to optimize field performance, diagnose production problems, and comply with environmental regulations.

Our technologies deliver everything you need to know about your wells. We deliver real-time pressure, flow, temperature, acoustics, seismicity, and water-cut measurements—from downhole to surface facilities—that create an up-to-date window into your wellbore. Our system then instantly harnesses data from every corner of your asset and—using physics-based models and advanced data analytics—helps you to improve well, surface facility, and reservoir performance.

- Monitor downhole production with OmniWell® optical systems
- Automate lift and facility equipment with WellPilot® systems
- Maximize equipment uptime and ultimately extend the life of your asset with the ForeSite™ production-optimization platform
SONAR ARRAY
Measures turbulent-flow velocity. Using an array of external strain sensors and processed with a proprietary algorithm, this meter performs in gas, liquid, and mixtures of both, and never requires recalibration. Combined with the Venturi measurements, the sonar array provides total gas and liquid rates.

VENTURI NOZZLE
Measures flow momentum. The pressure drop across the Venturi nozzle is directly proportional to the increase in kinetic energy of the flow stream.

RED EYE WATER-CUT METER
Delivers water-cut measurements that are independent from GVF and water chemistry. These meters measure key wavelengths in the near-infrared (NIR) spectrum to distinguish water, methanol, and liquid hydrocarbons at the molecular level.
ACHIEVE CONTINUOUS MULTIPHASE MEASUREMENTS IN ANY ENVIRONMENT

The VSR wet-gas flowmeter is a fully integrated multiphase-measurement technology. Using an integrated flow computer, the flowmeter manages all fluid properties and set-up parameters for multiple well profiles. It reports real-time oil, water, and gas rates in addition to cumulative produced volumes at line or standard conditions via a touch-pad display or MODBUS® protocol.

As the only three-phase surface wet-gas flowmeter to deliver non-nuclear measurements, the VSR flowmeter combines traditional Venturi technologies with our exclusive sonar and Red Eye® water-cut meter technologies.
ACQUIRE REAL-TIME FLOW DATA

The Weatherford VSR multiphase flowmeter delivers accurate and continuous multiphase measurements without separation or a nuclear source. To learn how all of our flow-measurement technologies can work for you, please visit weatherford.com/flow