



TOTALFLOW
REMOTE CONTROLLERS
AND FLOW COMPUTERS

Power and productivity
for a better world™





ABBSOLUTE EFFICIENCY.

Better efficiency. These days, everyone is looking for it. Especially you. Your business demands it. Our business is delivering it.

Representing a convergence of state-of-the-art technologies, ABB Totalflow XSeries^{G4} products are scalable across all segments of oil and gas automation and measurement applications. Distributed control, remote telemetry, wireless I/O, custody-transfer gas and liquid measurement, adaptive control algorithms, data logging and sophisticated event-driven alarming are among the many functions that seamlessly co-exist within ABB Totalflow's new generation of XSeries^{G4} Remote Controllers (RTUs) and Flow Computers.

Our out-of-the-box hardware and software solutions offer all of the functionality and flexibility you need to implement unique, custom applications—greater functionality and flexibility than competitors' custom products, in fact, which require multiple companies to provide complex, engineered solutions.

For what our XSeries^{G4} products can do for the efficiency of your business, they may represent the greatest dollar-for-dollar value in the industry.

REMOTE CONTROLLERS.



{ XSeries^{G4} Remote Controllers.

XSeries^{G4} Remote Controllers (XRC^{G4}) enable you to monitor, measure and control your facilities from anywhere, anytime. Combining unmatched measurement technology with next-generation remote control technology, the XRC^{G4} can significantly extend the life of your equipment while saving you time and money.

Featuring spacious cable routing, large enclosures and powerful battery capacity, the XRC^{G4} is designed to grow with your business. Upgrades are seamless and simple, so there is no need for costly retraining.

The XRC^{G4} series is made up of full-featured units without an Integrated Multivariable Transducer (XIMV). In its base configuration, each unit is equipped with standard I/O designed to meet the requirements of many low-cost measurement and automation projects. The base I/O includes five analog inputs (0-10 volts DC), four digital outputs and four digital inputs which can be configured as either status inputs or pulse accumulator inputs.

I/O modules can be added to extend the hardware I/O capability. The XRC^{G4} 6895 accommodates up to 22 TFIO modules. All units except the XRC^{G4} 6895 are powered by an internal battery that can be solar charged (or other suitable DC supply) for remote, unattended operation. Several charging options are available. Communications interface cables and equipment can be installed at the factory, ready for quick installation. Checking and modifying configuration and calibration is accomplished with ABB Totalflow's PCCU32 laptop software, running on a 32-bit Windows® operating system.

AS YOUR BUSINESS GROWS,
WE GROW WITH YOU.

REMOTE CONTROLLERS, CONT.



{ XRC^{G4} 6990.

Designed with system expandability, the XRC^{G4} 6990 features a non-weatherproof enclosure that can be installed in a standard, 19-inch, vertical computer rack system.

In its base configuration, the XRC^{G4} 6990 is equipped with standard I/O designed to meet the requirements of many low-cost measurement and automation projects. This standard XRC^{G4} 6990 accommodates up to six TFIO modules, but can be coupled with a second unit to accommodate up to 12.

With low power, accuracy and system integrity built in, the XRC^{G4} 6990 is proven daily on thousands of sites.

FLOW COMPUTERS.

Easy installation, minimal calibration, and streamlined, accurate, custody-transfer systems are just the beginning of the benefits of XSeries^{G4} and microFLO (μFLO) devices. Years of experience with real-world applications have helped us build greater efficiency into every function of these products, resulting in exceptional productivity and profitability for our customers.

XSeries^{G4} technology—the X stands for extendable—is a thoroughly integrated, object-oriented, real-time software system on top of dynamic, state-of-the-art, rugged, low-power electronics. Each layer of the system—I/O points, communication channels, protocols or software applications—is designed to expand with you as your business expands.

Totalflow μFLO flow computers are also based on the XSeries^{G4} technology. These accurate, reliable, single-tube-orifice gas flow computers have the capability to measure and monitor gas flow in compliance with AGA and API standards.

With either XSeries^{G4} or μFLO flow computers, you can make the most of your energy.

IN THE WIDE OPEN SPACES,
THERE IS NO ROOM
FOR ERROR.



XSeries^{G4} Flow Computers.

Totalflow XSeries^{G4} Flow Computers (XFC^{G4}) are low-power, microprocessor-based units designed to meet a wide range of measurement, automation, monitor, control and alarming applications for a variety of remote oil and gas systems.

All XFC^{G4} units feature multi-tube capability—up to eight per unit, or 20 tubes per unit in special cases—with custody-transfer measurement features. The flexibility of these units, which includes backward compatibility with legacy Totalflow systems, allows you to increase productivity and improve asset utilization.

Differential (Orifice) Meters:

- XFC^{G4} 6410
- XFC^{G4} 6413
- XFC^{G4} 6713

Pulse (Linear) Meters:

- XFC^{G4} 6411
- XFC^{G4} 6414
- XFC^{G4} 6714

Designed for either differential (orifice) or pulse (linear) metering, XFC^{G4} models are available in various enclosure sizes that can accommodate up to six TFIO modules and a range of battery sizes. And with their exceptional processing speed and memory capacity (203 MHz 32-bit microprocessor, Windows[®] CE operating system on all units except XFC^{G4} 6200EX and XFC^{G4} 6201EX), you can run more applications faster than ever before.

In addition to basic flow computer inputs, the standard XFC^{G4} has an integrated Ethernet 10 Base-T port that enables full networking capabilities, and USB host and device ports for flashing new firmware and high-speed local configuration and collection.

TECHNOLOGY THAT
WORKS IN HARMONY
WITH EVERYTHING.



{ microFLO (μ FLO) Flow Computers.

Totalflow consistently provides new and innovative products and systems in support of accurate, reliable and auditable gas measurement. The Totalflow microFLO (μ FLO) 6200 series includes features grounded on a thorough understanding of the natural gas industry's custody-transfer and measurement needs.

microFLO 6200 series models are low-power, high-reliability, microprocessor-based units designed to meet a wide range of measurement, monitor and alarming applications for remote gas systems. Two models are available:

- **μ FLO 6213.** The μ FLO 6213 is packaged in a lightweight, aluminum enclosure that can accommodate the microFLO (μ FLO) 2100767 board (main electronic board), Integrated Multivariable Transducer (IMV), a variety of remote communications options and batteries.
- **μ FLO 6210.** Also packaged in a small, lightweight enclosure, the μ FLO 6210 only accommodates the main electronic board and IMV; all power supply and radio communication applications must be housed in separate accommodations.

In both models, the microFLO's main board and transducer comprise a single unit (IMV). It resides inside the enclosure where all field wiring is connected.

The microFLO 6200 series complies with the API 21.1 standard for custody-transfer electronic measurement devices, and calculation of flow rates, volumes and energy are in accordance with AGA 3-85, AGA 3-92, ISO-5167 and AGA 5. Historical flow volumes and data can be maintained for 40 or more days, and can be configured to store more than 180 days of hourly and daily records.

NEVER HAVE YOU FELT
SO IN CONTROL
SO FAR AWAY.

SPECIALIZED FLOW COMPUTERS AND REMOTE CONTROLLERS.



{ XFC^{G4} 6200EX and XFC^{G4} 6201EX.

For differential or linear metering and automation systems in extreme conditions, the XFC^{G4} 6200EX (differential model) and XFC^{G4} 6201EX (linear model) feature explosion-proof, cast-aluminum enclosures. These accurate and reliable flow computers can measure and monitor gas flow in compliance with AGA, API and ISO standards, and their multiple protocol options include Totalflow packet and various modbus protocols.

As with all XSeries^{G4} models, the XFC^{G4} 6200EX and XFC^{G4} 6201EX are expandable and meet the measurement and control application needs—including plunger lift and multiple tubes—of customers requiring a Class 1, Division 1 design. Both the XFC^{G4} 6200EX and XFC^{G4} 6201EX require external power.

TECHNOLOGY YOU
CAN DEPEND ON,
RAIN OR SHINE.



Totalflow Flow Computer/Remote Controller Applications.

Some common applications of Totalflow flow computers and remote controllers include:

- **Gas Flow Measurement.** Today's natural gas market requires high measurement accuracies and instantaneous, real-time gas flow information. Totalflow microFLO flow computers, XFCs and XRCs provide calculations that comply with API 21.1 for gas custody-transfer measurements and meet the requirements of AGA 3 and ISO 5167 for orifice meter run, AGA 7 rotary/turbine meter, ultrasonic meter and VCone meter. With their low-power electronics and radio communications, Totalflow products are ideal for remote installations.

Real-time volumes are obtained locally with Totalflow PCCU software or remotely with Totalflow WinCCU software or SCADAventure™. Single- or multiple-meter runs can be input to one flow computer. Historical flow volumes and data can be maintained for 40 or more days.

- **Well Liquid Level Control.** Oil and natural gas wells require the removal of liquids as part of the production process. It is important to measure the produced liquid, the natural gas, and the holding tank levels, and also to control the gas sales valve or execute pressure override control. All of these functions can be accomplished with Totalflow's Intelligent Motor Control (IMC), an integration of Totalflow XFCs, XRCs and ABB's Motor Protector. These devices combine to provide start/stop function, motor current protection, local/remote motor control, pump control logic, measurement of gas and liquid flow, and other important information and functionality.

- **Automated Valve Control.** A key element in consistent gas production is correct control of the gas sales valve. Totalflow XFCs and XRCs can implement the standard valve control application, which positions a control valve to maintain control of either the differential pressure, static pressure or flow rate. In addition, an override function can be selected to limit any secondary parameter to a preset value.

- **Chemical Injection Pump Control.** Chemical injection is a key element in the efficient operation of a production well. Exact amounts of chemical, measured in amounts as small as quarts per day, are required to correctly treat a well. Better control of the chemical injection pump could save thousands of dollars each year in chemical costs and help maintain high production efficiency and increased revenue. Totalflow XFCs and XRCs are available with an optional Chemical Injection Pump Control application, which allows the pumper to enter the amount of chemical required per day and the injection rate for each pump stroke. Trending of the chemical injected and the XSeries^{Q4}-measured gas production can be used as a tool to determine the optimal chemical volume amount.



Applications, cont.

- **Gas Nomination Control.** The nomination of natural gas (delivery of a specified volume over a defined period of time) is often a requirement for gas sales. Both over- and under-deliveries usually invoke contract penalties and a loss of revenue. By combining accurate flow measurement with reliable valve control, exact nomination deliveries can be achieved. Totalflow XFCs and XRCs have an available nomination application that continuously inputs set points to the Totalflow Valve Control Application, positioning the control valve to maintain a flow rate that will result in delivery of the nominated volume.
- **Intermit Gas Well Flow.** The buildup of liquid (water or oil) in a gas well causes a bottom hole backpressure on the producing formation. The result is a decrease in gas flow, a production drop below the normal well decline curve, and lost revenue. Intermitting is the process of producing the well through a cycle of flow and no-flow or On/Off flow. Totalflow XFCs and XRCs can control the On/Off operation of the gas sales valve. The Off period allows well pressure to build. During the On period, the increased pressure becomes the driving force to move liquid from the well to the surface, resulting in increased gas production.
- **Plunger Control.** To address the problem of liquid buildup and the resulting bottom hole backpressure, a plunger may be inserted into a well to serve as a mechanical seal between the gas and liquid. While the well is shut-in, bottom hole pressure increases and becomes the driving force to move the plunger and the liquid to the surface. Totalflow XFCs and XRCs are programmed with three types of plunger control that are designed to remove liquid from the well and increase gas production. Setup is made locally with a laptop computer using Totalflow PCCU software or remotely with Totalflow WinCCU software or SCADAventure™. Initialization requirements are menu-selectable, and an easy-to-use Graphical User's Interface is available.

ABB TOTALFLOW. REASSURINGLY RIGHT.

There is not an engineer, sales representative, customer service professional or technician on the ABB Totalflow team who doesn't believe in doing the job right every time. It's more than a matter of pride—it's a matter of responsibility.

When we tell a customer that our products will deliver the most accurate information in the most efficient manner possible, a lot is at stake. The customer's profitability, for one. And our reputation.

Part of our reputation is making sure the customer is satisfied no matter what. So, if a standard product is not enough, our project engineers will create the right solution for your business.

Discover how much easier life can be when you go with the 'flow—ABB Totalflow.

For more information, please call 800-341-3009 or visit abb.com/totalflow.

