

SIEMENS

Ingenuity for life



Best-in-class performance
and day-to-day operation.

Digital innovation in ultrasonic flow –
SITRANS FS230.

siemens.com/fs230

Digitize your productivity.

For the process industries, change is one of very few constants – making it challenging to stay profitable and ahead of the competition. To succeed you need high-performance instrumentation solutions that maximize the efficiency of your processes while minimizing operational expenses.

Building upon decades of experience in the field of ultrasonic flow measurement, Siemens has developed a state-of-the-art and cost-effective solution for virtually any liquid application: the SITRANS FS230.

As one of the world's first digital clamp-on ultrasonic flowmeters, the FS230 harnesses the power of digital signal processing to bring you market-leading accuracy, noise immunity and reliability.

The FS230 simplifies and optimizes your day-to-day operation with an unparalleled data update rate, superior user-friendliness and a leading variety of options for customization, securing the highest measurement quality at the lowest cost.

In selecting Siemens as your preferred technology partner, you are ensured full system integration and around-the-clock technical service from our global network of instrumentation and automation experts 7 days a week. Siemens is the world's single-source leader of automation products engineered and manufactured for all industrial sectors.

With the SITRANS FS230, ultrasonic flow measurement has never been easier – or more innovative.

Siemens is a pioneer in the use of Lamb wave sensors for flow measurement. Our WideBeam® transit-time technology increases accuracy by reducing sensitivity to any changes in the fluid.



See how
ultrasonic
measurement
works.



The future is digital – making better decisions faster.

Digitalization is one of the most effective ways for the process industries to improve competitiveness. It allows decisions of never-before-seen quality to be made: fast, well-founded and based on facts. This creates new possibilities for systematic plant optimization throughout the entire life cycle. And it is precisely in this area that Siemens supports you – as an experienced partner and pioneer in the area of digitalization.

Today's digital revolution is opening exciting new doors for the process industries. By enhancing the flexibility and efficiency of manufacturing without any loss of quality, digitalization empowers companies to reduce time-to-market and gain a competitive edge.

Intelligent devices and systems generate valuable data with the potential to improve process transparency and enable smarter choices. Leveraged properly, this wealth of information makes it possible to maximize your plant's efficiency, respond more quickly to customer needs and boost your bottom line.

Having pioneered concepts like Totally Integrated Automation, Siemens is a driving and trendsetting force behind the movement toward digitalization in manufacturing. Our experience, know-how and portfolio of integrated solutions help to generate performance improvements across the entire value chain – starting on field level with digitally based process instrumentation.



Digitalization empowers the process industries to reduce time-to-market as well as energy and resource consumption. Join the digital revolution with intelligent instrumentation like the SITRANS FS230.

Minimize errors and maximize stability

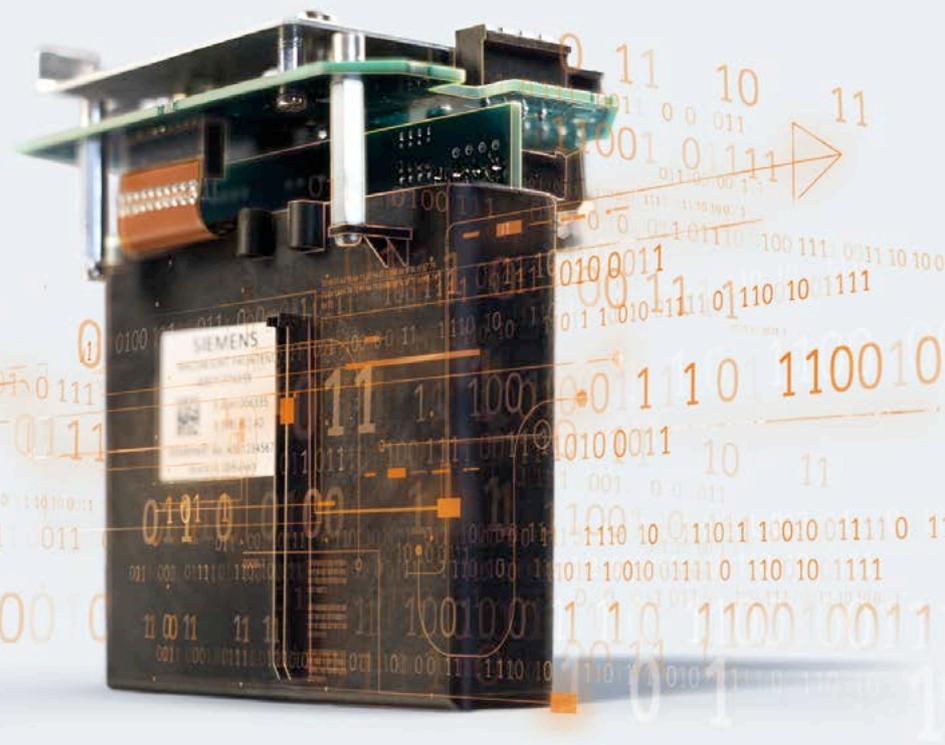
One of the first digital clamp-on ultrasonic flowmeters on the market, the SITRANS FS230 digitizes the signal very early in the measurement process for a high signal-to-noise ratio, enhanced measurement accuracy and reduced susceptibility to electromagnetic noise. As a result, it meets the most stringent electromechanical compatibility (EMC) standards worldwide.

The 100 Hz update rate from the digital sensor interface to the transmitter and PLC makes it possible for the FS230 to detect even small, rapid changes in flow – changes typically averaged by analog devices. The high-speed update rate also allows for smaller calibration facilities and the possibility to calibrate with shorter volume runs.

Stay fully connected

The USB port and SIMATIC PDM compatibility make for easy access to all commissioning and operational data via any PC, without interrupting your processes. And the FS230 can be directly integrated into any process control system via HART or Modbus communication to enable plant-wide automation and optimization.

More about
Siemens digital solutions.



SITRANS FST030 – the versatile top performer.

The SITRANS FST030 transmitter has been designed to deliver market-leading accuracy and data update speed while also ensuring unmatched noise immunity and simplicity in use. Based on a digital platform and driven by a powerful measurement algorithm, the FST030 features a range of innovations to enhance your operational efficiency.

Ingenuity for high precision and reliability

At the heart of the transmitter is the PerformancePLUS™ algorithm for fast and reliable signal processing, and the Digital Sensor Link (DSL), which digitizes the ultrasonic signal at the earliest stage of measurement for a strong signal-to-noise ratio.

The results: high accuracy of 0.5 to 1% of flow rate and repeatability of 0.25% according to ISO 11631 along with a very stable zero point and high resistance to process noise.

The 100 Hz data refresh rate of the FST030 brings you the ultimate in diagnostic and error handling efficiency, while the intelligent pipe configuration menu optimizes sensor placement and compensates effectively for various application conditions, including flow profile anomalies.

Simple to use

Experience easy handling with a large, fully graphical display. Intuitive navigation, a built-in pipe configuration menu and multiple setup wizards offer you full support from the very first moment.



Service in a flash

Enjoy the benefits of the innovative SensorFlash®. In addition to storing all settings, calibration data and certificates, it provides comprehensive audit trails with quick information transfer for more efficient service and less downtime.



Fully customizable

Take advantage of a broad range of programmable I/O, communication, Ex approval and NAMUR options – then configure your alarms, 3 totalizers and up to 6 different views at once.





Rapid response time
Enhance your measurement precision and reliability with the best-in-class 100 Hz data update rate – enabling fast detection of and response to even the smallest changes in your flow process.

Unique support tools and tailoring

The SITRANS FST030 offers user-friendliness and customization options at every stage of installation, commissioning and day-to-day operation.

The SensorFlash® microSD card gives you access to all product data, certificates, operating instructions and audit trails directly from a PC or via the transmitter's USB port, and also makes it easy to transfer settings between devices.

The graphical interface features intuitive menu navigation with the ability to display up to 6 user-configurable parameters on the same screen, along with a comprehensive set of diagnostic tools to improve your monitoring ability and streamline your operations.

In addition, the FST030 brings you:

- Low power consumption of only 10 W for improved energy efficiency
- Easily accessible USB user interface for quick servicing and minimized downtime
- Compliance with current electro-mechanical compatibility (EMC) standards
- Optional commissioning and other service packages from Siemens experts, with straightforward ordering directly from the PIA Life Cycle Portal

| SITRANS FST030 wall-mount transmitter | |
|---------------------------------------|--|
| Configuration | Wall-mount enclosure, 1- or 2-path |
| Communication | HART 7.5 or Modbus; compatible with SIMATIC PDM |
| Material | Aluminum |
| Enclosure rating | IP66/67, NEMA 4X |
| I/O | Up to 6 channels combining analog, relay or digital outputs and binary input + RTD |
| Display | Fully graphical display, 240 x 160 pixels |
| Power supply | 24 to 90 V DC, 100 to 240 V AC (universal power supply) |

Exceptional performance and outstanding cost savings. With the SITRANS FS230, you never need to compromise.

By combining the ingenious SITRANS FST030 transmitter with dependable SITRANS FSS200 sensors, Siemens has developed an exceptional clamp-on ultrasonic flow solution: the SITRANS FS230. The FS230 offers outstanding cost savings without sacrificing the high levels of accuracy and reliability required to run your processes at peak efficiency.

To cover the widest possible range of applications and challenges, Siemens offers 3 different types of clamp-on ultrasonic sensors in multiple sizes: WideBeam® (High Precision), Universal and High Temperature.

The WideBeam® advantage

Siemens has WideBeam® transit-time sensor technology to improve signal detection. It increases measurement accuracy by using the resonant frequency of the pipe to transmit ultrasonic waves through the flowing liquid, with the pipe wall acting as a waveguide.

WideBeam® produces a particularly strong, focused signal that optimizes the signal-to-noise ratio, reduces sensitivity to changes in temperature, density or viscosity and resists the effects of beam blowing.





SITRANS FSS200 clamp-on ultrasonic sensors are easy to install and require virtually no maintenance since they never come into contact with the medium.

High precision, low maintenance

Not only does the SITRANS FS230 flow system feature market-leading accuracy of 0.5 to 1% of flow rate for liquids, but it's also capable of handling applications containing up to 12% aeration or suspended solids without any significant reduction in performance. Typical applications include wastewater treatment, paper manufacturing and many processes that involve mixing.

Unlike most other flow measurement technologies, the FS230 keeps your cost of ownership low since the sensors never touch the medium, have no moving parts and can be mounted easily on pipe sizes as large as 10 m (394") without any process downtime. This makes the FS230 a perfect choice for flow measurement on existing pipelines as well as for corrosive, toxic or high-pressure liquids.

With the SITRANS FS230 you also get:

- High turndown ratio to ensure consistent measurement across a wide range of flow rates
- Dual-path configuration option for increased accuracy, particularly in less-than-ideal piping geometry
- Bidirectional flow capability without the need for multiple meters or user intervention
- No pressure drop, which reduces energy usage and minimizes drag on pumping systems

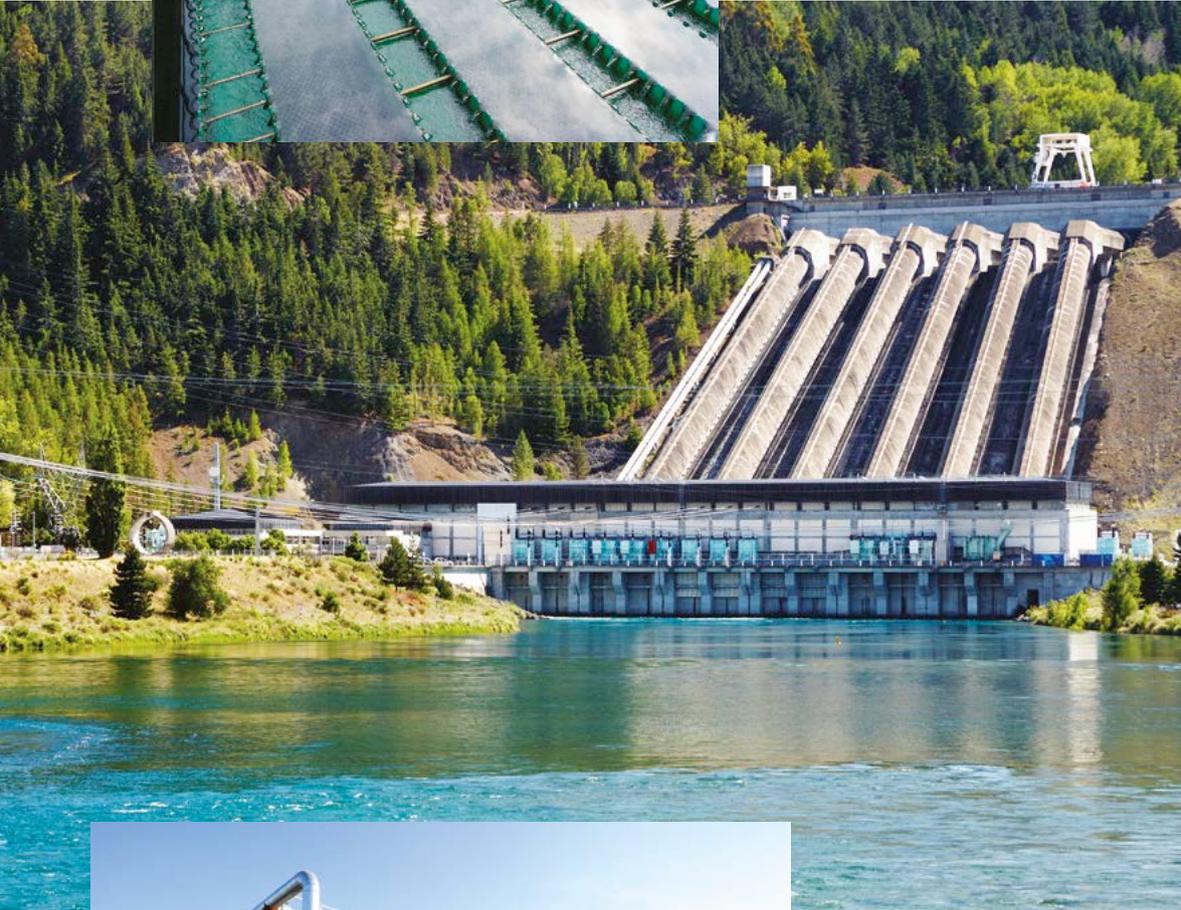
See how easy installation can be.



| SITRANS FSS200 sensors | WideBeam® | Universal | High Temperature |
|-----------------------------|---|---|-------------------------------|
| Installation (architecture) | Clamp-on | | |
| Media | Conductive and non-conductive liquids | | |
| Pipe sizes | 12.7 mm to 10 m (0.5" to 394") | | |
| Sensor materials | Size C/D - Polyetherimide, stainless steel Size A/B - Polyetherimide, stainless steel, aluminum (optional) | Size C/D/E - Polyetherimide, stainless steel Size A/B - Polyetherimide, stainless steel, aluminum (optional) | Stainless steel |
| Temperature range | -40 to 120 °C (-40 to 250 °F) | -40 to 120 °C (-40 to 250 °F) | -40 to 230 °C (-40 to 450 °F) |
| Pipe material | Steel and carbon steel | Most non-steel | Steel and non-steel |



The SITRANS FS230 adapts easily to the needs of numerous liquid applications spanning the process industries - from wastewater treatment to hydroelectric power generation.



Business is based on trust

A successful partnership has many facets. Being there when you're needed. Providing support even in the toughest situations. Adapting to meet changing priorities.

Siemens has all of the qualities that make us a reliable partner. The results speak for themselves: satisfied customers around the world who know they can rely on Siemens for dependable solutions.

Built-in flexibility for every industry.

Maintaining quality control. Keeping operating and usage costs to a minimum. Protecting public safety. Liquid flow measurement serves a variety of critical roles – and the SITRANS FS230 is up for the challenges faced by a broad array of industries, including water and wastewater, HVAC and power, food and beverage, pharmaceutical, chemical, mining, and pulp and paper.

Cost-reducing simplicity – Water and wastewater

The versatile SITRANS FS230 can be installed on any pipe size and material. Its accurate, non-intrusive volumetric measurement helps to reduce water wastage and better comply with strict regulations while also benefiting you with significant cost savings. The non-intrusive sensors make installation simple, with no need for pipe alterations or process shutdown.

Key application areas for the SITRANS FS230 include:

- Raw and potable water
- Low-flow chemical dosing
- Raw sewage and effluent
- Mixed liquor and sludges
- Consumption monitoring
- Billing
- Plant testing and surveying

Optimized energy efficiency – HVAC and power

Its rugged design and innovative engineering enable the SITRANS FS230 to provide precise measurements even in installations with low flow rates. The FS230 can be further optimized by using the pipe configuration menu or by applying the dual-path function to improve performance in convoluted piping configurations.

Key application areas for the SITRANS FS230 include:

- District heating and cooling
- Hot and chilled water sub-metering
- Condensate water
- Thermal storage and lake source cooling
- Coolant
- Hydroelectricity
- Penstocks
- Nuclear feed water

Measuring everything that matters: siemens.com/processinstrumentation

Siemens Process Instrumentation offers best-in-class measurement and seamless integration into your automation system. We are the total solution provider for flow, level, pressure, temperature, weighing, positioners and more.

Follow us on:

twitter.com/siemensensors
facebook.com/siemensensors
youtube.com/siemens



Siemens AG
Process Industries and Drives
Östliche Rheinbrückenstraße 50
76187 Karlsruhe
Germany

Order No.: PDPA-B10190-00-7600
DISPO 27900
WS 041702.0
Printed in Denmark
© Siemens AG 2017

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

All product designations may be registered trademarks of Siemens AG. All other designations in this document may represent trademarks whose use by third parties for their own purposes may violate the proprietary rights of the owner.

