Process Instrumentation
Every drop of water and every unit of energy counts
Environmental: Water and District Energy

Answers for industry.
Instrumentation that puts you in control

Water and energy are at the heart of life and economic activity. Measurement of critical process parameters is key for process management and sustainability throughout all phases of the plant life cycle.

Siemens’ instrumentation offers you the technology to put you in control. We not only give you accuracy and reliability of measurement but also the reassurance of seamless integration from the planning and engineering phase to operation and modernization. Siemens Totally Integrated Automation (TIA) ensures that the data and alerts from your instrumentation and process analytics devices are translated into early and effective action.

Faster and more efficient processes and operations in the water industry
To save time and money, processes need to be simplified and run efficiently. Integrated engineering with COMOS and SIMATIC PCS 7, the Consultant DVD and the Industry Library from Siemens offer outstanding solutions.

A complete portfolio
We offer a complete portfolio of field instruments for flow, level, pressure and temperature measurement. Our strategic partner Hach Lange completes the portfolio with process liquid analytics like pH, conductivity, dissolved oxygen or turbidity sensors. Our technology is designed to fit your individual needs. We feel responsible for sustainable resource management and for efficient use of energy.

Besides inline flow measurement, clamp-on technology, ideal for retrofit installations, extends the standard offering. Custody transfer-approved instruments guarantee accurate billing of water or heating/cooling energy. Battery-operated meters and wireless technology enable you to control stand-alone devices in remote or inaccessible locations, giving you reliable information from the field as well as reduced cabling or other infrastructure costs.

Siemens Process Instrumentation is part of the Siemens Environmental Portfolio
This covers all Siemens products that are of extraordinary benefit for the environment and for our customers. Siemens flowmeters for water applications and valve positioners for compressed air applications are certified products.

With Siemens you have the reassurance of best-in-class products and a partner who understands your industry. Discover more in this brochure and at: www.siemens.com/sensors/industries
PIA Life Cycle Portal

The PIA Life Cycle Portal is a web-based application for easy and convenient product selection and configuration.

How to get access
You can access the PIA Life Cycle Portal around-the-clock at www.siemens.com/piaportal. It offers you active support to find the best solution from the extensive Siemens portfolio of sensors and process analytical products. The portal can be used to see how different solutions can be put to use in process and factory automation.

You can choose between several selection access options to find the appropriate product solution for your specific requirements:

- Direct access sends you straight to a specific configuration if you know the product you are seeking.
- “Guided selection” lets you to select the appropriate application, technology or industry and specify the measurement task based on the various relevant parameters for your particular application.

Advantages at a glance:
- Convenient product selection support with answers to typical questions
- A variety of selection possibilities: see the sample processes and simply select from the recommended process instrumentation and analytics products
- Project lists for an order enquiry can be quickly created
- Different possibilities for processing data and information
- No separate installation needed
- Product selection for spare parts
- The latest product data and information for Siemens process instrumentation and analytics

www.siemens.com/pia-portal
# Product range

## Level measurement

### Radar

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Features and benefits</th>
<th>Typical applications</th>
</tr>
</thead>
</table>
| **SITRANS Probe LR** | Compact 2-wire loop-powered, 6 GHz pulse radar transmitter with polypropylene rod antenna for level measurement up to a range of 20 m (65 ft). | • Uni-Construction polypropylene rod antenna standard  
• Easy installation and simple start-up  
• Patented Sonic Intelligence® signal processing  
• Extremely high signal-to-noise ratio  
• Auto False-Echo Suppression of false echoes  
• Measuring frequency: 5.8 GHz (6.3 GHz for North America)  
• Programming using infrared Intrinsically Safe handheld programmer, SIMATIC PDM or HART® handheld communicator  
• Communication: HART®  
• Approvals: CSA, FM, C-Tick, ATEX | Level and volume measurement of aggressive liquids such as acids, lime and other slurries, alum, polymers, sodium hypochlorite <20 % etc. in chemical storage tanks in water and wastewater treatment plants. |
| **SITRANS LR250** | 2-wire loop-powered, 25 GHz pulse radar level transmitter with a full range of antennas: horn-IPVDF-/fully encapsulated flanged antenna up to 20 m (66 ft). | • Smaller process connections and narrow beam allows installation anywhere on a vessel  
• Short blanking distance  
• Process Intelligence® for advanced echo processing  
• Reliable and accurate for extremely high signal and low noise yields  
• Full vessel capacity for high accuracy of low and high levels  
• Quick Start Wizard for easy configuration and operation in a few minutes  
• Infrared handheld programming or over a network using SIMATIC PDM via HART® or PROFIBUS PA  
• Graphical local user interface displays, echo profiles and diagnostic information  
• Communication: HART®, PROFIBUS PA, FOUNDATION Fieldbus  
• Approvals: ATEX, FM, CSA, C-Tick, INMETRO, IECEX, NEPSI | Continuous level and volume monitoring of aggressive liquids and slurries in chemical storage and process vessels, e.g. acids / alkalis, polymers, sodium hypochlorite >20 %, chlorinates, buffer and mixing tanks in water and wastewater treatment plants. |
| **SITRANS LR560** | 2-wire, 78 GHz FMCW radar level transmitter for continuous monitoring of solids in silos up to a range of 100 m (328 ft). | • High-frequency technology ensures reliable operation in dusty and vaporous environments  
• Lens antenna, eliminating large parabolic or horn antennas, providing a narrow 4° beam angle. Highly resistant to product build-up  
• Integrated air purge connection as standard for particularly difficult installations  
• Communication: HART®, PROFIBUS PA, FOUNDATION Fieldbus  
• Approvals: CSA, FM, FFC, C-Tick, IECEX, ATEX, INMETRO, NEPSI | Continuous level monitoring of bulk solids and powders such as lime and activated carbon in water and wastewater treatment plants for both batch and continuous operation. |
| **SITRANS LG**   | Guided wave radar series for liquids, solids, slurries, inventory, process control, aggressive materials and more. | • Versatile and reliable level measurement even with aggressive vapors, high temperatures and pressure, dust, steam, or material build-up  
• No setup required due to preconfigured sensor delivery  
• Measures level, level interface and volume in a wide range of applications from material storage to bypass pipes  
• Rod and cable lengths can be easily adjusted to fit your application | Continuous level and volume monitoring of liquids and solids. Measurement in storage and process vessels in water and wastewater treatment plants. |

More information:
- [www.siemens.com/probelr](http://www.siemens.com/probelr)
- [www.siemens.com/sitranslr250](http://www.siemens.com/sitranslr250)
- [www.siemens.com/sitranslr560](http://www.siemens.com/sitranslr560)
- [www.siemens.com/sitranslg](http://www.siemens.com/sitranslg)
<table>
<thead>
<tr>
<th>Ultrasonic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SITRANS LR200</strong> 2-wire, 6GHz pulse radar level transmitter for continuous monitoring of liquids and slurries up to a range of 20 m (66 ft).</td>
</tr>
<tr>
<td><strong>SITRANS LUT400</strong> Compact, single-point, long-range ultrasonic controllers for continuous level, or volume measurement of liquids, slurries, and solids, and high-accuracy monitoring of open channel flow. ±1 mm high accuracy in standard operation. Measuring range up to 60 m.</td>
</tr>
<tr>
<td><strong>SITRANS Probe LU</strong> 2-wire loop-powered ultrasonic transmitter for level, volume and flow monitoring of liquids. Continuous level measurement up to 12 m (40 ft) range.</td>
</tr>
<tr>
<td><strong>HydroRanger 200</strong> Versatile short to medium range up to 15 m (50 ft) ultrasonic single- and multi-vessel controller for use in a wide range of environmental industries.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Features and Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SITRANS LR200</strong> • Graphical local user interface (LUI) makes operation simple with plug-and-play setup using the intuitive Quick Start Wizard • LUI displays echo profiles for diagnostic support • Process Intelligence signal processing for improved measurement reliability and Auto False-Echo Suppression of fixed obstructions • Programming using infrared Intrinsically Safe handheld programmer or over a network using SIMATIC PDM, Emerson AMS, or Field Device Tools, such as Pactware or Fieldcare via SITRANS DTM • Communication: HART®, PROFIBUS PA • Approvals: ATEX, CSA/FM, NEPSI, C-TICK, INMETRO, GOST</td>
</tr>
<tr>
<td><strong>SITRANS LUT400</strong> • Separated transceiver/transducer (Echomax) protects the electronics from extreme vibration • High-frequency, non-contacting ultrasonic transducer is free of electronic components and fully potted to provide long-term reliability • Energy-saving algorithms for minimizing pump operation during high-cost energy periods • Sonic Intelligence is standard and is proven to provide superior performance in difficult conditions • Communication: HART® • Approvals: MCERTs, CSA, FM, UL, C-Tick</td>
</tr>
<tr>
<td><strong>SITRANS Probe LU</strong> • Integrated temperature compensation • ETE or PVDF transducers for chemical compatibility • Patented Sonic Intelligence signal processing • Extremely high signal-to-noise ratio • Auto False-Echo Suppression for fixed obstruction avoidance • Level to volume or level to flow conversion • Programming using infrared Intrinsically Safe handheld programmer, SIMATIC PDM or HART® Communicator • Communication: HART®, PROFIBUS PA • Approvals: ATEX, FM, CSA, INMETRO, IECEX, C-Tick</td>
</tr>
<tr>
<td><strong>HydroRanger 200</strong> • Single- or dual-point level monitoring • 6 relays standard • Auto False-Echo Suppression for fixed obstruction avoidance • Anti-grease ring/tide mark build-up • Differential amplifier transceiver for common mode noise rejection and improved signal-to-noise ratio • For up to 6 pumps, provides control, differential control and open-channel flow monitoring • Communication: Modbus RTU via RS485, Smart Linx Cards for PROFIBUS DP and SIMATIC PDM • Approvals: FM, CSA, MCERTS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Typical Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SITRANS LR200</strong> Continuous level and volume monitoring of liquids and slurries in anaerobic digesters, storage and process vessels in water and wastewater treatment plants.</td>
</tr>
<tr>
<td><strong>SITRANS LUT400</strong> Open-channel flow monitoring in sewers, combined sewer overflow. Wet well level and pump control, storm water tank and level monitoring in holding tanks/vessels in water and wastewater treatment plants.</td>
</tr>
<tr>
<td><strong>SITRANS Probe LU</strong> Level, volume and flow monitoring in open channels, non-foaming chemical storage vessels, simple process vessels, filter beds, chlorine contact chambers, clarifiers, sumps, etc. in water and wastewater treatment plants.</td>
</tr>
<tr>
<td><strong>HydroRanger 200</strong> Level monitoring and control of wet wells, open-channel flow monitoring of flumes/weirs. Bar screen control, level monitoring and control of screenings/sludge storage hoppers, non-aggressive chemical storage, liquid storage, and dry solids storage tanks in water and wastewater treatment plants.</td>
</tr>
</tbody>
</table>

More information:  
- www.siemens.com/sitranslr200  
- www.siemens.com/sitranslut400  
- www.siemens.com/probelu  
- www.siemens.com/hydroranger
## Level measurement

<table>
<thead>
<tr>
<th>Ultrasonic</th>
<th>Hydrostatic Pressure</th>
<th>Point Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Echomax Transducers</strong></td>
<td><strong>SITRANS P MPS</strong></td>
<td><strong>SITRANS LH100</strong></td>
</tr>
<tr>
<td><strong>Brief description</strong></td>
<td>Range of ultrasonic transducers provides reliable continuous level measurement. Various models for a wide range of applications.</td>
<td>2-wire submersible pressure transmitter to measure hydrostatic pressure.</td>
</tr>
<tr>
<td><strong>Features and benefits</strong></td>
<td>• Narrow beam angle from 6 to 10°&lt;sup&gt;1&lt;/sup&gt;</td>
<td>• IP68 stainless steel housing (27 mm diameter) with a piezoresistive sensor and stainless steel diaphragm</td>
</tr>
<tr>
<td></td>
<td>• Chemically resistant PVDF copolymer enclosure and CMS rubber face</td>
<td>• Converts the level-proportional hydrostatic pressure into a standardized signal 4 – 20 mA</td>
</tr>
<tr>
<td></td>
<td>• Fully submersible</td>
<td>• Accuracy ± 0.3%</td>
</tr>
<tr>
<td></td>
<td>• Integral temperature compensation</td>
<td>• 2-wire compact design</td>
</tr>
<tr>
<td></td>
<td>• Max. cable length of 365 m</td>
<td>• Communication: 4 – 20 mA</td>
</tr>
<tr>
<td></td>
<td>• Choice of mounting brackets available for ease of installation</td>
<td>• Approvals: ATEX, FM, CSA</td>
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<tr>
<td></td>
<td>• Approvals: ATEX, FM, CSA</td>
<td></td>
</tr>
<tr>
<td><strong>Typical applications</strong></td>
<td>Installation in tanks, vessels, hoppers, open space like in dam or in open channel along with ultrasonics controllers like SITRANS LUT, HydroRanger 200 to form complete ultrasonic level or flow measurement system.</td>
<td>Level monitoring in deep wells, very foamy sumps &amp; wet wells, grease traps, irrigation canals, dams and reservoirs in water and wastewater treatment processes.</td>
</tr>
</tbody>
</table>

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<sup>1</sup> More information: [www.siemens.com/echomax](http://www.siemens.com/echomax)

More information: [www.siemens.com/sitranspmps](http://www.siemens.com/sitranspmps)

More information: [www.siemens.com/sitranslh100](http://www.siemens.com/sitranslh100)

More information: [www.siemens.com/sitranslvl100](http://www.siemens.com/sitranslvl100)

More information: [www.siemens.com/sitranslv5100](http://www.siemens.com/sitranslv5100)

More information: [www.siemens.com/pointek](http://www.siemens.com/pointek)

More information: [www.siemens.com/pointek](http://www.siemens.com/pointek)
### Flow measurement

<table>
<thead>
<tr>
<th>Electromagnetic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pointek CLS100 / 200</strong></td>
</tr>
<tr>
<td>Compact 2-wire inverse frequency shift capacitance switch for level detection in constricted spaces for interfaces, solids, liquids, slurries and foam.</td>
</tr>
<tr>
<td><strong>Features and benefits</strong></td>
</tr>
</tbody>
</table>
| • Tip-sensitive switch, unaffected by conductive or non-conductive buildup | • Beam angle: 12°  
• 3-digit display  
• Programming using 2-push buttons  
• Approvals: ATEX, FM, CSA, C-Tick, INMETRO | • Compact wafer design meets EN 1092, DIN and ANSI flange standards  
• Corrosion-resistant AISI 316L stainless steel sensor housing  
• Highly resistant liner and electrodes for aggressive media  
• Medium temperature rating up to + 200 °C (+ 390 °F)  
• IP67 / NEMA 4X / 6 enclosure rating  
• Designed for patented in-situ verification of the whole flowmeter using the SENSORPROM fingerprint  
• Easy commissioning, SENSORPROM unit automatically uploads calibration values and settings  
• Approvals: ATEX-2GD Zone I, FM C1 Div. 2 | • Wide pressure range flanges: PN 6 to PN 100, ANSI Class 150 / 300, AS 2129 / AS 4087, AWWA or JIS  
• Wide range of electrode and liner materials including EPDM (drinking water approved)  
• Fully-welded construction that suits the toughest applications and environments  
• Designed for patented in-situ verification of the whole flowmeter using the SENSORPROM fingerprint  
• Easy commissioning, SENSORPROM unit automatically uploads calibration values and settings  
• Approvals: Drinking water approvals and certificates according to national and international standards ATEX, FM, CSA |
| **Typical applications** | **Typical applications** | **Typical applications** | **Typical applications** |
| High and low point level detection for clean & contaminated liquids and slurries holding tanks and sumps in water and wastewater treatment plants. Overspill and pump protection in wet wells. | Non-contact level detection of bulk solids, liquids and slurries stored in storage tanks and in sumps of water and wastewater treatment plants. Simple pump control applications. | Volume flow measurement for chemical dosing in water treatment processes, with a minimum electrical conductivity of 5 μS/cm. | Volume flow measurement for water, salt water and all liquids and chemicals with a minimum electrical conductivity of 5 μS/cm. |

More information:  
- [www.siemens.com/pointek](http://www.siemens.com/pointek)  
- [www.siemens.com/pointek](http://www.siemens.com/pointek)  
- [www.siemens.com/mag1100](http://www.siemens.com/mag1100)  
- [www.siemens.com/mag3100](http://www.siemens.com/mag3100)
### Flow measurement

<table>
<thead>
<tr>
<th>Electromagnetics</th>
<th>Ultrasound</th>
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<tbody>
<tr>
<td><strong>SITRANS F M MAG 5100 W</strong></td>
<td><strong>SITRANS F M MAG 5000 / 6000 / 6000 I</strong></td>
</tr>
<tr>
<td><strong>Brief description</strong></td>
<td><strong>Electromagnetic flow sensor in a rugged, fully-welded design, can be upgraded to IP68 on site to be buried and flooded. Designed for the water and wastewater industry.</strong></td>
</tr>
<tr>
<td><strong>Features and benefits</strong></td>
<td><strong>• Hard lining guarantees consistent accuracy throughout the entire pressure and temperature range</strong></td>
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<td></td>
<td><strong>• Increased flow accuracy for water leak detection</strong></td>
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<td><strong>• Built-in length according to ISO 13359</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• Designed for patented in-situ verification of the whole flowmeter using the SENSORPROM fingerprint</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• Easy commissioning, SENSORPROM unit automatically uploads calibration values and settings</strong></td>
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<tr>
<td></td>
<td><strong>• 0xD of straight pipe required upstream and downstream from the sensor</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• Approvals: according to regional and national standards, CT, OIML R49, MI 001, PTB K 7.2, BEV OE 12/CO40, MCERTS, WRAS, NSF/ANSI Standard 61, DVGW 270, ACS and BelgAqua</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• Superior signal resolution for optimum turn-down ratio</strong></td>
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<td></td>
<td><strong>• Automatic reading of SENSORPROM data for easy commissioning</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• User-configurable operation menu with password protection</strong></td>
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<tr>
<td></td>
<td><strong>• Flow rate in various units</strong></td>
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<tr>
<td></td>
<td><strong>• Totalizer for forward, reverse and net flow plus additional information</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• Multiple functional outputs for process control, mini­ mum configuration with analogue, pulse /frequency and relay output (status, flow direction, limits)’</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• Comprehensive self-diagnostic for error indication and error logging’</strong></td>
</tr>
<tr>
<td></td>
<td><strong>• Compact or remote version’</strong></td>
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<tr>
<td></td>
<td><strong>• Communication: HART®, Modbus RTU, PROFIBUS PA, IDA optical eye via Modbus RTU (FUS080 only)</strong></td>
</tr>
</tbody>
</table>

*More information: [www.siemens.com/mag5100w](http://www.siemens.com/mag5100w)*

*More information: [www.siemens.com/sitransfm](http://www.siemens.com/sitransfm)*

*More information: [www.siemens.com/mag8000](http://www.siemens.com/mag8000)*

*More information: [www.siemens.com/sonokit](http://www.siemens.com/sonokit)*
### SITRANS FUS380

**Brief description:** Battery- or mains-powered 2-track flowmeter designed for water utility applications that do not require custody transfer approvals.

**Features and benefits:**
- Battery-powered up to 6 years
- Mains-powered with battery backup
- High measuring frequency up to 15 Hz / 0.5 Hz (mains / battery)
- 2-track measuring principle for optimum accuracy
- Compact or remote transmitter installation
- No pressure drop
- Dynamic range Qi:Qs up to 1:400
- Communication: IrDA optical eye via Modbus RTU protocol

**Typical applications:** Flowmetering in water flow in district heating plants, chiller plants, boiler stations and local networks.

More information: [www.siemens.com/fus380](http://www.siemens.com/fus380)

### SITRANS FUE380

**Brief description:** The 2-track SITRANS FUE380 is the custody transfer approved version of SITRANS FUS380.

**Features and benefits:**
- Designed to provide accurate high-resolution energy measurement
- Provides uncompromising performance for high-volume, water-based applications
- Approved according to the MID directive and approved for custody transfer
- Custody transfer sealed to ensure total data security
- Approvals: MID MI–004 according EN1434, OIML R 75 class 2
- Communication: IrDA optical eye via Modbus RTU protocol

**Typical applications:** Flowmeter for custody transfer applications in district heating plants, local networks, boiler stations, substations, chiller plants and general water applications. Combined with the energy calculator FUE950 and a pair of temperature sensors, FUE380 can be used as part of an energy meter system with custody transfer requirements.

More information: [www.siemens.com/fue380](http://www.siemens.com/fue380)

### SITRANS FUE950

**Brief description:** Universal custody transfer approved energy calculator. It is designed for energy metering in hot water, chilled water and cooling/heating applications.

**Features and benefits:**
- To be used in combination with SITRANS FUS380 / FUE380 and alternatively MAG 5000 / 6000 / 8000 or FST020
- SITRANS FUE950 is modular in construction and can by order be fitted with optional modules
- Suitable for 2- and 4-wire temperature sensor connection
- Delivered with heat-cooling approved PT500 sensor set (incl. sensor pockets)
- Provides uncompromising performance for high-volume, water-based applications
- Approach: MID for CT energy metering (EN1434, heating) and PTB K7.2 (cooling)
- Communication: pulse output, pulse input, current output, Optical M-Bus data reading in accordance with EN 1434
- Delivered with heat-cooling approved PT500 sensor set
- Approvals: MID for CT energy metering (EN1434, heating) and PTB K7.2 (cooling)
- Communication: pulse output, pulse input, current output, Optical M-Bus data reading in accordance with EN 1434
- Approvals: MID for CT energy metering (EN1434, heating) and PTB K7.2 (cooling)
- Communication: pulse output, pulse input, current output, Optical M-Bus data reading in accordance with EN 1434

**Typical applications:** The energy calculator is used in combination with a flowmeter in applications like: Heatmetering in power stations, heatsystem substations, district heating networks, cooling as chilled water applications or combined cooling/heating applications.

More information: [www.siemens.com/fue950](http://www.siemens.com/fue950)

### SITRANS FST020

**Brief description:** Basic clamp-on ultrasonic flowmeter, performing basic measurement tasks. Non-intrusive metering, easy installation and maintenance.

**Features and benefits:**
- No process shutdown for installation
- Minimal maintenance: external sensors do not require periodic cleaning
- No moving parts to wear or foul
- No pressure drop or energy loss
- Compact, integral design reduces installation cost
- Wide-Beam technology ensures high performance
- Zeromatic Path eliminates zero drift
- Bidirectional flow operation
- 1MByte data logger with both site & data logger storage
- Approvals: UL, ULc, C-Tick
- Communication: BACnet MSTP, Modbus RTU, VT100, RS232

**Typical applications:** District cooling applications, water leak detection and water monitoring applications, wastewater influent and effluent, processed sewage and sludge

More information: [www.siemens.com/fst020](http://www.siemens.com/fst020)
### Flow measurement

<table>
<thead>
<tr>
<th><strong>Ultrasonic clamp-on</strong></th>
<th><strong>Orifice plates</strong></th>
<th><strong>Vortex</strong></th>
<th><strong>Pressure measurement</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>SITRANS FUS1010</strong></td>
<td><strong>SITRANS FUE1010</strong></td>
<td><strong>SITRANS FX300</strong></td>
<td><strong>SITRANS P 200 / 210 / 220</strong></td>
</tr>
<tr>
<td><strong>Brief description</strong></td>
<td>Advanced and highly accurate clamp-on ultrasonic flowmeter allows simultaneous measurement of up to 4 independent pipes and bidirectional flow operation.</td>
<td>Highly accurate ultrasonic clamp-on flowmeter for energy measurement. Wall mount or portable version.</td>
<td>Vortex flowmeters provide accurate volumetric and mass flow measurement of steam, gases and liquids, with integrated temperature and pressure compensation.</td>
</tr>
</tbody>
</table>
| **Features and benefits** | - Operation in Wide-Beam transit-time or Doppler mode  
  - Easy installation; external sensors, no need to cut pipe or stop flow  
  - No pressure drop or energy loss  
  - Wide turndown ratio  
  - Choice of single channel or dual channel/dual path, with doppler capability. Four channel/four beam optional  
  - Zeromatic Path automatically sets zero without stopping flow and reduces zero drift, even at low flow  
  - 1 MByte data logger with logger storage  
  - Approvals: INMETRO, CSA, FM, ATEX, C-Tick, HART®, BacNET MSTP/BACnet IP, Modbus RTU/TCP/IP, Ethernet IP  
  - Communication: RS232, Modbus (wall mount only)  
  - Datalogger integrated | - Measurement at low flow rates and low differential temperature  
  - Various output options including energy rate and total consumption  
  - Single channel or dual channel  
  - Detection of aeration and cavitation  
  - Approvals: FM, CSA, (portable version: UL, ULC)  
  - Communication: RS232, Modbus (wall mount only)  
  - Datalogger integrated | - Compact or remote design (max. 15 m)  
  - Single or dual transmitter version  
  - Flow, pressure and temperature reading at one single point  
  - Accuracy: ± 0.75 % ... 2.5 % (depending on media)  
  - Fully-welded stainless steel construction; high corrosion, pressure and temperature resistance  
  - Isolation valve to protect pressure sensor during pressure/leak testing in the pipe  
  - Communication: HART®  
  - Approvals: FM, ATEX, IEC Ex  |
| **Typical applications** | Revenue grade thermal energy submetering; energy efficiency distribution monitoring, with a real-time coefficient of performance (COP) for HVAC systems. Water leak detection systems. | Perfect match for chiller efficiency analysis, real-time COP for HVAC systems, chilled and hot water submetering, glycol rate control. | Consumption measurement in compressed air systems and other industrial gases or steam installations. |

> More information: [www.siemens.com/fus1010](http://www.siemens.com/fus1010)  
> More information: [www.siemens.com/fue1010](http://www.siemens.com/fue1010)  
> More information: [www.siemens.com/sitransfx300](http://www.siemens.com/sitransfx300)  
> More information: [www.siemens.com/sitranspds3](http://www.siemens.com/sitranspds3)  
> More information: [www.siemens.com/p200](http://www.siemens.com/p200)
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<tr>
<th>Features and benefits</th>
<th>Brief description</th>
<th>Typical applications</th>
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<td><strong>Temperature</strong></td>
<td><strong>Temperature measurement</strong></td>
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<td></td>
<td><strong>SITRANS P250</strong></td>
<td>Differential pressure transmitter for liquids and gases.</td>
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<tr>
<td></td>
<td><strong>SITRANS P300</strong></td>
<td>Digital pressure transmitter for gauge, absolute pressure and level measurement.</td>
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<tr>
<td></td>
<td><strong>SITRANS P DS III</strong></td>
<td>Advanced digital pressure transmitter for gauge, absolute and differential pressure, level and flow measurement.</td>
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<td><strong>SITRANS TS sensors</strong></td>
<td>SITRANS TS temperature sensors for a wide range of temperature applications.</td>
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<tr>
<td></td>
<td><strong>SITRANS TH, TR, TF transmitters</strong></td>
<td>Portfolio of temperature transmitters for head, rail or field mounting, for connection to many different thermocouples, resistance thermometers, as well as mV and resistance sensors.</td>
</tr>
</tbody>
</table>

**SITRANS P250**
- **Brief description**: Differential pressure transmitter for liquids and gases.
- **Features and benefits**: Piezoresistive measuring cell with ceramic diaphragm, measuring range from 0.1 to 25 bar, for aggressive and non-aggressive gases, vapors and liquids, fixed measuring ranges, compact design, accuracy < 1%, also with sealing material EPDM.
- **Typical applications**: Cost-optimized flow measurement, monitoring and differential pressure measurement.
- **More information**: www.siemens.com/sitransp250

**SITRANS P300**
- **Brief description**: Digital pressure transmitter for gauge, absolute pressure and level measurement.
- **Features and benefits**: Piezoresistive measuring cell, oil-filled, measuring range from 10 mbar to 400 bar, high measuring accuracy up to 0.075%, configuration through push buttons and LCD, HART®, PROFIBUS PA, ingress protection up to IP68, front flush mounted membrane and housing made of stainless steel, FDA-compliant filling oils, excellent surface quality (Ra value ≤ 0.8 μm for process wetted parts), communication: 0–20 mA, HART®, PROFIBUS PA or FF, approvals: EHEDG, 3A.
- **Typical applications**: Pressure measurement in raw water intake, sludge line, grit wash water, methane gas, chemical storage, industrial utility applications, desalination and irrigation.
- **More information**: www.siemens.com/sitransp300

**SITRANS P DS III**
- **Brief description**: Advanced digital pressure transmitter for gauge, absolute and differential pressure, level and flow measurement.
- **Features and benefits**: Piezoresistive measuring cell, oil-filled, measuring range from 1 mbar up to 700 bar, separate replacement of measuring cell and electronics without recalibration, high measuring accuracy up to 0.075%, high long-term stability up to 0.125% per 5 years, configuration through push buttons/LCD, ingress protection up to IP68, extensive diagnostics and simulation functions with PDM, communication: 0–20 mA, HART®, PROFIBUS PA, PROFIsafe or FF, approvals: ATEX, FM, CSA, NEPSI, FDA, EHEDG.
- **Typical applications**: Various pressure, level and flow measurement in water/wastewater plants, chemical storage and other utility installations. Desalination & irrigation installations.
- **More information**: www.siemens.com/sitranspds3

**SITRANS TH**
- **Brief description**: SITRANS TH.
- **Features and benefits**: Installation in connection head Form B, galvanic insulation and fault detection, EMI-resistant transmission of the signal, SITRANS TR/TW.
- **Typical applications**: For all temperature applications.
- **More information**: www.siemens.com/sitransths
<table>
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<tr>
<th><strong>Weighing</strong></th>
<th><strong>Communication and software</strong></th>
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<td><strong>Weighfeeders</strong></td>
<td><strong>SITRANS weighfeeders</strong></td>
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<tr>
<td><strong>Milltronics MSI</strong></td>
<td><strong>Milltronics BW500</strong></td>
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<tr>
<td><strong>SITRANS RD100 / 200</strong></td>
<td><strong>SITRANS RD300</strong></td>
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<tr>
<td><strong>SITRANS RD500</strong></td>
<td><strong>Flexible outputs with up to</strong></td>
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<tr>
<td><strong>Brief description</strong></td>
<td><strong>Make measurement data visible and</strong></td>
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<td><strong>accessible from a remote location.</strong></td>
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<tr>
<td>Typical applications</td>
<td><strong>Remote monitoring of inventory levels, process and environmental applications, provides web access to most types of field instrumentation, including flow, level, pressure, temperature measurement and weighing.</strong></td>
</tr>
<tr>
<td><strong>Features and benefits</strong></td>
<td><strong>Remote data manager providing remote monitoring through data logging, web access and alarming for instrumentation.</strong></td>
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</tbody>
</table>

**SITRANS weighfeeders**

SITRANS WW100 and WW200 weighfeeders provide continuous feed rate control of lime for slaking in water purification processes. With dust-tight enclosure options and high temperature belt these proven weighfeeders ensure uninterrupted control for optimum process quality.

**The Milltronics MSI belt scale has more approvals than any other belt scale on the market with general, food, hazardous and trade approvals.**

**SITRANS RD100** is a loop-powered remote display, and RD200 is a universal remote digital display for Probe LU, Probe LR, SITRANS P MPS to install at areas with easier access.

**SITRANS RD300**

Dual-line, panel mount, remote digital display for process instrumentation for Probe LU, Probe LR, SITRANS P MPS to install at areas with easier access.

**SITRANS RD500**

Remote data manager providing remote monitoring through data logging, web access and alarming for instrumentation.

**More information:**

www.siemens.com/weighing

www.siemens.com/sitransrd

www.siemens.com/sitransrd500
### Typical Features

**Applications**

- **Weighfeeders**: Belt scales, Remote displays. Features include:
  - Approvals: Hazardous rated component options available.
  - Communication: 4 – 20 mA, Modbus ASCII.
  - Complete process control with Milltronics BW500.
  - Up to 100 tph flow rate capacity.
  - Painted mild steel, or stainless steel options.
  - Compact design for easy retrofit or new installations.
  - ± 0.25 – 0.5 % accuracy over a 10 – 100 % capacity rate range.

**Brief description**

- **Continuous feed rate control of lime for slaking in water purification processes.**
- **SITRANS WW100 and WW200 weighfeeders** provide optimum process quality.**weighfeeders ensure uninterrupted control for**
- **Options and high temperature belt**; these proven weighfeeders are designed for demanding process control in the water supply and wastewater treatment where outstations (RTUs) are connected over long distances.

### Telecontrol

<table>
<thead>
<tr>
<th>Description</th>
<th>Software</th>
<th>SITRANS Library</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industrial Remote Communication / Telecontrol</strong></td>
<td><strong>SIMATIC PDM</strong></td>
<td>The SITRANS Library consists of function blocks, block icons and faceplates for a growing number of field instruments out of the families SITRANS and SIPART. Target systems are SIMATIC PCS 7 and SIMATIC PLCs in parallel with SIMATIC WinCC and panels. Automation solutions can be implemented just by using already existing features and diagnostics information available in the instruments.</td>
</tr>
<tr>
<td><strong>Brief description</strong></td>
<td>Universal, non-proprietary tool for the configuration, parameterization, commissioning, diagnostics and maintenance of intelligent field devices (sensors and actuators) and field components (remote I/Os, multiplexers, control room devices, compact controllers).</td>
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</tr>
<tr>
<td><strong>Typical applications</strong></td>
<td><strong>TeleControl Basic</strong>: Solutions for small systems with minimal functional scope (TeleControl Basic) as well as for extensive process plants (TeleControl Professional). Can be implemented independently and also combined.</td>
<td><strong>TeleControl Basic</strong>: Solutions for small systems with minimal functional scope (TeleControl Basic) as well as for extensive process plants (TeleControl Professional). Can be implemented independently and also combined.</td>
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<td></td>
<td><strong>TeleControl Professional</strong>:</td>
<td><strong>TeleControl Professional</strong>: Enhanced SCADA solution for extensive applications. For complex telecontrol tasks in distributed processes with high demands on availability, redundancy and data security.</td>
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<td></td>
<td></td>
<td><strong>Customer advantages are</strong>: Same look and feel like standards in SIMATIC PCS 7, No additional training for operators, Usage of features in field devices without additional cost: customers use what they already have paid for.</td>
</tr>
</tbody>
</table>
| | | | **Typical applications**
| | | | **TeleControl Basic**: Remote control of distributed processes in the water supply, water treatment, irrigation or flood protection. | **Configuration, parameterization, commissioning, diagnostics and maintenance of intelligent field devices and field components.** |
| | | | **TeleControl Professional**: Ideal for demanding process control in the water supply and wastewater treatment where outstations (RTUs) are connected over long distances. | | **Innovative dosing using the dosing feature of SITRANS F M MAG 6000 at lower cost, Fast and flexible operation of valves with SIPART PS2 with a much higher degree of transparency.** |

More information:

- Telecontrol: [www.siemens.com/industrial-remote-communication](http://www.siemens.com/industrial-remote-communication)
- SIMATIC PDM: [www.siemens.com/process-instrumentation](http://www.siemens.com/process-instrumentation)
- SITRANS Library: [www.siemens.com/sitranslibrary](http://www.siemens.com/sitranslibrary)
Totally Integrated Automation

Products from the controller level to the field level
With Totally Integrated Automation (TIA), Siemens is the only provider of an end-to-end integrated portfolio of products and systems for the automation of the entire production workflow.

Totally Integrated Automation reduces the complexity of the automation solution and enables what really counts: the practical combination of optimally coordinated individual components – without interface problems.

Totally Integrated Automation integrates not only the production process but all parts of the company – from the field level to the management level. The result: a perfectly coordinated overall concept that enables higher productivity.

<table>
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<tr>
<th>Management Level</th>
<th>Operations Level</th>
<th>Control Level</th>
<th>Field Level</th>
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<tr>
<td>PLM – Product Lifecycle Management</td>
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<td>SINUMERIK Computer Numeric Control</td>
<td>PROFIBUS PA</td>
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<td>SIMOTION Motion Control</td>
<td>SIMATIC NET Industrial Communication</td>
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<td></td>
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<td>SIMATIC PCS 7 Automation Systems</td>
<td>HART</td>
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<td></td>
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<td>SIMATIC Ident Industrial Identification</td>
<td>IO-Link</td>
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</tbody>
</table>
Example: SIMATIC PCS 7. The innovative process control system offers numerous options for connecting I/Os as well as for sending and receiving process signals via sensors and actuators.
The information provided in this brochure contains merely
general descriptions or characteristics of performance which
in case of actual use do not always apply as described or which
may change as a result of further development of the prod-
ucts. An obligation to provide the respective characteristics
shall only exist if expressly agreed in the terms of contract.

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parties for their own purposes could violate the rights of the
owners.