The background image shows a worker in a hard hat and safety vest standing on a metal bridge or walkway over water. The sky is filled with dramatic, colorful clouds. Overlaid on the right side of the image are various digital and technical graphics, including a blue and orange wireframe structure, a network diagram with nodes and lines, and a semi-transparent orange rectangle in the top right corner. A teal banner is positioned across the middle of the image, containing the main title.

# Portafolio SIEMENS

## Instrumentación de Procesos



## Presión



## Temperatura



## Flujo



## Nivel



## Posicionadores



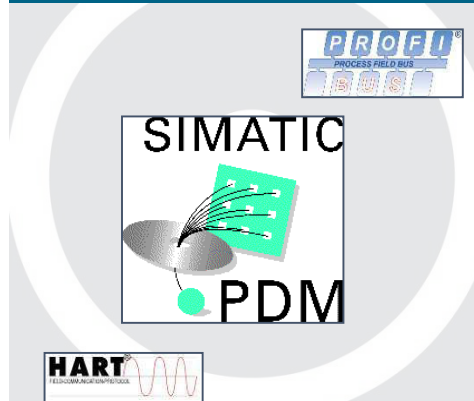
## Indicadores Registradores



## Pesaje



## Software

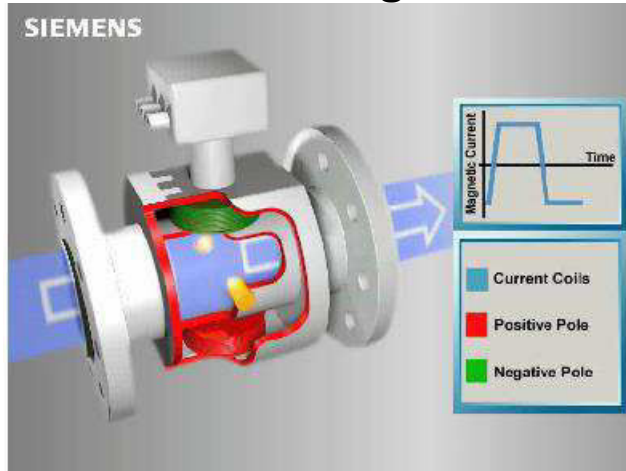




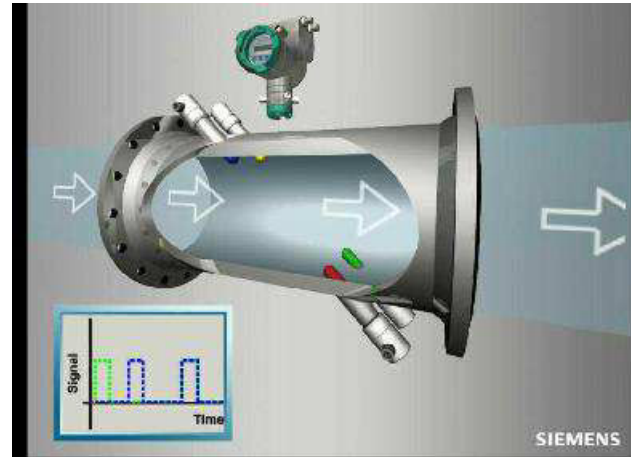
## PORTAFOLIO DE CAUDAL



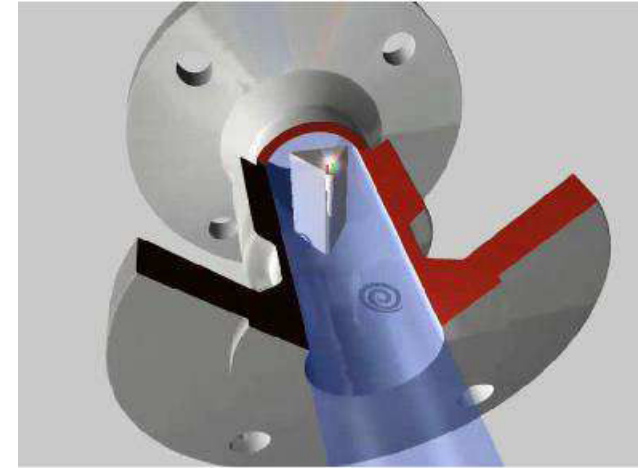
## Electromagnético



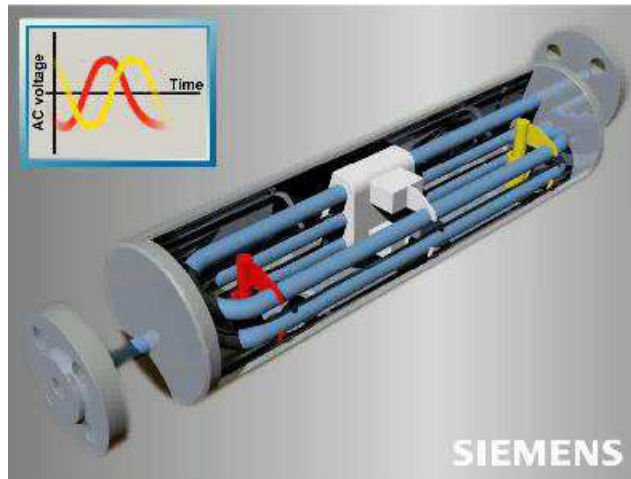
## Ultrasónico tiempo en transito



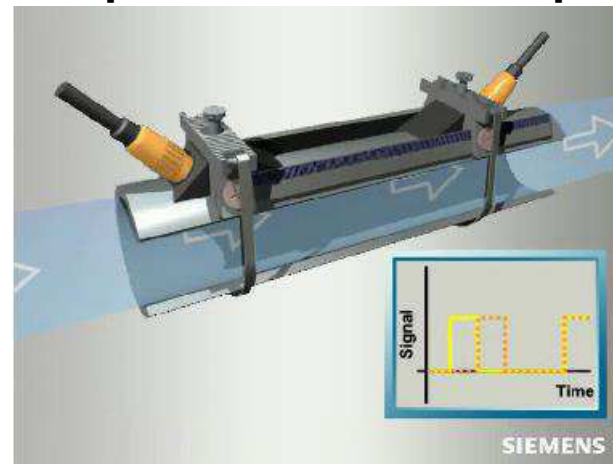
## Vortex



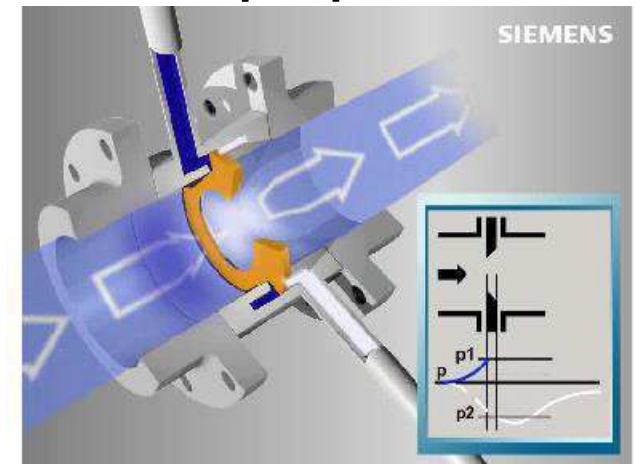
## Másico o de efecto Coriolis



## Tiempo en transito Clamp-on



## Placa orificio por presión diferencial







## SITRANS F



### Característica / Función

Magnético, Coriolis, Vórtex,  
Ultrasónico, de tubo o canal abierto

Medidores de flujo magnético AC o DC

Proceso de Calibración Profesional

Dosificación o Batching

Integración en PCS 7 y otros



### Beneficio para el cliente

- ▶ Excelente ajuste para cualquier tipo de industria. (minería, alimentos, agua, celulosa, refinería, etc).
- ▶ Soluciones para aplicaciones difíciles como bajo flujo, alto contenido de sólidos o baja conductividad.
- ▶ Calibración rastreable de cada equipo. Datos de calibración a través de memoria extraíble. Verificación portátil para medidores MAG. Clamp-On Portable para confirmaciones.
- ▶ Funciones integradas para soluciones conductoras o no conductoras.
- ▶ Biblioteca SITRANS para PCS 7 Comunicaciones de bus de campo disponibles.



## SITRANS FC410 y FC430



### Característica / Función

Compacto

Curva compacta patentada

Certificación SIL 3

Bastidor robusto / rígido

Funcionamiento ininterrumpido en aplicaciones de alta aireación



### Beneficio para el cliente

- ▶ El sensor más compacto del mercado, configuración fácil.
- ▶ Alta precisión  $<0,1\%$ , Alta densidad y sensibilidad al flujo; Baja pérdida de carga.
- ▶ Máxima seguridad y fiabilidad
- ▶ Alta inmunidad al ruido del proceso; Rígido contra las vibraciones
- ▶ El filtrado de aireación patentado permite una medición fiable con hasta un 10% de aireación ( $> 10\%$  es posible, depende del proceso)





## SITRANS FM



### Característica / Función

AC or DC meters

Chemically-resistive materials

SENSORPROM

Battery powered option

In-situ meter verification with the Siemens Vericator



### Beneficio para el cliente

- ▶ Solutions for difficult applications like low flow, low conductivity or high solids concentration up to 70%
- ▶ Wide range of materials allows even corrosive materials to be measured
- ▶ Replacement with automatic re-programming of any new transmitter without loss of data and accuracy
- ▶ A perfect solution for remote site and custody transfer monitoring where power and communications are not available
- ▶ Annual meter verification completed on-line, with a certificate printed in the field

## SITRANS FX300



### Característica / Función

Maintenance-free

Multiple measuring points

Redundant measurement

NAMUR-compliant



### Beneficio para el cliente

► Fully welded construction means lower cost of ownership (peace of mind for aggressives)

► One device means lower engineering and set-up costs  
Temperature & pressure compensation (e.g., steam mass flow)

► Ultimate safety and reliability with two sensors/measurements

► Meets the requirements issued by NAMUR







## SITRANS FU / SITRANS LU



### Característica / Función

In-line, non-intrusive clamp-on or open-channel

Liquids or gas flow including high pressures

Ideal for retrofit installations

Open channel  
SITRANS LUT440

Custody transfer  
(OIML R117)



### Beneficio para el cliente

▶ One-stop shop for all applications reduces engineering costs

▶ Single technology for reduced engineering/maintenance – non-intrusive means high pressure is not a problem

▶ Ease of upgrade from old technology – problem solver/reduced maintenance

▶ World's most accurate open-channel flow meter provides peace of mind

▶ Energy efficiency – measuring and calculation in hot water applications





## SITRANS FUH and FUG1010 externally mounted flow meters



### Característica / Función

Transducers are externally mounted to the pipe

FUH1010 (hydrocarbon version) capable of interface detection, product identification and density indication from a single device

Algorithms onboard to compensate for installations with limited straight run or poor flow profiles

FUG1010 (gas version) for check metering, flow survey verification, lost and unaccounted for (LAUF) gas analysis, and production and storage



### Beneficio para el cliente

▶ There is no need to cut into the pipe to install equipment and operations can continue

▶ Increase finished product quality and improve operational performance while simultaneously reducing the need for additional equipment such as density meters

▶ Reduces the need for physical changes to existing infrastructure and still achieves high accuracy performance

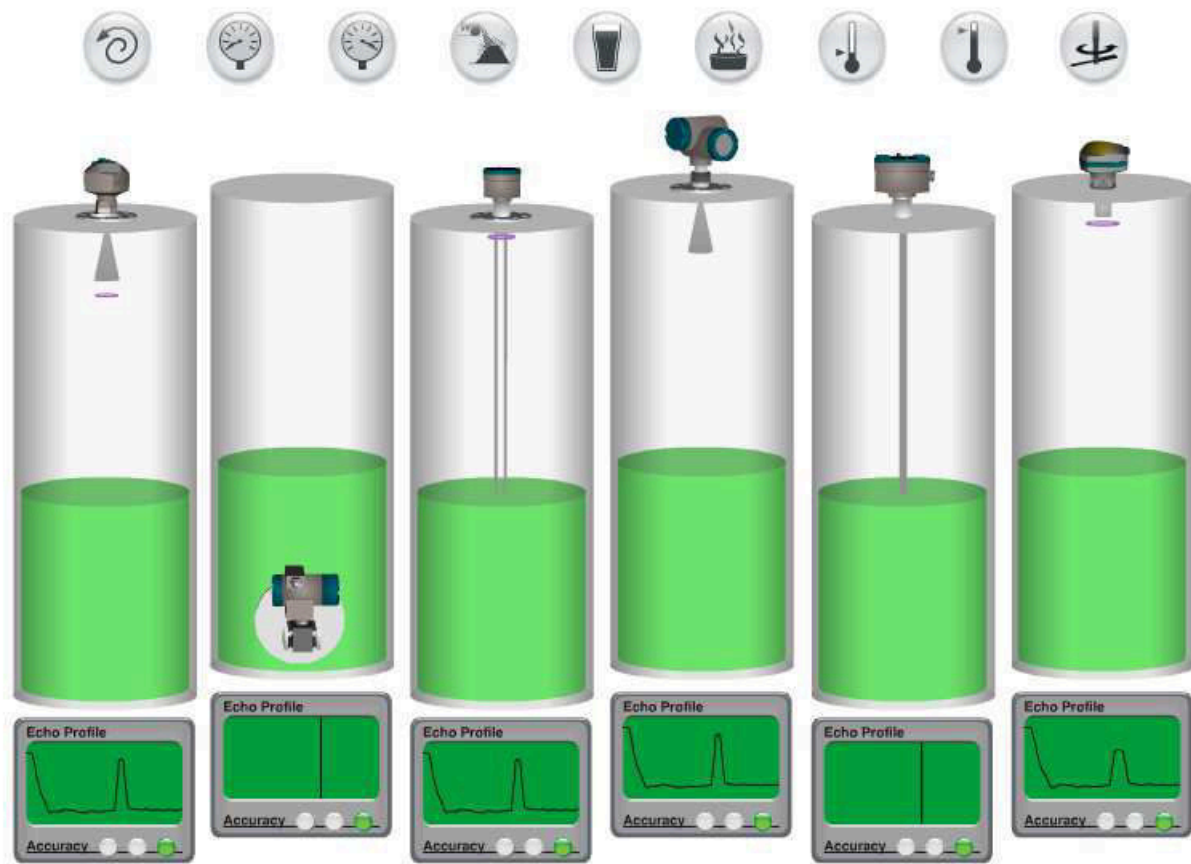
▶ A single version that can serve all dry and wet gas measurement operations



## PORTAFOLIO DE NIVEL







Pulse 6 GHz Radar

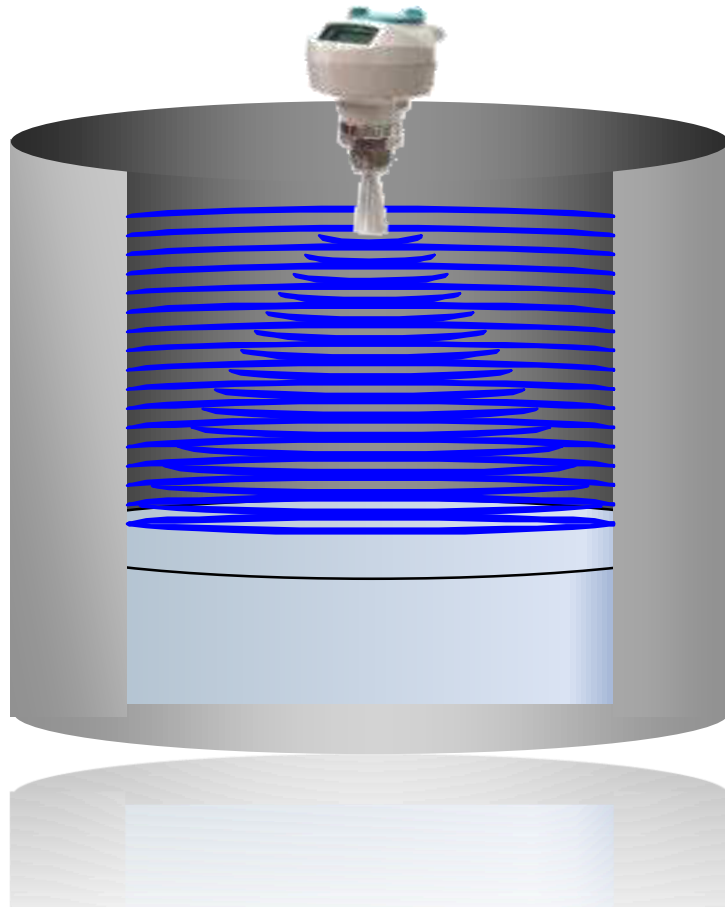
Pressure

Guided Wave Radar  
TDR

FMCW/Pulse 24 GHz  
Radar

Capacitance

Ultrasonic



El radar viaja a una velocidad conocida constante de 300.000.000 m/s independiente de la temperatura en el recipiente



## SITRANS L



### Característica / Función

Non-Contacting, Contacting,  
Continuous, Point-level

Microwave, Ultrasonic, Capacitance,  
Gravimetric, Hydrostatic, Mechanical

Process Intelligence

40+ years measuring level

Ease of Use



### Beneficio para el cliente

- ▶ Comprehensive line to deal with your application and installation requirement
- ▶ Multiple measuring principals to meet your process characteristics
- ▶ Deal with changing process conditions dynamically
- ▶ Industry knowledge built in the instrumentation
- ▶ Quick Start Wizards, 4 Button Programming, Hand Programmer





## SITRANS LR



### Característica / Función

World's first 78 GHz high-frequency transmitter

Process Intelligence signal processing

Multiple antenna designs – liquids, solids, dust, corrosives

SIL suitable transmitters

Quick set-up wizards



### Beneficio para el cliente

- ▶ reduced installation complexity and cost even tall and narrow silos.
- ▶ Deal with changing process conditions dynamically
- ▶ Universally applicable across site – multiple application suitability
- ▶ Accurate and safe measurements for critical applications such as reactor or utilities shutdown
- ▶ Reduced commissioning times and overall operating costs with identical set-up/programming and maintenance



## SITRANS LR560



### Característica / Función

78 GHz high frequency

Process Intelligence signal processing

Lens antenna; air purge connection for sticky solids

Completely sealed antenna and encapsulated electronics cup

Plug & Play performance



### Beneficio para el cliente

▶ Narrow beam & clear signal;  
easy installation

▶ Reliable level measurements

▶ Resistant to dust build-up

▶ Stable measurements in  
extreme conditions

▶ Instant availability and low maintenance





## SITRANS LG



### Característica / Función

Dual-process seals

SIL2/3 suitable

Full diagnostics and trending

Multiple enclosure types:  
valox, aluminum, or stainless steel  
(1.4435)

Multiple probe designs including high-  
pressure or high-temperature and  
coated



### Beneficio para el cliente

▶ Critical safety and reliability – peace-of-mind installation for applications such as phosgene and other environmentally sensitive chemicals

▶ Safety Shutdown System applicable – for applications such as boilers, reactors

▶ Reduced maintenance costs due to diagnostic/historical data storage – fast uptime recovery and asset management

▶ Universally applicable for many environments often seen in plants

▶ Universally applicable for special reactors, aggressive materials, and utilities control





## SITRANS LU



### Característica / Función

Self-cleaning technology

Process Intelligence signal processing

World's most accurate controller  
(1 mm)

MCERTS-approved

Pump control algorithms



### Beneficio para el cliente

▶ Reduced maintenance costs due to high transducer signal power – e.g., in wastewater treatment chemical addition tanks

▶ Reliable level measurements where product properties are changing

▶ Maintains accurate flow measurement of your effluent discharge

▶ Ensures compliance with environmental directives for your plant

▶ Reduces pump operating/energy costs by alternating them on off-peak energy tariffs and cycling them so they last longer



## PORTAFOLIO DE PRESION





## Familia SITRANS P



### Característica / Función

SITRANS P DS III upgrade  
Measuring accuracy: 0.065 %

SITRANS P410  
Highly accurate variant of SITRANS P DS III  
Measuring accuracy: 0.04 %

SITRANS P310  
Attractively priced device  
Measuring accuracy: 0.075 %

Extended portfolio with SITRANS P310 and P410

Pressure transmitter  
Measuring range: 250 mbar



### Beneficio para el cliente

Improved accuracy leads to higher plant efficiency

Additional accuracy for highly precise measurement tasks

Completes the pressure portfolio giving it an optimized price-performance ratio

Best price-performance choice

Additional pressure transmitter for measuring low relative pressure ranges







## PORTAFOLIO DE TEMPERATURA





## SITRANS TS500



### Característica / Función

Full line of temperature assemblies

Pre-assembled RTD, thermowell, and transmitter

Worldwide certifications available, SIL 2 & SIL 2/3

Full communication:  
HART, PA, FF

Extended diagnostics and modular service concept

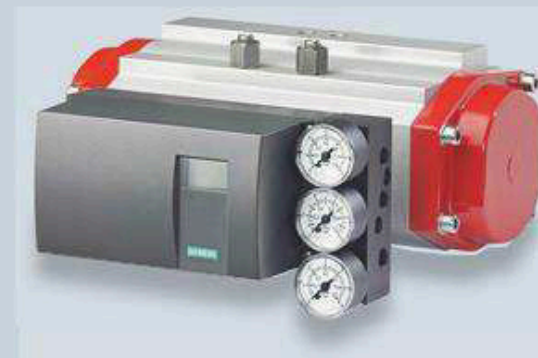


### Beneficio para el cliente

- ▶ One-stop shop – reduced purchasing costs offering maximum application coverage
- ▶ Reduced engineering, stocking, and maintenance costs
- ▶ Easy selection, purchasing, and integration, even for safety-related applications and instrumented systems
- ▶ Easy integration and interoperability with all DCS systems
- ▶ Ease of use, measurement reliability, maintenance, and start-up cost reduction



## PORTAFOLIO POSICIONADORES





## SIPART PS2



### Característica / Función

Extremely low-bleed operations

Universally applicable to any actuator type, in any kind of environment (even remote) with 3 step quick-start wizard

Integrated volume booster

Expanded and comprehensive diagnostics suite (valve performance tests) included with product

Fail-in-place functionality

HART 7, Profibus and Foundation Fieldbus communication



### Beneficio para el cliente

- ▶ Significant savings in cost of compressed air production (OPEX)
- ▶ Flexibility for easy and cost saving engineering, purchasing, commissioning and maintenance
- ▶ High flow rate for large actuators
- ▶ Reduces maintenance time and CAPEX
- ▶ Loss of electrical power > valve stays in last position
- ▶ Interoperability with all DCS systems





## SITRANS W



### Característica / Función

Unique PLC-based weighing

Award-winning MSI belt scale

Solids flow meters – large measuring range and resistant to build-up

Standard and custom-configured weigh feeders tailored to specific chemical process needs

Many load cell options, materials, approvals, and measurement ranges



### Beneficio para el cliente

- ▶ Ease of integration – reduced engineering costs for existing or new DCS systems
- ▶ Robust load cell technology – reduced maintenance and operating costs
- ▶ Reduced maintenance and operating costs even in dusty solids applications such as calcium carbonate
- ▶ Reduced lead times and reduced engineering costs
- ▶ One-stop shop for any chemical application environment



## Librería SITRANS



### Característica / Función

Based on the APL (Advanced Process Library)

All process values of a device in one faceplate

Unit can be read from device

Reading of limits from the device

Process-based diagnostic functions (e.g., empty pipe detection)



### Beneficio para el cliente

Same look & feel for all devices

All relevant information at a glance

Less effort and higher reliability in engineering and commissioning

Unified, transparent monitoring on DCS and field level

Higher plant reliability





**Preguntas?**