

PROCESS INSTRUMENTATION

Processes require precision

Reliable, low-maintenance pressure measurement with SITRANS P
usa.siemens.com/pressure

SIEMENS

It's impossible to imagine today's process industries without modern measurement technology. Each industry has its own specific demands, whether they're requirements for safety-related devices or harsh, rugged environmental conditions. The SITRANS P family offers the right portfolio for your applications.

Pressure measurement under control

Uncompromising precision

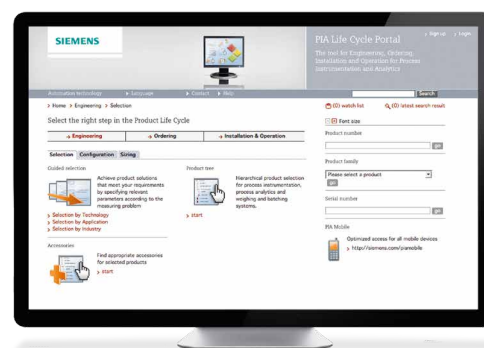
SITRANS P pressure transmitters are a complete family of measuring instruments for measuring gauge, differential, and absolute pressure that includes a range of performance values, load capacities, and materials. In addition to high measuring accuracy and ruggedness, the modular system features superb operating convenience and functionality as well as an ideal safety concept. Whether it's international approvals or industry standards, our transmitters meet the challenges presented by increasingly complex tasks in the process industries.

Safety included

You can select device versions that also offer comprehensive safety features. Warnings and alarms signal critical measured values for plant monitoring, while service or calibration intervals can be displayed predictively through self-diagnostics based on a maintenance scheduler.

Reliable measurements thanks to professional calibration services

Demands on accuracy, reliability, and availability of measurement instruments are steadily increasing. Our Siemens Industry Services provide complete, traceable calibration of your pressure transmitters. Equipped with expert knowledge of the devices and advanced, high-precision hardware, a Siemens technician can perform calibration services on-site or off-site.



Configure your devices using our PIA Portal:
www.usa.siemens.com/pia-portal



Benefits at a glance



- High process quality thanks to reliable measured values, even after years of operation
- Superior communication capabilities based on industry standards such as 4...20mA, HART®, PROFIBUS PA, and FOUNDATION Fieldbus
- Seamless integration in SIMATIC PCS 7 thanks to specific faceplates and special support from the SIMATIC PDM (Process Device Manager) central maintenance station
- Support for parameterization, commissioning, diagnostics, and maintenance for all current process control systems thanks to EDD, DTM, and FDI packages
- Devices for SIL applications up to Level 2/3 can be used
- Rugged enough for use in difficult environmental conditions



SITRANS P

pressure measurement

For gases, liquids, and paste-like media, the gauge pressure, absolute pressure, and differential pressure must be measured constantly to detect values that are too low or a potential overload.

The most important factor in selecting the right pressure transmitter is the required accuracy of the measuring range. SITRANS P transmitters offer a variety of choices from 0.03 percent to 0.3 percent. They're suitable for safety-related applications, with certifications according to SIL2 and SIL2/3.

Numerous bus systems for communication are also supported, including HART®, PROFIBUS PA, and FOUNDATION Fieldbus. In addition, the transmitters have all the most current approvals and certificates. Our pressure measuring devices give you the instrumentation reliability you need to meet your own specific requirements.

Benefits at a glance

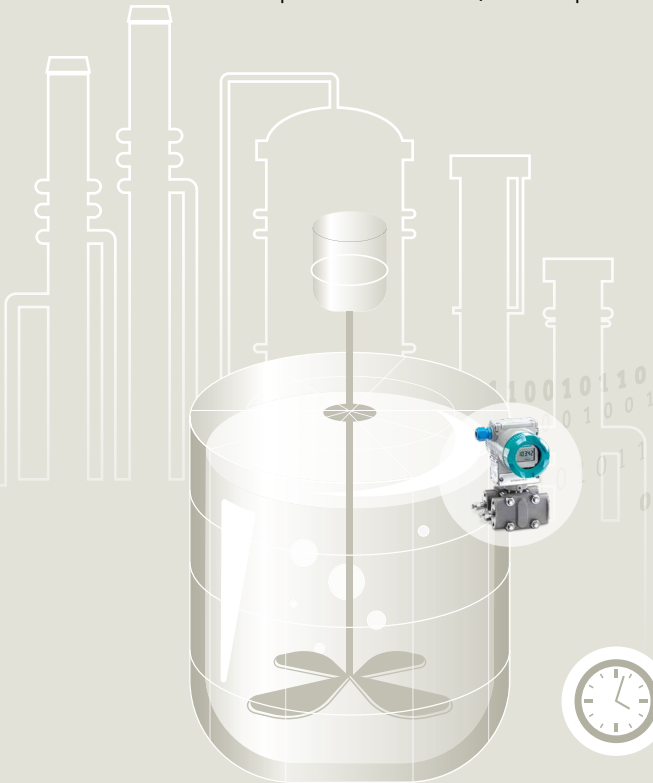
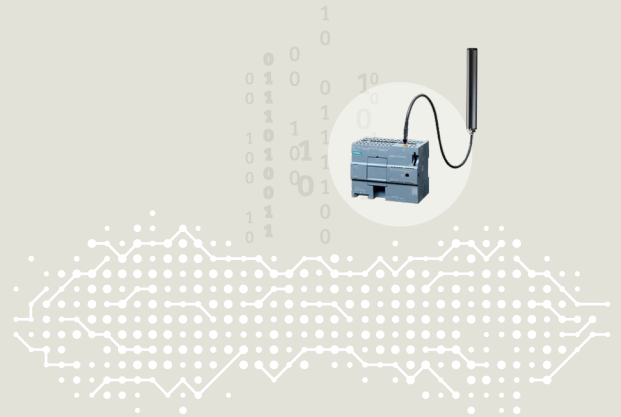
- All applications supported thanks to a highly diverse portfolio
- Meet all current explosion protection requirements
- High product variance thanks to standard options and customizations
- A variety of materials and process connection options available, including stainless-steel enclosure versions
- Expanded diagnostics
- Maintenance benefits

Communicating **digitally**

Distributed automation solutions based on open fieldbuses are now standard in many areas of the manufacturing and process industries. That's because the benefits of digital communication can be maximized in combination with fieldbuses, including transmission of measured values that retain the original accuracy, diagnostic options, and remote parameterization.

All the data at a glance

Thanks to modern fieldbus communication, field devices can be optimally integrated into the overall plant. Process and diagnostic data can be transferred from smart measuring devices to the control desk as well as to the control or maintenance system. An additional benefit: When the devices are integrated into PCS 7 Asset Management, users can access diagnostic information at all times, and can thus optimize plant maintenance and prevent downtimes. If desired, the data can be uploaded to MindSphere, the open cloud solution, for comprehensive analysis.



Remote safety handling

Digital transfer enables centralized SIL commissioning and validation – for example, from the control desk, without on-site device operation. Time saved through remote safety handling results in significantly reduced commissioning costs.



Ready for digitalization

With trend recording, 1,500 measured values are stored directly in the pressure transmitter. Thanks to limit monitoring and event counters, limit violations are recorded and displayed as a specific message, both on the device and in the control system.

Product range for your application



SITRANS P420

- High measurement accuracy of 0.040%
- Developed according to IEC61508 standards for SIL2/3
- Improved HMI display: larger, new and improved display with NAMUR NE107
- 4-key operation
- Remote safety handling
- Ready for digitalization

Industry: chemical, oil & gas, energy, shipbuilding, mechanical engineering



SITRANS P200/210/220

A series for all pressure types:

- P200: gauge and absolute pressure with ceramic diaphragm for medium measuring ranges (up to 1,000 psi)
- P210: gauge and absolute pressure with stainless-steel diaphragm for low measuring ranges (up to 8.7 psi)
- P220: gauge and absolute pressure with fully welded stainless-steel diaphragm for high measuring ranges (up to 14,500 psi)

Industry: mechanical engineering, shipbuilding, energy

SITRANS P320

- High measuring accuracy of 0.065%
- Developed according to IEC61508 standards for SIL2/3
- Improved HMI display: larger, new and improved display with NAMUR NE107
- 4-key operation
- Remote safety handling

Industry: chemical, oil & gas, energy, shipbuilding, mechanical engineering, water/wastewater





SITRANS P300

- Designed for hygienic applications and available with more than 90 process connections
- Ideally suited for external cleaning with high protection classes IP68 and IP69K
- Features all current hygiene, material, and calibration certificates
- Low measurement errors, even at high temperatures

Industry: food & beverage and pharmaceuticals

SITRANS P Compact

- Features a wide range of aseptic process connections
- Space-saving transmitter thanks to compact enclosure
- Easy cleaning
- Process temperatures up to 392°F possible

Industry: food & beverage and pharmaceuticals



SITRANS LH100, LH300

- Slim design with 0.92" diameter allows installation in pipes with 1" inner diameter
- Easy and safe installation even without cable socket thanks to built-in humidity filter in the cable
- Resistant to harsh environmental conditions due to the piezoresistive ceramic sensor
- SITRANS LH300: outer diameter of 1.02"

Industry: water/wastewater



Accessories

Remote seal

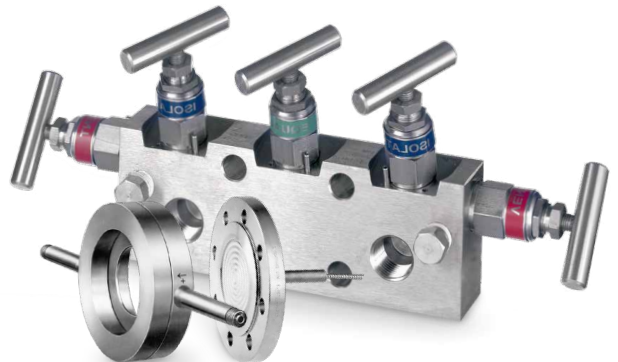
- High variance to meet all the requirements of each industry
- Wide range of diaphragm materials ensures excellent chemical resistance to medium

Aperture measurements

- Suitable for measuring high temperatures and pressure
- Can be combined with SITRANS P500, P410, P DS III, P310

Valves and valve blocks

- Save time with pre-mounted valve block
- Entire unit is seal-tested under pressure



Technical data



Type	SITRANS P420	SITRANS P320	SITRANS P300
	Advanced		Hygiene
Brief description	Digital pressure transmitter as "high performance" version of the P320 for gauge and differential pressure measurements	Digital pressure transmitter for measurement of gauge pressure, absolute pressure, differential pressure, flow, and level	Digital pressure transmitter for complex hygienic applications
Pressure types	Gauge pressure, absolute pressure, differential pressure	Gauge pressure, absolute pressure, differential pressure	Gauge pressure, absolute pressure
Measuring span	0.4 inH ₂ O to 10,000 psi	0.4 inH ₂ O to 10,000 psi	0.14 psi to 5,800 psi
Communication	4...20 mA/HART®, PROFIBUS PA, FOUNDATION Fieldbus (in preparation)	4...20 mA/HART®, PROFIBUS PA, FOUNDATION Fieldbus (in preparation)	4...20 mA/HART®, PROFIBUS PA, FOUNDATION Fieldbus
Accuracy¹⁾	0.04 %	0.065 %	0.075 %
Max. Turndown	100:1	100:1	100:1
Long-term stability	0.125%/5 years ²⁾	0.125%/5 years ²⁾	0.25%/5 years
Measured medium temperature	-40°F to 212 °F	-40 °F to 212 °F	-40 °F to 392 °F
Certificates/approvals	FM is/xp, CSA is/xp, ATEX, Exia/ib, Exd, ..., NEPSI, SIL, NSF, ...	FM is/xp, CSA is/xp, ATEX, Exia/ib, Exd, ..., NEPSI, SIL, NSF, ...	ATEX, Exia / ib, FM is, CSA is, NEPSI, NSF, 3A, ...
Diaphragm materials	Stainless steel, Hastelloy, tantalum, Monel, gold	Stainless steel, Hastelloy, tantalum, Monel, gold	Stainless steel, Hastelloy
Special features	Remote Safety Handling, Ready for Digitalisation	Remote Safety Handling	

1) Conformity error according to IEC 60770-1

2) Depending on the version

3) WirelessHART® requires no downscaling



SITRANS P Compact	SITRANS P200/210/220	SITRANS LH100	SITRANS LH300
Single-range transmitter			
Pressure transmitter for hygienic applications for measuring gauge and absolute pressure	Compact single-range transmitter for measuring absolute and gauge pressure	Pressure transmitter for measuring hydrostatic levels	Submersible sensor for hydrostatic level measurement
Gauge pressure, absolute pressure	Gauge pressure, absolute pressure	Level	Level
0 psi to 580 psi	1.46 psi to 14,500 psi	0...9 ftH ₂ O to 0...100 ftH ₂ O	0...9 ftH ₂ O to 0...100 ftH ₂ O
4...20 mA; 0...20 mA	4...20 mA	4...20 mA	4...20 mA
0.2 %	0.25 %	0.3 %	0.15 %
–	–	–	–
0.2%/year	0.25%/year	0.25%/year	0.15%/year
–14 to °F 392 °F	–22 °F to 248 °F	–14 °F to 176 °F	–14 °F to 176 °F
ATEX, Exib	ATEX, Exia, EAC, GL, BV, ABS, UL	ATEX, Exia, IEC Ex, EAC, UL, WRAS	ATEX, Exia, IEC Ex, EAC, UL, WRAS
Stainless steel	Ceramic, stainless steel	Ceramic	Ceramic

Focus on the process industries



Safety is integrated

Stringent safety requirements must be met in all areas and sectors of the process industries. One example is chemicals, and our portfolio for pressure measurement unequivocally satisfies the high demands of the chemical industry (SIL 3). Thanks to comprehensive diagnostic functions, you always know whether your process is running according to plan and can intervene and correct it if necessary, for example in reactors.

They are part of the overall plant and must be seamlessly integrated into the process for maximum safety, efficiency, and availability. Interventions such as filling, heating, cooling, mixing, and the monitoring of all process conditions are performed on an ongoing basis. In addition, parameters such as pump performance, temperature, energy consumption, and emissions must be measured, analyzed, and monitored.

Measuring everything that matters:

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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.

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