



# SIEMENS

## PROCESS INSTRUMENTATION

# Comprehensive Measurement Solutions

**For natural gas transmission and storage**

**[www.usa.siemens.com/pi-midstream](http://www.usa.siemens.com/pi-midstream)**

The efficient and effective movement of natural gas from production wells to consumer regions requires an extensive and elaborate transportation system. Natural gas produced from a particular gas field will have to travel a great distance to reach its final point of use. Natural gas is transported by a complex and extensive network of international and regional gas pipelines.

Along with pipelines, mid-stream processing of the gas industry also includes underground storage facilities

that provide improved reliability of gas supplies to consumers.

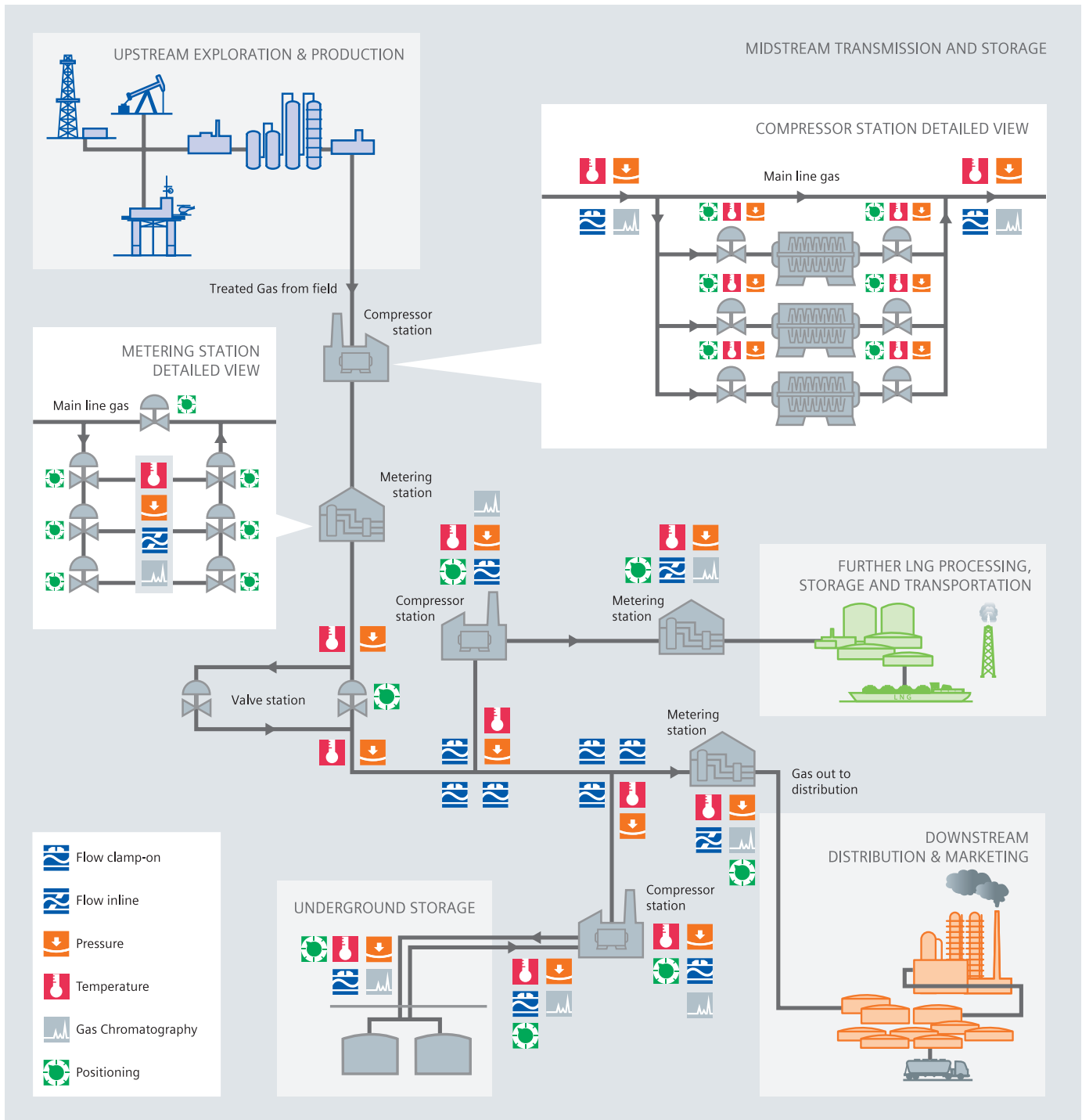
Siemens offers an innovative portfolio of field instruments and process analytics for your natural gas pipelines monitoring and underground storage control. Our products meet the stringent measurement requirements of the natural gas industry without high installation costs and will help you to manage your assets more effectively.

Furthermore, Siemens supplies control systems that include the latest in

communication equipment, such as wireless data transmission. Our wireless systems provide monitoring and control of remote locations where cable installation is impractical and phone lines unavailable. It eliminates the expense, time, and installation costs of cable circuits.

In addition to field devices with 4-20 mA communication protocol, Siemens instrumentation and analytics are available for traditional HART, fieldbus-based PROFIBUS, or other buses.

Here is a sampling of the instrumentation and analytic products that Siemens is supplying for new construction and maintenance projects on gas pipelines throughout the world.



Siemens understands your requirements – regardless which stages of natural gas transmission and storage require instrumentation, various measure

#### Siemens quality:

- High degree of product safety – through maximum process transparency
- Optimal resource efficiency – through innovative platform concepts
- Increased productivity – with optimal solutions for the operating phase
- Greater availability – through innovative service and support concepts

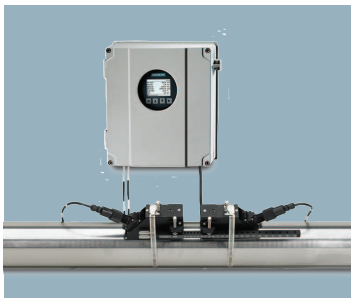
- High long-term investment security – through continuous innovation and maximum compatibility

#### Siemens results:

- Fast commissioning, short ramp-up times
- Accurate and reliable measurement
- Low total cost of ownership

### Clamp-on flow measurement

#### SITRANS FS230 clamp-on gas flow meter



- **Applications:** Gas pipeline monitoring, check measurement in compressor stations, and underground gas storage facilities
- **Technology:** Wide beam ultrasonic, clamp-on
- **Benefit:** Bi-directional flow meters provide zero stability and additional diagnostics at low installation costs as no pipe penetration and no system shutdown are required. Due to non-intrusive installation these flow meters are absolutely environmentally friendly and ensure zero fugitive emissions. The Sitrans FS230 features an AGA-10 and AGA-8 table which is available for speed of sound verification and fixed compensation gas for standard volume computation. The Siemens patented piping correction algorithm maximizes performance in less than perfect installations and the wide beam non-contact ultrasonic measurement means excellent turndown, and no process pressure limits.

### Inline flow measurement

#### SITRANS FC MASS flow meter



- **Applications:** Custody and non-custody transfer CNG metering in dispensers, compressor stations and underground storage facilities
- **Technology:** Coriolis flow meter with multi parameter measurement of mass flowrate, volumetric flowrate, density, and temperature.
- **Benefit:** Excellent measuring performance – 0.5% rate up to 5075psi; Low cost of ownership with no moving parts; Space-saving – enabling smaller and more efficient dispenser layout and construction; Flexibility – available in sizes, from 0.5 to 6.0 inch ensuring a precise application fit

### Pressure measurement

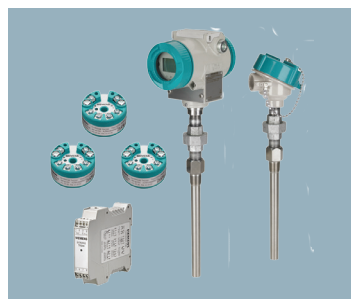
#### SITRANS P320/420 pressure transmitter



- **Applications:** Pressure measurement in compressor and metering stations
- **Technology:** Gauge, absolute, and differential pressure
- **Benefit:** Applicable in hazardous zones. Designed with pushbuttons for local setup and operation. Numerous diagnostics functions, such as operating hours counters, recording process extremes, and simulation checks, help simplify startup and operations.

### Temperature measurement

#### SITRANS T temperature transmitters and sensors



- **Applications:** Temperature measurement in underground storage facilities, compressor plants and check metering stations
- **Technology:** Universal design supports various types of sensors
- **Benefit:** High accuracy across entire ambient temperature range

## Valve control

### SIPART PS2 valve positioner



- **Applications:** Provides valve control along the pipeline, in valve and metering stations and compressor plants
- **Technology:** Digitally designed device that uses piezo-technology
- **Benefit:** Can be used for valves from almost all manufacturers. It features negligible air consumption and numerous diagnostic capabilities to detect a variety of abnormalities, such as pneumatic leaks or deposits in pipelines or fittings. Additionally, the partial stroke testing capability ensures proper valve performance and increases safety.

## Gas chromatography

### MAXUM II gas chromatographs



- **Applications:** Analytical process monitoring and control in compressor stations, gas quality control, calorific value measurement, gas purification such as fractionation or cryogenic plants can perform this measurement
- **Technology:** Online process gas chromatograph
- **Benefit:** Compact and modular design permits simple installation at or near the sampling point. It provides faster analysis and allows user-friendly remote operation. Further features are modularity of the analytics for most simple maintenance, intrinsically-safe design, single supply gas, and consequently low operational costs.

## Get more information:

[www.usa.siemens.com/pi](http://www.usa.siemens.com/pi)

[www.usa.siemens.com/processanalytics](http://www.usa.siemens.com/processanalytics)

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