

# SIEMENS

*Ingenuity for life*

Analytical Products and Solutions

## Online BTU measurement for heat and combustion control

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Many industrial processes combust natural gas or similar gas mixtures. Examples are heating product in the glass, steel or metal forming and manufacturing industry or generating steam and power using gas turbines in the power industry.

To optimize the combustion process, there is often a need to analyze the fuel gas to determine its heat value and other relevant gas properties. Such analysis can be critical or are even a requirement to increasing product quality and process efficiency.

Composition and gas properties are used to control the temperature of the manufacturing process and ensure reproducible product quality. With turbine combustion, these properties permit to operate high efficiency turbines, lower gas consumption and reduced exhaust emission.

Siemens offers standardized and customized measurement solutions that consist of the process gas chromatograph, sample conditioning system and optional enclosure.

The automatic measurement system generates data every 2-3 minutes. Frequent automatic validation without operator involvement as part of a measurement package that is simple

and long-term stable. With 50 years of experience in automatic and continuous process analyzers and worldwide market leadership in process gas chromatographs, Siemens is able to provide products that use leading-edge technologies to create comprehensive measurement solutions. These solutions allow you to address the ongoing need for reducing lifecycle cost, improving long-term performance and increasing process simplicity.

Siemens is your dependable business partner. We have built a leading reputation by providing continuous innovation and maximum compatibility using the industry's largest team of senior field service technician and application experts. You can rely on us for focused, comprehensive customer support and process analytics that deliver outstanding measurement quality.

In addition to the described standardized measurement solution for the monitoring of natural or fuel gas, Siemens designs, engineers and provides customized and turn key measurements systems utilizing on-line and automatic Process Gas Chromatographs, Continuous Gas Analyzers and Laser Spectroscopy.

Online and automatic BTU measurement system for heat and combustion control, for this specific measurement. It is comprehensive, fast, simple and reliable.

The Siemens measurement system provides component concentrations and calculated values with a high repeatability.

Measured components	Concentration range
Nitrogen	0-25%
Carbon dioxide	0-20%
Methane	50-100%
Ethane	0-20%
i-Butane	0-15%
n-Butane	0-10%
i-Pentane	0-10%
n-Pentane	0-1%
C6-C9	0-3%
Oxygen (optional)	0-4%
Calculated values	Superior BTU
	Inferior BTU
	Density
	Wobbe index
	Specific gravity

You can mount the analytical system, including the online process gas chromatograph, sample conditioning system and optional system enclosure, indoors or outdoors. The analyzer’s NEMA4X analyzer enclosure is suitable for electrically hazardous areas and installable in any plant environment.

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Because of the advanced technology used in the miniaturized, space-saving chromatograph, no valve maintenance is required. Furthermore, the technology delivers high quantification precision, repeatability and long-term stability over many months, independent of sample pressure and changes of ambient conditions. The analyzer validates and optimizes the analytical setup, including component retention times automatically when needed and performs auto calibration as desired. The analyzer’s modularity ensures simplicity and ease of use and maintenance. Power and a single supply gas and calibration standard is needed to transmit speciated gas compositions and calculated parameters every 150 seconds to the control system, automatically without operator attention.

With our online analyzer system, you also receive access to our process analytics customer support infrastructure. This extensive support network includes a 24/7 telephone hotline, remote analyzer Internet support and available field service.



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