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Brooks Instrument

# Brooks Instrument – Your Partner for Calorific Value Monitoring in Critical Natural Gas Applications

Brooks Instrument is an integral member of the Emerson Process Management Group, a family of companies collaborating and providing integrated process solutions.
This allows Brooks to use the intellectual assets of Emerson in developing new technologies helping its customers manage their processes more efficiently.

Brooks Instrument, Emerson Process Management targets critical combustion applications that deal – among others – with natural gas as fuel gas.

Brooks is a global provider of solutions for flow instrumentation, pressure measurement and the monitoring of calorific values. We have more than 150 global sales and service partners to assist you.

Brooks is also your partner when it concerns low flow applications like odorant dosing, gas blanketing, measuring and blending air or oxygen ratio.
Brooks Instrument offers its customers one of the widest ranges of products for metering and controlling low flow of liquids and gases.
The range covers all important measuring principles.

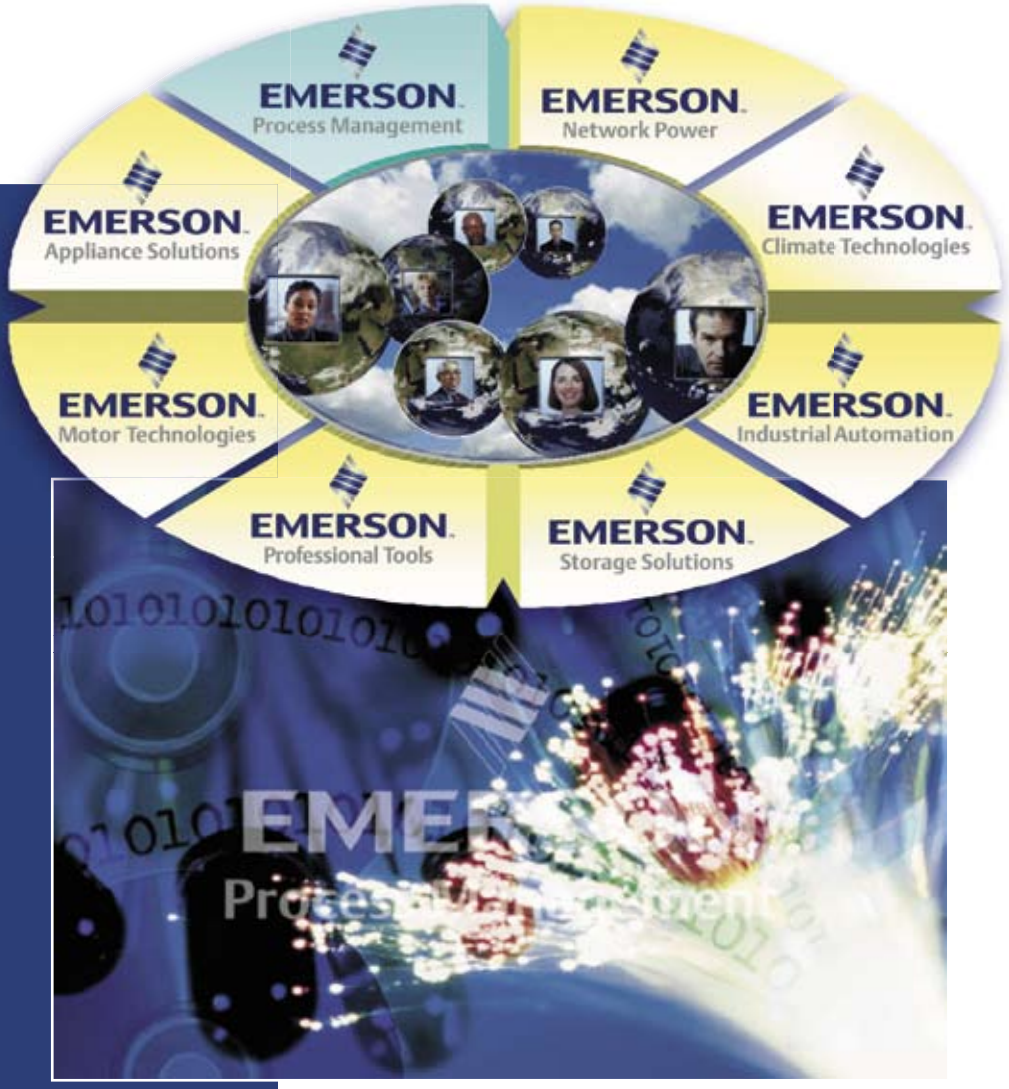
All product lines are continuously refined, reflecting ongoing evolution:


Brooks Instrument

FISHER

DANIEL

ROSEMOUNT




- *Brooks VA*
  *Variable area flow metering, controlling and accessories*
- *Brooks TMF*
  *Thermal mass flow metering and controlling*
- *Brooks Pressure*
  *Pressure measuring and controlling*
- *Brooks Quantim®*
  *Coriolis precision mass flow metering and controlling*

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**The impact of varying calorific values is illustrated in the two pictures shown above. Both burners use natural gas and have identical process conditions. The only difference is the gas property; i.e. their calorific value (CV) varies.**

Brooks Instrument and e·on ruhrgas formed a partnership in the development of the Brooks Gas Property Identifier (Brooks GPI).
The increase of natural gas applications in critical processes was the main driver behind this initiative. End users require real-time control of all parameters, which are relevant to the process.
The Brooks GPI offers accurate measure of calorific value in real time.
This solution has a very attractive cost of ownership when compared with other analyzing methods.

**Problems arising from CV variability**
The calorific value (CV) of natural gas is the energy that is released during combustion of the gas. However, the conditions in which this combustion takes place also have a significant influence on the actual amount of energy released.
Seasonal gas consumption challenges gas distributors, who continuously try to minimize gas variations at their mixing stations.
Changes in the CV of gas supplied require control of the combustion process, if constant or optimized performance is desired.

The problems arise from changes in flame temperature and/or the composition of the combustion gases that directly contact the process.

Critical applications can be found in the exploration and the distribution of gas. The efficiency of electric power generating systems, including these for fuel cells can be improved significantly when the variation of calorific value is monitored.

The Brooks GPI enables feed forward control, using real-time monitoring of calorific value. Other sensitive processes can be found in the glass industry and steel manufacturing. It enables real-time and accurate monitoring allowing the end-user to further optimize its processes. Brooks enables a calorific value measurement with the Gas Property Identifier for ¼ of the price of a gas chromatograph and in addition provides real time monitoring for pro-active process control. Leading industries that already optimize their processes by using the Brooks GPI, most value the features that are listed below:

| Features | Customer benefits |
|---|---|
| Real time monitoring of calorific value and Wobbe | • **Enables proactive control in critical processes**<br>• **Eliminates lag and settling time**<br>• **Improves yield and plant efficiency** |
| Patented design, accurate and affordable device | • **Tight process control**<br>• **Consistent quality**<br>• **Possible energy savings**<br>• **Value for money** |
| Wide operation range | • **Flexible in usage** |
| Small footprint and easy to install and operate | • **Compact device, all necessary functions are integrated**<br>• **Subsequent calibration not necessary**<br>• **Installation and operation will reduce operational costs further** |

**Please contact for more information:**

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