PROCESS INSTRUMENTS

# OPTIMISING BIOGAS PRODUCTION WITH INSTRUMENTATION AND CONTROL

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# PROCESS INSTRUMENTATION AND ANALYTICS OPTIMISES THE EFFICIENCY OF BIOGAS PRODUCTION

Pressure, temperature, flow, level and point levels must be monitored at various locations in a biogas plant. The correct choice of instrumentation and analytical systems influences both the efficiency and life-span of the plant.

Process Instruments is a specialist instrumentation and system integration company with a wealth of experience in the design, supply, commissioning and support of biogas plant measurement and automation systems.

## INSTRUMENTATION

Technical partners for leading manufacturers including Siemens, Labom, Fox and Hach, Process Instruments offer a comprehensive portfolio of industry-aligned solutions covering all requirements and budgets, from project development to installation, commissioning and support.

## AUTOMATION

Automation provides the necessary transparency for repeatable and efficient biogas production.

From Siemens' Totally Integrated Automation (TIA) and Totally Integrated Power (TIP) solution, to cost effective integration between automation and electrical infrastructure for small scale production, Process Instruments offer solutions that minimize downtime while maximising efficiency and production.

## PARTNERS

SIEMENS

bürkert FLUID CONTROL SYSTEMS

Labom MEASUREMENT TECHNOLOGY

FOX THERMAL INSTRUMENTS, INC.

PRECISION DIGITAL

thermo-electra measurement and control technics

KFG LEVEL

VALVE SOLUTIONS

simex

HACH

## PROJECT SCOPING & ANALYSIS

Whether you are commissioning a new plant or optimising biogas production from an existing facility, effective measurement is crucial to operational efficiency and ROI. With extensive Biogas experience, we identify requirements and evaluate a range of suitable solutions, delivering robust measurement systems that are easily maintained and deliver long term accurate results.

## SYSTEM SELECTION & INTEGRATION

Efficient biogas production from waste-water, landfill or feedstocks requires multiple process-wide measurements of biogas concentrations, temperatures, pressures and moisture contents. We combine the very latest award-winning solutions to the challenges of measuring water carbon dioxide in biogas production, with fully integrated control & automation systems.

## INSTALLATION & COMMISSIONING

We are experts at designing, installing, programming and troubleshooting control instrumentation and systems. Whether we are installing a replacement flow meter or delivering a complete biogas measurement solution, we believe a global understanding of the project and application is key to ensuring that your process goals are met.

## MONITORING & SUPPORT

We understand the cost of instrumentation failure. We not only supply instrumentation that delivers long term stability for negligible maintenance, our experienced customer care team ensure that every product we sell is supported, either through our own network of service and support engineers or from the original manufacturer.

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# BIOGAS MEASUREMENT CHALLENGE

1. OEM agnostic solutions
2. CHP, cogeneration & grid
3. Diagnostics & predictive solutions
4. Service & support engineers
5. PLC & DCS Systems
6. SCADA Systems

Whether you are manufacturing biogas for use in CHP plants or for direct supply into the gas grid, effective measurement underpins operational efficiency and ROI.

Optimising methane content is crucial to economic biogas production. Oxygenation, temperature, pressure and moisture all affect methane production; as does fermentation material, feed rates and stirring rates. The variety of measurements required and the challenging environmental conditions means that instrumentation not only needs to be corrosive resistant, it also needs to make adjustments for the high water and carbon dioxide content that have historically made biogas a demanding medium to measure.

A new generation of flow meters specifically designed for optimal performance in biogas production are revolutionising the accuracy, stability and complexity of biogas measurement.

# BIOGAS MEASUREMENT SOLUTION

FOX THERMAL INSTRUMENTS, INC.

2015 AWARDS WINNER

Processing's BREAKTHROUGH PRODUCTS 2015

**"Measure gas flow rate in standard units with no temperature & pressure compensation."**

The multi award-winning Fox Model FT1, Thermal Gas Mass Flow Meter from Fox Thermal Instruments measures gas flow rate in standard units (SCFM, NM³/hr, LBS/HR, KG/HR & many more) without the need for temperature and pressure compensation.

The Model FT1's DDC-Sensor™ technology platform that allows it to operate using the Gas-SelectX® gas menu selection tool.

A free software tool – FT1 View™ - is available for the Model FT1 that allows the user to connect to and configure the FT1 using a PC or laptop.

THE GAS-SELECTX® ALLOWS YOU TO CHOOSE THE PERCENTAGES OF 3 GASES FOR THE IDEAL GAS MIXTURE.

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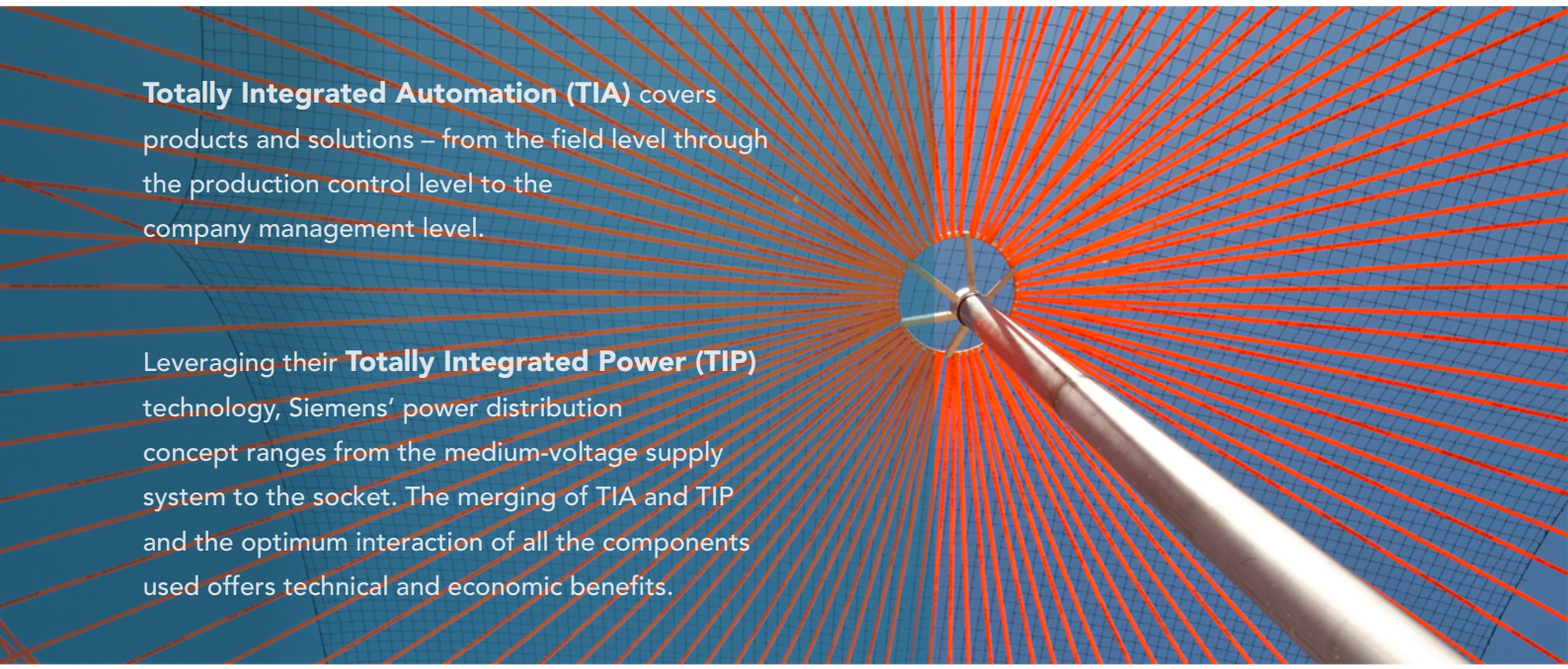
# INTEGRATED BIOGAS SOULTIONS

SIEMENS

Regardless of the raw material, plant size or process used Siemens' Totally Integrated Automation (TIA) and Totally Integrated Power (TIP) technolgies offer a fully integrated intrumentation and automation solution that delivers safe, economic and robust biogas plant energy management.

As a leading Siemens Technical Partner specialising in biogas, Process Instruments is ideally equipped to optimise the integration between automation and electrical infrastructure, simplying your operations, delivering scalable process efficiencies while avoiding unnecessary maintenance downtime.



**Totally Integrated Automation (TIA)** covers products and solutions – from the field level through the production control level to the company management level.

Leveraging their **Totally Integrated Power (TIP)** technology, Siemens' power distribution concept ranges from the medium-voltage supply system to the socket. The merging of TIA and TIP and the optimum interaction of all the components used offers technical and economic benefits.

## YOUR LIFE CYCLE BIOGAS PARTNER

As measurement and automation experts, we work closely with our biogas clients from poject inception to installation, commisioning and full life cycle support. We deliver efficient, sustainable and cost effective solutions that add quantifiable commercial value to biogas production.

To find out how we can help or to discuss your requirements with our expert team, call us today on +44 1449 674986 or email us at biogas@pisales.co.uk.

- OPTIMISE BIOGAS YIELD
- MINIMISE DOWNTIME
- SIMPLIFY PROCESSES
- MAXIMISE ROI

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