Analytical Industries Inc

MICHELL Instruments

Quality and safety in natural gas and petrochemical processing

Moisture, Hydrocarbon Dew Point, Oxygen, Hydrogen Sulphide

Companies of PST PROCESS SENSING TECHNOLOGIES

www.processsensing.com

nbn Austria GmbH

PROCESS SENSING TECHNOLOGIES (PST)

The PST group provides a comprehensive suite of instruments and analyzers for precision measurements in industrial process control, environmental monitoring natural gas and petrochemical processing. The PST Group has a global presence with multiple locations in Europe, Asia and the Americas and looks for more opportunities to continue its growth through investment into new markets.

Companies

Analytical Industries – Pomona, CA, USA
Michell Instruments – Ely, UK
Rotronic – Bassersdorf, Switzerland
LDetek – Quebec, CA
Dynament – Mansfield, UK

Market Leader

In oxygen sensors and gas analysis instrumentation, humidity and trace moisture instrumentation, impurities in gases analysis and flammable gas sensors.

Group Facts

10 Proprietary Sensing Technologies
14 Sales and Service Locations
6 Manufacturing Locations

Humidity | *Hydrocarbon Dew Point* | *Dew Point* | *Hydrogen Sulfide* | *Trace Moisture* | *Oxygen*

Process control: increasing efficiency, reducing costs, protecting process

Moisture and hydrocarbon dew point are key parameters for determining the quality of natural gas as well as avoiding damage and reducing maintenance on plant equipment from upstream through to downstream processes. Controlling levels of H_2S - a major contaminant in natural gas – protects equipment from corrosion damage both saving on maintenance costs and ensuring safety. In storage and transport, oxygen analysis provides an early warning of leaks and also ensures safety by avoiding explosive atmospheres.

Features

- Global support network of factory-trained engineers
- Custom-designed sampling and analysis packages
- Systems Engineering

Measurement Types

- Ceramic impedance moisture sensors for measurements in gases and hydrocarbon liquids
- Electro-galvanic oxygen and H_2S sensors
- TDLAS for moisture content in varying background compositions
- Latest generation Quartz Crystal Microbalance sensors for rapid trace moisture readings

Applications

- Gas quality measurements to ensure compliance with transmission pipeline tariff specifications
- Natural gas glycol dehydration, storage and custody transfer
- Monitoring recycle gases during catalytic processes to maximize productivity
- HDPE and LDPE process gases and liquids

Benefits

- Choice of certified explosion-proof or instrinsically safe measurement systems
- NEC/CEC Class 1 Division 1 approved
- ATEX/IECEx approved for Zone 1 and 2
- Systems compatible with aggressive samples such as sour natural gas

Liquidew EExd Installation

MICHELL INSTRUMENTS

Michell's range of analyzers for oil and gas processing are easy to install, with simple, low-maintenance, with global hazardous area approvals. A choice of measurement technologies ensures the best fit for application and budget.

OptiPeak TDL600

Using the latest techniques in tuneable diode laser absorption spectroscopy and Signal processing power, this high performance analyzer is specifically to measure moisture in natural gas.

- Operating range down to 1 ppm_V
- Sour gas compatible
- Factory ready for varying gas compositions
- IECEx, ATEX and $_CMET_{US}$ certified for EExd flameproof

Condumax II

Based on the fundamental Dark Spot™ technique, the Condumax II provides fully automatic measurements of hydrocarbon dew point to ensure natural gas quality.

- Fully automatic on-line analysis
- Objective repeatable measurements
- 0.5 °C hydrocarbon dew-point accuracy
- Self-cleaning
- No purge or cooling gas needed
- Optional water dew-point analysis
- IECEx, ATEX, $_CCSA_{US}$ and GOST Ex certifications

TDL 600 Dual Unit with Condumax II

QMA601

The advanced quartz crystal microbalance sensor in the QMA601 provides fast, reliable measurements of trace moisture from 0.1 to 2000 ppm_V.

- Accuracy of ±0.1 ppm_V at <1 ppm_V and 10% of reading from 1 to 2000 ppm_V
- Maintenance-free for 3 years
- Built-in verification of customer process gas
- IECEx, ATEX, TC-TR Ex certified for Exd flameproof, CSA_{US} certified for explosion proof

Liquidew EExd & I.S

Continuous measurement of trace moisture dissolved in non-polar liquids. Based on the ceramic moisture sensor and available in intrinsically safe or explosion proof versions.

- 0.001 ppm_W to saturation range capacity
- Pre-programmed and user-entered saturation concentration values
- Simple, cost-efficient operation and low maintenance
- Global hazardous area certifications

Promet EExd & I.S

Based on Michell's tried and tested ceramic moisture technology, Promet is a reliable, cost-effective analyzer for dew point and moisture measurements in high-pressure process gases and vaporised liquids Explosion-proof and intrinsically safe versions available.

- Protected against glycol or other liquid contaminants
- Range -120 to +30 °Cdp, 0.001 to 30,000 ppm_V
- Immune to chemical attack from H_2S, mercaptans and other sulphides

QMA601 Full sampling system

Liquidew EExd

Liquidew I.S

Promet EExd

Promet I.S

ANALYTICAL INDUSTRIES INC.

Analytical Industries Inc. provide a range of cost-effective and easy to use analyzers designed for measuring O_2 and H_2S in demanding process environments ensuring product quality, plant safety and equipment protection. With sensor life times of up to 24 months, maintenance is kept to a minimum. Modular sampling systems are available providing reliable measurement solutions.

Standard Features

- 4 or 5 standard measurement ranges
- Accuracy ‹ ±2% of selected range
- Sensitivity ‹ 0.5% of range
- XLT sensor for CO_2 backgrounds
- Modbus communications available
- UL or ATEX certified
- Typical sensor life up to 24 months
- Mains or 24 V DC powered

Portable O_2 Measurement

GPR-1200/7100

- GPR-1200 has measurement ranges of 0-10 ppm up to 1% O_2 (0-25% for cal.)
- Intergrated bypass valve to protect the sensor from air and dramatically reduce sampling times
- GPR-7100 has measurement ranges of 0-20 pm up to 0-2,000 pm
- Intergrated air pump and flow control for use with H_2S sensor
- Battery life will exceed 24 hours of operation with pump running

EXD Oxygen Analyzers

GPR-18/28 Series

Explosion-proof oxygen analyzers for petro-chemical industry processes containing hydrogen and other flammable gases.

- Stainless steel Exd enclosure
- Flame arrestors as standard
- Flow meter with needle valve
- GPR-18 has measurement ranges of 0-10 ppm up to 0-1 % O_2 (0-25% for cal.)
- GPR-18 has an isolation valve fitted to protect the sensor when not in use
- GPR-28 has measurement ranges of 0-1 up to 0-25% O_2

Process Analyzers

GPR-1800/2800/7500

- GPR-1800 has measurment ranges from 0-10 ppm up to 0-1 % O_2 (0-25% for cal.)
- Ideal where a low detection limit of 50 ppb O_2 is required
- The GPR-2800 has measurements ranges of 0-1 up to 0-25% O_2
- GPR-7500 has measurement ranges of 0-20 ppm up to 0-2,000 ppm H_2S
- Modular sample system available
- Liquid drain system available for removing entrained liquids

I.S. Oxygen Analyzer

GPR-1500

The GPR-1500 is an intrinsically safe trace loop powered oxygen analyzer.

- Measurement ranges of 0-10 ppm up to 0-1 % O_2 (0-25% for cal.)
- Range of sampling options available
- “Skinny panel” option is less than 180 mm wide for easy installation
- Analyzer and sampling systems weighing 4 to 8 kg

Companies of
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