$RPM^{\circ}VIEW^{\circ}$

A Revolutionary New Approach to Process Analysis

RPM®VIEW™analyzer is a Patented Raman Photometer designed for real-time concentration measurements and analysis of multiple analytes in either a liquid or gas phase process stream. With a compact footprint, the RPM VIEW can be configured to perform continuous analysis of up to eight components.

> UNITED STATES PATENT CHEMICAL ANALYZER FOR INDUSTRIAL PROCESS CONTROL



THE MOST ADVANCED PROCESS RAMAN ANALYZER AVAILABLE ANYWHERE IN THE WORLD

- Detection of "infrared invisibles" (eg. hydrogen, oxygen) in addition to infrared analytes (eg. hydrocarbons)
- Lower initial price and lifecycle costs versus CCD based full spectrum Raman analyzers
- Analysis not susceptible to small particulates or bubbles in liquid phase samples
- Optional fiber-coupling to sample cell for deployment in harsh sampling environments
- Incorporates powerful SpectraRTS software for flexible sample system control and communication to DCS
- Utilizes embedded processor does not require an external computer to operate
- Can be configured for use in general purpose or hazardous area environments



RPM[®]*VIEW*[™]

Engineering Innovation is Making a Difference



The RPM View connects with your process pipeline or vessel through a simple slip stream directly coupled to our unique interface cell. These high-sensitivity Raman cells can be configured for liquid or a gas phase applications. Optionally, the cell can be fiber optically coupled to the analyzer for temperature and pressure sensitive applications.

Raman photometry is simple. With the ability to determine concentrations that are directly proportional to peak shape, analysis is

achieved without the use of chemometrics or other complex statistical methods. The RPM View incorporates a filter wheel that allows analysis of up to eight process components. Multiple filters can be used to solve more complex applications for the

measurement of a single analyte. It also utilizes a

background filter to enhance ability to provide a stable measurement.



The RPM View quickly executes applications by providing analysis times in a 30-60 second window. Even more complex multicomponent applications can be achieved in times much shorter than other traditional analytical techniques.



The RPM View incorporates a rugged optical bench that provides remarkable performance stability. The dynamic laser is configurable in different wavelengths with exceptional uptime and reliability.

The RPM View was developed with lower cost integration and deployment requirements in mind. Capable of handling a wide range of environmental conditions and hazardous area classifications, the RPM View was designed to be used in three-sided shelters or even basic weather proof enclosures (WPEs). The other key integration advantage is that the RPM View does not require extensive sample conditioning systems. For some applications, a simple slip-stream or fast loop is adequate.



RPM[®]*VIEW*[™]

| RESULTS | CONFIGURE | PEAKS | | | | |
|----------|-----------|---------|--------|---------|-----------|--------|
| PEAKS | PEAK # | NAME | WHEEL# | FILTER# | CAL FLAG | ENABLE |
| SYSTEM | 1 | Peak 1 | 1 - | 1 - | X • | |
| DETECTOR | 2 | Peak 2 | 1 • | 2 • | OPEN | |
| LASER | 3 | Peak 3 | 1 - | 3 • | X | |
| INPUTS | 4 | Peak 4 | 1 • | 4 • | BLOCKED . | |
| | 5 | Peak 5 | 1 - | 5 - | × • | |
| | 6 | Peak 6 | 1 • | 6 • | OPEN . | |
| | 7 | Peak 7 | 1 - | 7 • | ¥ • | |
| | 8 | Peak 8 | 1 - | 8 - | BLOCKED . | |
| | 9 | Peak 9 | 1 • | 9 - | х • | |
| | 10 | Peak 10 | 1 - | 10 - | OPEN . | V |

Easy Set-Up & Configuration

| RESULTS | | | | | | |
|--------------|-------------------|--------|---------|-------|--------|---|
| SYSTEM | | | | | | |
| DETECTOR | TEM DIAGNOSTICS - | | | | | _ |
| LASER DATA | PARAMETER | MIN | RESULT | MAX | STATUS | |
| LASER ALARMS | +15V Power Supply | -1 | 15.075 | 15.25 | OK | |
| INPUTS | -15V Power Supply | -15-25 | -15.043 | 0 | OK | |
| | +5V Power Supply | -1 | 5.009 | 5.25 | OK | |
| | Ambient (*C) | -1 | 32.43 | 50 | OK | |
| | Optical Head (°C) | -1 | 28.14 | 30 | OK | |
| Sub | system: OK | | | | | |
| | | | | | | |

Extensive Real-Time Diagnostics

| Spectra RTS |
|----------------|
|----------------|

The RPM View utilizes AIT's powerful, yet easily configurable SpectraRTS process spectroscopy software. Utilizing an embedded processor, the software needs only an initial

configuration and is ready to operate. An external interface is not required to operate the analyzer during routine analysis. Operators and maintenance personnel have access to extensive diagnostics and require only minimal training to operate and maintain the analyzer.

| NALYSIS CONFIG | URE CONTROL | | | | | | |
|------------------|---------------|----------|-------------|------|----------|-----|--------|
| RESULTS | CANALYSIS RES | SULTS | | | | | |
| SYSTEM | COMP # | NAME | UOM | MIN | RESULT | MAX | STATUS |
| DETECTOR | 1 | MDEA | % | 0 | 3.108140 | 10 | OK |
| LASER DATA | 2 | H2S | % | 0 | 1.908338 | 5 | ОК |
| LASER ALARMS | 3 | H2S/MDEA | Ratio | 0 | 0.613980 | 100 | OK |
| INPUTS | 4 | | % | 0 | 0 | 100 | ОК |
| | 5 | | % | 0 | 0 | 100 | OK |
| | 6 | 2 | % | 0 | 0 | 100 | OK |
| | 7 | a. | % | 0 | 0 | 100 | ОК |
| | 8 | 2 | % | 0 | 0 | 100 | ОК |
| | 9 | | % | 0 | 0 | 100 | OK |
| | 10 | | % | 0 | 0 | 100 | ОК |
| ortniment Statur | ок | _ | Scanning Pe | ak 3 | | | Stor |

Analysis Results & Reporting

| One Technology for Liquid | and Gas Phase Applications | | | | |
|---|--|--|--|--|--|
| PARTIAL LISTING OF MEASUREMENTS | | | | | |
| LIQUID PHASE | GAS PHASE | | | | |
| H_2S and CO_2 in MDEA (or other amines) for natural gas absorbers | Biomass streams for H ₂ , CH ₄ , CO ₂ , O ₂ and CO | | | | |
| Aromatics in gasoline, diesel and component streams | H ₂ S and C1/C2s in sour gas | | | | |
| Benzene in gasoline, diesel and component streams | H ₂ in chlorine gas | | | | |
| Olefins in gasoline, diesel and component streams | CO ₂ in FCC regeneration | | | | |
| Para-xylene purification analysis | Propane in argon | | | | |
| Depropanizer streams in HF Alkylation | Oxygen in nitrogen | | | | |
| Deisobutanizer streams in HF Alkylation | Chlorine analysis in N ₂ or ambient air | | | | |
| Methanol in sea water | Chlorine in HCl & HCl in chlorine | | | | |
| Hydrocarbon percent level analysis in waste water | Methane, ethane, propane, butanes, pentanes in natural gas | | | | |

Life Is On



Specifications

RPM[®]*VIEW*[™]

| Photometer | | Utility Information | | | | |
|---|---|--|---|--|--|--|
| • Excitation: | Diode laser: 647 or 785 nm (application dependent) | • AC power: | Universal 110/240 Vac, 50/60 Hz, 300 VA | | | |
| Components:Up to eight analytes measuredMeasurement Time:< 30 seconds per analyte | | • Purge Air: | Pressure: 4.2 kg/cm2 (60 psig) Flow Rate (Max): 150 L/minute (5.3 scfm) | | | |
| Detection Limit | | Instrument Dimensions | | | | |
| Liquid Phase | < 200 ppm (application dependent) | Enclosure: | Width 51x Height 61x Depth 25cm (20x24x10in.) | | | |
| • Gas Phase | < 500 ppm @ STP (application dependent) | Weight: | 39 kg (85 lb) | | | |
| | | Ambient Environmental Conditions | | | | |
| • Process Flow Pipe* | e rtace Direct measurements in a fast flowing process (up to 25 liters per minute) | Temperature range: -20° to 49°C (-4 to 120°F) Optional vortex cooling required for ambient tempera above 35°C | | | | |
| • Liquid flow cell* | Slip stream process measurements | • Max. Relative Humidity (RH): 95%, non-condensing | | | | |
| • Gas cell* | Optimized for gas phase measurements using unique optics to maximize the raman process *All three process interfaces can | Hazardous Area Options NEC Class I, Division 1 and 2, Groups B, C and D ATEX Zone 1 and Zone 2 / IECEX Zone 1 | | | | |
| | operate up to 100°C | Compliance CE | | | | |
| Process Control Interfac | ce | <u>C</u> L | | | | |
| Modbus RTU / TCPOPC | | Applied Instrume cal technology so | nt Technologies (AIT) delivers process analyti- lutions to the leading companies of the world. | | | |
| Analog (optional) HAPT (optional) | | We design and m | nanufacture robust process development and | | | |
| Profibus (optional) | | on-line analyzers can also provide | for quantitative and qualitative analysis. AIT integrated turnkey solutions with the supply of | | | |
| User Interface LCD Display: | 5" color 800 x 480 TFT Results and diagnostic monitoring | sample interfaces shelters. These pr | s, sample conditioning systems, enclosures and oducts coupled with our unmatched customer | | | |
| • Ethernet: | GUI via web browser | service and appli | ications support provide substantial | | | |
| • Functions: | Results data Diagnostics | bottom line credits and quick pay back times. | | | | |

Applied Instrument Technologies

Alarms

Plant supervision

troubleshooting

Instrument set up / calibration

Remote Internet connectivity for external

by Schneider Electric

2121 Aviation Drive Upland CA 91786 • 909 204-3700 T • 909 204-3701 F • ait@schneider-electric.com • www.AlTanalyzers.com

AIT logo, Applied Instrument Technologies and RPM are registered trademarks of Applied Instrument Technologies, Inc. SpectraQuant, SpectraQuant, SpectraQ are trademarks of Applied Instrument Technologies, Inc. Windows is a registered trademark of Microsoft Corp. OPC is a registered trademark of OPC Foundation. Windows is a registered trademark of Microsoft Corp.

