Fast, Accurate, And Reliable Continuous Analysis Of Your Natural Gas Impurities

As sources of Natural gas become more diversified i.e. Shale Gas, LNG, and Bio-gas operators must be able to ensure the composition of gas delivered – and received – is of sufficient quality per contractual agreements and pipeline quality and safety requirements. The increasing variability of the gas quality means that there is a greater need to measure the gas contaminants fast and accurately, often in remote locations with no on-site operators or maintenance personnel.

Cascade QCL/TDL Solution
The Rosemount CT5800 QCL/TDL analyzer provides rapid, reliable, and high accurate measurement of the gas sample stream to provide real time data of natural gas impurities. The unique design provides highly accurate measurement of very low concentrations of multiple impurities in the natural gas. The device can have up to six Quantum Cascade Lasers or Tunable Diode Lasers to measure multiple combinations of your natural gas impurities i.e. $\text{H}_2\text{O}$, $\text{H}_2\text{S}$, and $\text{CO}_2$ simultaneously in a single analyzer.

Applications
• Offshore/Onshore Production Sites
• Gas Processing
• Custody Transfer Points
• Storage Facilities
• Distribution Network

Features and Benefits
• Rapid, indirect, and interference-free surveillance and detection of impurities such as $\text{H}_2\text{O}$, $\text{H}_2\text{S}$, and $\text{CO}_2$ in the natural gas stream
• Complete sample cell refresh every 15 seconds, based on typical 5 liters per minute flowrate.
• Unmatched sensitivity detects trace impurities with sub ppm detection limits
• Inherently stable spectroscopic technique means outstanding reliability and stability in the most extreme of conditions
• Field mountable eliminating the need for expensive analyzer shelters and minimizes sample transport line
• No consumables and no calibration reduces cost and simplifies maintenance and upgrades
• Interchangeable modular configuration for up to six lasers
• Flameproof enclosure certified for hazardous areas
• Emerson sample handling expertise ensures the gas sample is representative and delivered timely to the analyzer
LASER CHIRP TECHNIQUE – MULTIPLE MEASUREMENTS IN A SINGLE SYSTEM
Quantum Cascade Lasers are fabricated to emit light at a desired wavelength and operated using a laser chirp technique. The detector single is converted into a spectrum and the concentration of analytes is calculated.

Conversion into absorbance using Beer-Lambert law returns absolute measurements with no need for calibration

Lasers are chirped continuously scanning a spectrum of 1-3 wavenumbers in < 1 us

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