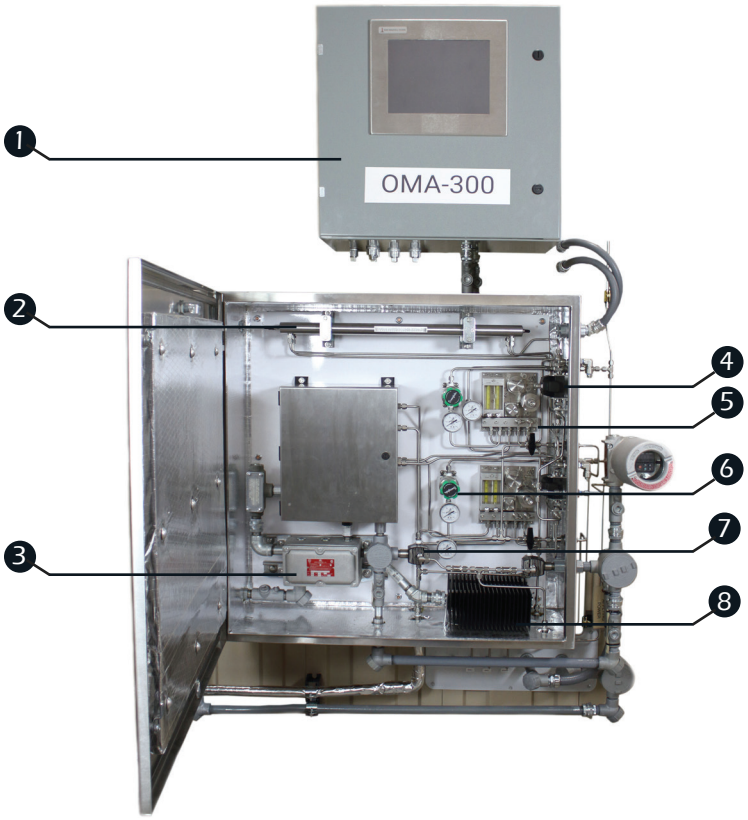
BTEX OMA-300

Measuring Aromatic Hydrocarbons

Mustang Sampling®



Item Number	Description
1	BTEX Analyzer Controller
2	Measurement Cell
3	PID Temperature Controller
4	Zero Gas Valve
5	Mustang® Modular Sample Control Panel (MMSCP®)
6	Back Pressure Regulator
7	Back Flush Valve
8	Self-Limiting Block Heater

APPLICATION

The composition of pipeline natural gas varies widely by source but typically reflects a mixture of simple hydrocarbons, some inert gases, and often trace amounts of aromatic hydrocarbons. Benzene, toluene, ethylbenzene, and xylene(s) are common aromatics, collectively known at "BTEX" components, whose concentrations may be measured independently (speciation) or in total. The measurement of these aromatics may be necessary to meet compliance, safety, or tariff limits.

Fortunately, aromatic hydrocarbons have strong absorbance in the ultraviolet range and can be easily measured through spectroscopic methods. The OMA-300 system takes the same principle and brings it to the field for continuous, fast-response analysis on site. Using a dispersive UV-Vis spectrophotometer, the OMA continuously measures absorbance at each integer wavelength in the 200-300 nm range — the spectral region in which common aromatic hydrocarbons have very prominent, distinct absorbance curves. This allows the OMA-300 to easily differentiate the absorbance of each compound from the total sample absorbance.

FEATURES

- Dispersive UV-Vis absorbance spectrophotometer
- Ultra-safe fiber optic design with dedicated sample flow cell
- Wide dynamic range due to photodiode array
- 316 SS NEMA 4X Enclosure
- Measurement Cell

BENEFITS

- Measurement cell located independent from power
- Continuously measures aromatic hydrocarbon concentrations
- No toxic/corrosive sample fluid in analyzer enclosure
- No error due to absorbance saturation
- Solid state device with no moving parts
- Low maintenance
- Additional software upgrades available for additional measured chemicals (up to 4 total)

PRODUCT SPECIFICATIONS

Measurement Principle	Dispersive UV-Vis absorbance spectrophotometry
Detector	nova II™ Spectrophotometer
	Data sheet: http://aai.solutions/documents/AA_DS201A_novaII.pdf
Spectral Range	200-800 nm (UV-Vis model)
Light Source	Standard: pulsed xenon lamp with average 5 year lifespan (dependent on application)
Fiber Optic Cables	Standard: 600 µm core 1.8 meter fiber optic cables (qty = 2)
	Data sheet: http://aai.solutions/documents/AA_DS206A_FiberOptics.pdf
Sample Medium	Gas or liquid
Sample Introduction	Standard: stainless steel 316L flow cell with application-dependent path length
	Options in data sheet: http://aai.solutions/documents/AA_DS207X_FlowCell_All.pdf
Measuring Parameters	
Photometric Accuracy	±0.004 AU at 220 nm
Response Time	1-5 seconds
Sensitivity	±0.1 % full scale
Sample Conditions	
Sample Temperature	Standard: -20 to 70 °C (-4 to 158 °F)
Sample Pressure (max)	Using standard flow cell: 206 bar (3000 psi)
Ambient Conditions	
Analyzer Environment	Indoor/Outdoor (no shelter required)
Ambient Temperature	Standard: 0 to 35 °C (32 to 95 °F)
	Optional: -20 to 55 °C (-4 to 131 °F)
	To avoid radiational heating, use of a sunshade is recommended for systems installed in direct sunlight.
Utility Requirements	
Electrical Requirements	85 to 264 VAC 47 to 63 Hz
Power Consumption	45 watts
Outputs/Communication	
Outputs	1x galvanically isolated 4-20mA analog output per measured analyte
	2x digital outputs for fault and SCS control
	Optional: Modbus TCP/IP; RS-232; RS-485; HART; more
I/O Electronics	Voltage/Current Interface Module (i.e. I/O Board)
	Data sheet: http://aai.solutions/documents/AA_DS205A_VCIM.pdf
Performance Specifications	
Accuracy	Custom measurement ranges available; example ranges below. Accuracy specifications represent gas sample analysis validated with span gas.
Benzene (C_6H_6)	0-50 ppm: ±2 ppm 0-100 ppm: ±1% full scale 0-10,000 ppm: ±1% full scale
Toluene (CH_3)	0-50 ppm: ±2 ppm 0-100 ppm: ±1% full scale 0-10,000 ppm: ±1% full scale
Xylene (C_8H_{10})	0-50 ppm: ±2 ppm 0-100 ppm: ±1% full scale 0-10,000 ppm: ±1% full scale

Analytically Accurate®
TECHNOLOGY

About Mustang Sampling

Mustang Sampling, LLC is the innovator of Analytically Accurate® solutions within sample conditioning systems. We provide custom solutions of products and services globally to the Natural Gas, Natural Gas Liquids (NGL), and Liquefied Natural Gas (LNG) industries. Mustang Sampling continues to pioneer integrated control systems, allowing our customers to maintain phase stability from sample extraction at the source through sample analysis. Our products are continuously improved and subjected to the highest quality standards which provides our customers with the best sample conditioning solutions.

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