

Precisive® Gas Analyzer

Hydrocarbon Gas Composition Analyzer



The Precisive® Gas Analyzer is a real-time gas analyzer based on MKS' unique Tunable Filter Spectroscopy (TFS™) platform. The Precisive suite of products are calibrated for the measurement of a wide range of gases across multiple process industries. The real-time, continuous measurement capability provides immediate analysis ensuring control of critical process parameters.

Product Features

- Analysis in seconds
 - Real-time, continuous measurement
- No carrier gas or fuel gas requirements
 - Low operational costs and infrastructure requirements
 - Suitable for small-scale plants and terminals
 - Ideal for remote installations
- Robust calibration
 - Reduced maintenance and operational costs
- Flow-through sensor design
 - Minimized potential sampling and phase change issues
- Compact, outdoor rated, low power
 - Well suited for transportable spot check applications
 - NEMA4X, IP66
 - Engineered to withstand vibration and shock



Key Benefits

- Fuel analysis for engine control (gas turbines, internal combustion engines, fuel cell power plants, etc.)
- Methane number monitoring for internal combustion engine control
- Wobbe Index metering for combustion control applications
- Check metering, blend monitoring, and BTU monitoring
- Custody transfer and fiscal metering
- Biomethane injection control
- Acid/sour gas, syngas composition, and Flare BTU monitoring
- Natural gas fractionation/liquefaction
- Ethylene production

Description	Natural Gas (Hexane Channel)	Natural Gas Engine & Turbine	Natural Gas, Engine & Turbine, Metering	Acid & Sour Gas
Recipe*	242B	282	283	253
CH ₄	50-100%	50-100%	50-100%	0-100%
C ₂ H ₆	0-20%	0-20%	0-20%	0-25%
C ₃ H ₈	0-10%	0-10%	0-10%	0-25%
C4+		0-10%		
iC ₄ H ₁₀	0-5%		0-5%	0-10%
nC ₄ H ₁₀	0-5%			
nC ₄ + nC ₅ + nC ₆ (as nC ₄)			0-5%	
nC ₄ + nC ₅ (as nC ₄)				0-10%
iC ₅ + neoC ₅ (as iC ₅)	0-2%		0-2%	0-10%
n-Hexane	0-2%			0-5%
H ₂ S				0-50%
CO ₂	0-20%	0-20%	0-20%	0-50%
Balance	Yes	Yes	Yes	Yes
High Heating Value (HHV)**	Yes	Yes	Yes	Yes
Low Heating Value (LHV)**	Yes	Yes	Yes	
Specific Gravity	Yes	Yes	Yes	
Wobbe Index (WI) (per ISO 6976: 2016)	Yes	Yes	Yes	Yes
Methane Number		Available	Available	
Repeatability (1-sigma, 5 sec measurement time)	- nC₆, nC₄+nC₅ Channels: <0.1 mol%; All others: <0.05% - HHV, LHV & WI: <0.3% of Reading or <0.15 MJ/m³ (greater of) - Specific Gravity: <0.06% of Reading	- Gas Channels: <0.05 mol% - HHV, LHV & WI: <0.2% of Reading or <0.1 MJ/m³ (greater of) - Specific Gravity: <0.05% of Reading	- Gas Channels: <0.05 mol% - HHV, LHV & WI: <0.2% of Reading or <0.1 MJ/m³ (greater of) - Specific Gravity: <0.05% of Reading	- Gas Channels: <0.1 mol% - HHV & WI: <0.3% of Reading or <0.15 MJ/m³ (greater of) - Specific Gravity: <0.06% of Reading
Estimated Accuracy (mol% or % of Reading, or % of Full Scale, as indicated) (Typical values, with as-received instrument i.e., without span)	- Gas Channels: ±0.25 mol% or ±0.5% of Full Scale (greater of) - HHV, LHV & WI: ±0.7% of Reading or ±0.25 MJ/m³ (greater of) - Specific Gravity: ±0.5% of Reading	- Gas Channels: ±0.2 mol% or ±0.5% of Full Scale (greater of) - HHV, LHV & WI: ±0.5% of Reading or ±0.2 MJ/m³ (greater of) - Specific Gravity: ±0.5% of Reading	- Gas Channels: ±0.2 mol% or ±0.5% of Full Scale (greater of) - HHV, LHV & WI: ±0.5% of Reading or ±0.2 MJ/m³ (greater of) - Specific Gravity: ±0.5% of Reading	- Gas Channels: ±0.3 mol% or ±1% of Full Scale or ±3% of Reading (greater of) - HHV & WI: ±0.7% of Reading or ±0.25 MJ/m³ (greater of) - Specific Gravity: ±0.5% of Reading

*Other configurations are available. Contact MKS for options.

**Combustion reference/metering reference temperatures: 25°C/0°C

Description	Olefins/Flare	Liquefied Petroleum Gas	Liquefied Natural Gas	SynGas
Recipe*	155	165	156	271
CH ₄	0-100%		0-100%	0-25%
C ₂ H ₆	0-25%	0-25%	0-100%	0-25%
C ₃ H ₈	0-25%	0-100%	0-100%	
iC ₄ H ₁₀	0-50%	0-100%	0-10%	
nC ₄ H ₁₀	0-50%			
nC ₄ + nC ₅ + nC ₆ (as nC ₄)		0-100%	0-10%	
C ₃ H ₆	0-100%	0-10%		
C ₂ H ₄	0-100%	0-10%		0-20%
C ₂ H ₂	0-30%			0-5%
iC ₅ + neoC ₅ (as iC ₅)		0-10%	0-10%	
iso-C ₅ H ₁₂	0-10%			
1-Butene	0-20%			
cis-2-Butene	0-20%			
trans-2-Butene	0-20%			
isobutylene	0-20%			
1,3-Butadiene	0-20%			
CO				0-50%
CO ₂				0-50%
Balance	Yes	Yes	Yes	Yes
High Heating Value (HHV)**	Yes	Yes	Yes	Yes
Low Heating Value (LHV)**	Yes	Yes	Yes	Yes
Specific Gravity	Yes	Yes	Yes	Yes
Wobbe Index (WI) (per ISO 6976: 2016)	Yes	Yes	Yes	Yes
Methane Number			Available	
Repeatability (1-sigma, 5 sec measurement time)	- Gas Channels: <0.1 mol% - HHV, LHV & WI: <0.4% of Reading or <0.2 MJ/m³ (greater of) - Specific Gravity: <0.05% of Reading	- Gas Channels: <0.05 mol% - HHV, LHV & WI: <0.2% of Reading or <0.1 MJ/m³ (greater of) - Specific Gravity: <0.05% of Reading	- Gas Channels: <0.05 mol% - HHV, LHV & WI: <0.2% of Reading or <0.1 MJ/m³ (greater of) - Specific Gravity: <0.05% of Reading	- Gas Channels: <0.15 mol% - HHV, LHV & WI: <0.4% of Reading or <0.2 MJ/m³ (greater of) - Specific Gravity: <0.1% of Reading
Estimated Accuracy (mol% or % of Reading, or % of Full Scale, as indicated) (Typical values, with as-received instrument i.e., without span)	- Gas Channels: ±0.5 mol% or ±1% of Full Scale or ±3% of Reading (greater of) - HHV, LHV & WI: ±1% of Reading or ±0.4 MJ/m³ (greater of) - Specific Gravity: ±0.5% of Reading	- Gas Channels: ±0.2 mol% or ±1% of Full Scale or ±2% of Reading (greater of) - HHV, LHV & WI: ±0.5% of Reading or ±0.2 MJ/m³ (greater of) - Specific Gravity: ±0.5% of Reading	- Gas Channels: ±0.2 mol% or ±1% of Full Scale (greater of) - HHV, LHV & WI: ±0.5% of Reading or ±0.2 MJ/m³ (greater of) - Specific Gravity: ±0.5% of Reading	- Hydrocarbon Channels: ±0.2 mol % or ±3% of Reading (greater of); CO and CO₂ channels 0.5 mol% or ±3% of Reading (greater of) - HHV, LHV & WI: ±1% of Reading or ±0.4 MJ/m³ (greater of) - Specific Gravity: ±0.5% of Reading

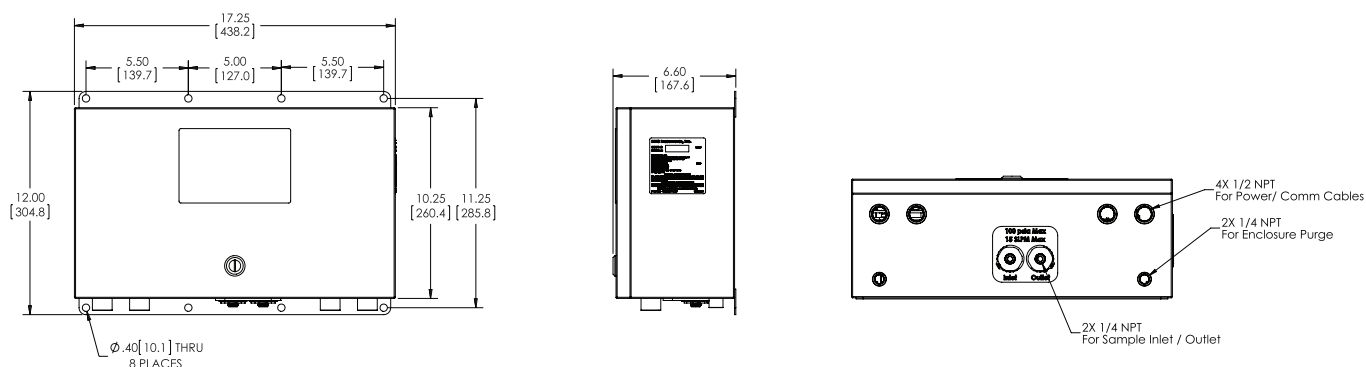
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Specifications

Zero Drift	Not to exceed 0.2% per month; Maximum of 0.5% throughout life of bulb (~36 months)	
Sample Pressure	0.1 – 5 psig	
Flow Rate	0.1 – 2 L/min (Contact MKS for higher or custom ranges)	
Sample Cell	0.35m pathlength, 100mL volume	
Weight	12kg (25.8lbs)	
Power Requirement	24 VDC or 100 - 240 VAC	
Operating Temperature	• Tamb (AC): -20°C to +48°C • Tamb (DC): -20°C to +50°C	
Data Output/Communication	Modbus over Ethernet or RS485	
Enclosure Dimensions	17.25" (438 mm) width, 6.60" (168 mm) depth, 11.25" (286 mm) height	
Compliance	• EU27: CE • United Kingdom: UKCA • US/Canada: CSA • South Korea: KC	
Hazardous Area Certifications	• Class 1, Division 2, Group A, B, C and D, T4 • Class 1, Zone 2, AEx nA nC IIC T4 Gc • Ex nA nC nL IIC T4 Gc • Ex ec nC IIC T4 Gc — IECEx CSA 14.0049 — Sira 13ATEX4316	

Please contact your local MKS office for price and availability information.



Dimensional Drawing —

Note: Unless otherwise specified, dimensions are nominal values in inches (millimeters referenced).