



**Process &**

**Environmental  
Analysis Solutions**

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# Precise<sup>®</sup> 5

## GAS COMPOSITION, CALORIFIC VALUE, WOBBE INDEX, AND PHYSICAL PROPERTY ANALYZER

The Precise<sup>®</sup> 5 Analyzer is a real-time gas analyzer based on MKS' unique Tunable Filter Spectroscopy (TFST<sup>™</sup>) platform. The system can be calibrated for the measurement of various C1 through C6 hydrocarbons, CO<sub>2</sub>, and high level H<sub>2</sub>S. Calculated channels provide values for calorific value, specific gravity, density, higher heating value (HHV) and lower heating value (LHV). Other calculated values are available upon request.

### Features & Benefits

- 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, can be engine or manifold mounted
  - Engineered to withstand vibration and shock
- Hazardous Area Certified
  - ATEX Zone 2
  - Class 1 Div 2

### Applications

- Custody Transfer and Fiscal Metering
- Fuel analysis for engine control (gas turbines, internal combustion engines, fuel cell power plants, etc.)
- Calorific value measurement for fiscal metering of pipeline gases
- Wobbe Index metering for combustion control applications
- Check metering, blend monitoring, fast-response BTU monitoring
- Biomethane injection control
- Fast-response alternative to traditional calorimeter and/or gas chromatograph type instruments
- Acid/sour gas monitoring
- Syn-gas composition monitoring
- Natural gas fractionation plants
- Ethylene production
- Flare BTU monitoring



# Specifications and Ordering Information

Recipe	282	242B	253	213	271	155	167
Description	Natural Gas Engine & Turbine	Natural Gas	Acid & Sour Gas	Natural Gas Fractionation	Syn-Gas	Olefins & Butadiene	Hydrocarbon Processing (depropanizer)
CH <sub>4</sub>	60-100%	50-100%	0-100%	0-100%	0-25%	0-100%	0-10%
C <sub>2</sub> H <sub>6</sub>	0-20%	0-20%	0-25%	0-100%	0-25%	0-25%	0-10%
C <sub>3</sub> H <sub>8</sub>	0-10%	0-10%	0-25%	0-100%		0-25%	0-100%
C4+	0-10%						
iC <sub>4</sub> H <sub>10</sub>		0-5%	0-10%	0-10%		0-50%	0-10%
nC <sub>4</sub> H <sub>10</sub>		0-5%				0-50%	0-10%
nC4 + nC5			0-10%	0-100%			
C <sub>3</sub> H <sub>6</sub>				0-10%		0-100%	0-100%
C <sub>2</sub> H <sub>4</sub>				0-10%	0-20%	0-100%	
C <sub>2</sub> H <sub>2</sub>					0-5%	0-30%	
iC5 + neoC5			0-10%				
Total C5		0-2%					
iso-C <sub>5</sub> H <sub>12</sub>						0-10%	
1-Butene						0-20%	
cis-2-Butene						0-20%	
trans-2-Butene						0-20%	
Isobutylene						0-20%	
1,3-Butadiene						0-20%	
n-Hexane		0-2%	0-5%				
H <sub>2</sub> S			0-50%				
CO					0-50%		
CO <sub>2</sub>	0-20%	0-20%	0-50%	0-100%	0-50%		
Balance	Yes		Yes	Yes	Yes	Yes	Yes
Density	Yes						
HHV (per ISO 6976:2016)*	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LHV (per ISO 6976:2016)*	Yes						
Specific Gravity*	Yes						
Wobbe (per ISO 6976:2016)*	Yes	Yes	Yes	Yes	Yes		

\* Other gas combinations available upon request. Contact MKS for higher or custom ranges.

<b>Zero Drift</b>	Not to exceed 0.2% per month; Maximum of 0.5% throughout life of bulb (~ 18 months)
<b>Sample Pressure*</b>	0.1 – 5 psig * Contact MKS for higher or custom ranges
<b>Flow Rate*</b>	0.1 – 2 L/min * Contact MKS for higher or custom ranges
<b>Sample Cell</b>	0.35m pathlength, 100mL volume
<b>Weight</b>	12kg (25.8lbs)
<b>Power Requirement</b>	24 VDC or 100 - 240 VAC
<b>Operating Temperature</b>	-20°C to 48°C (ATEX)
<b>Data Output/Communication</b>	Modbus over Ethernet or RS485
<b>Enclosure Dimensions</b>	17.25" (438.2 mm) width, 6.60" (167.6 mm) depth, 11.25" (285.8 mm) height
<b>Certifications</b>	CSA Class 1Div2, Ex nAnCIICT4Gc Groups A/B/C/D, IECEX T4. ATEX Zone 2,



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



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