



Process &

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Environmental
Analysis Solutions

Precise[®] 5-282

NATURAL GAS CALORIFIC VALUE/WOBBE INDEX MONITOR

The Precise[®] 5-282 is designed specifically for on-line quality monitoring of natural gas products. It provides fast and accurate measurement of Calorific Value, Wobbe Index, Specific Gravity, and Gas Density along with compositional information, including CO₂ in a single, compact analyzer. The analyzer is based on MKS' unique Tunable Filter Spectroscopy (TFS™) platform which directly measures the component concentrations in the gas. Applications include fuel quality analysis for gas turbines and internal combustion engines, pipeline gas fiscal metering and natural gas quality measurement at LNG terminals.

Features & Benefits

- Analysis in seconds
 - Real-time, continuous measurement
 - Fast response engine and turbine control
- 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

Applications

- Natural gas 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 meter 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



Specifications

Measurement Ranges*

Higher Heating Value (HHV)**	Per ISO 6976:2016	Ethane	0 – 20% (C2)
Lower Heating Value (LHV)**	Per ISO 6976:2016	Propane	0 – 10% (C3)
Wobbe Index (WI)**	Per ISO 6976:2016	C4+	0 – 10% (C4+ lumped)
Density	Per ISO 6976:2016	Carbon Dioxide	0 – 20% (CO ₂)
Specific Gravity (SG)	Per ISO 6976:2016	Calculated Balance	N ₂ (assumed for CV, WI, Density, and Specific Gravity calculations)
Methane	50 – 100% (C1)		

* Contact MKS for higher or custom ranges

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

Precision/Repeatability

Hydrocarbon Channels	±0.05 mol% (absolute)
CO ₂	±0.05 mol% (absolute)
HHV/LHV and WI Computation	±0.2% (relative of reading) or ±0.1 MJ/m ³ (greater of)
Specific Gravity	±0.05% (relative of reading)

Linearity Error

< 0.2% (relative of reading) or 0.1% (absolute), whichever is greater

Zero Drift

Not to exceed 0.2% per month
Maximum of 0.5% throughout life of bulb (~18 months)

Sample Pressure*

0.1 – 5 psig * Contact MKS for higher or custom ranges

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

-20°C to 48°C (ATEX)

Data Output/Communication

Modbus over Ethernet or RS485

Enclosure Dimensions

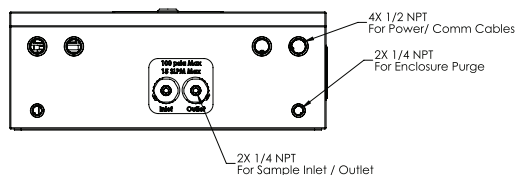
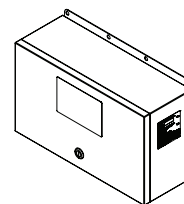
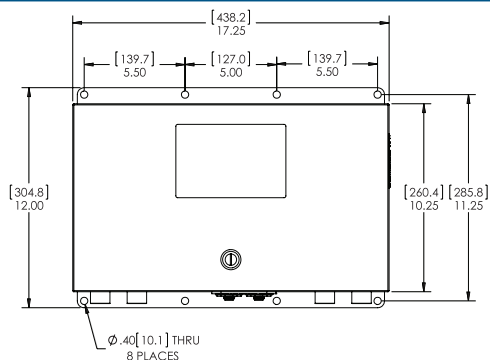
17.25" (438.2 mm) width, 6.60" (167.6 mm) depth, 11.25" (285.8 mm) height

Certifications

CSA Class 1Div2,
Groups A/B/C/D,
T4. ATEX Zone 2,
Ex nAnCICT4Gc
IECEX



II 3G
Ex nA nC IIC T4 Gc
Ta = -20°C to +48°C



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