

Precise® 5-165

LPG Analyzer



The Precise 5-165 model is a real-time hydrocarbon gas analyzer calibrated for on-line LPG (liquefied petroleum gas) composition monitoring and heating value analysis. This package is optimized for gas-phase LPG product analysis containing C2 – C5 alkane gases as well as ethylene and propylene.

The MKS Precise® product platform of innovative optical analyzers based on Tunable Filter Spectroscopy (TFS™) provides real-time gas analysis in the natural gas and hydrocarbon processing industries, including refineries, hydrocarbon processing plants, gas-to-power machines, biogas processes and fuel gas transportation and metering. Precise TFS can be utilized from UV (Ultra-Violet) through IR (Infra-Red) spectral regions.

Precise optical sensors are the first widely deployed hydrocarbon composition monitors to feature real-time unattended analytics with hydrocarbon speciation capability equivalent to traditional Gas Chromatography (GC) instruments yet, with much lower cost of ownership.

Product Features

- Analysis in seconds
 - Continuous measurement instead of batch handling
 - Quick spot check measurement
 - Minimized sampling issues
 - Real-time feedback (seconds, not minutes)
- No re-calibration, no carrier gas requirements, no cleaning and no columns
 - Low operational costs
 - Well suited for loading and unloading measurements
 - Fast payback and increased instrument cycle time
- Flow-through sensor design
 - No sensitivity to pressure and flow variations
 - Minimized potential sampling issues
- Small footprint, outdoor rated
 - Well suited for transportable spot check applications
 - Process control to DCS or portable spot-check device
 - NEMA4X, IP66 rated with real-time Modbus output



Applications

- LPG fast-response distillation measurement
- Spot check measurement / custody transfer given the wide composition variation of LPG
- Accurate and reproducible results in under 5 seconds
- Strong linearity throughout the range, robust LPG composition analyzer
- Ideal fast-response alternative to traditional gas chromatograph type instruments

Specifications

Measurement Ranges*

Ethane	0 – 25% (C2)
Propane	0 – 100% (C3)
iso-Butane	0 – 100% (iC4)
n-Butane and n-Pentane	0 – 100% (nC4 and nC5)
Ethylene	0 to 10%
Propylene	0 to 10%
C5 (lumped)	0 – 10% (neoC5 and iC5)
Calculated Balance	H ₂ (Hydrogen), O ₂ (Oxygen), N ₂ (Nitrogen)
Calorific Value	CV Computed as per ISO 6976:1995
Wobbe Index	WI Computed as per ISO 6976:1995

Precision / Repeatability

Hydrocarbon Channels	< ±0.1% (absolute)
CV and WI Computation	< ±0.1% (relative of reading)

Update Rate 5 seconds (default), software selectable from 1 – 120 seconds

Zero Drift Not to exceed 0.2% per month on each hydrocarbon channel

Sample Pressure* 0.1 – 2 psig

Flow Rate* 0.1 – 1 L/min

Sample Cell 0.35m pathlength, 100mL volume

Weight 12kg (25.8lbs)

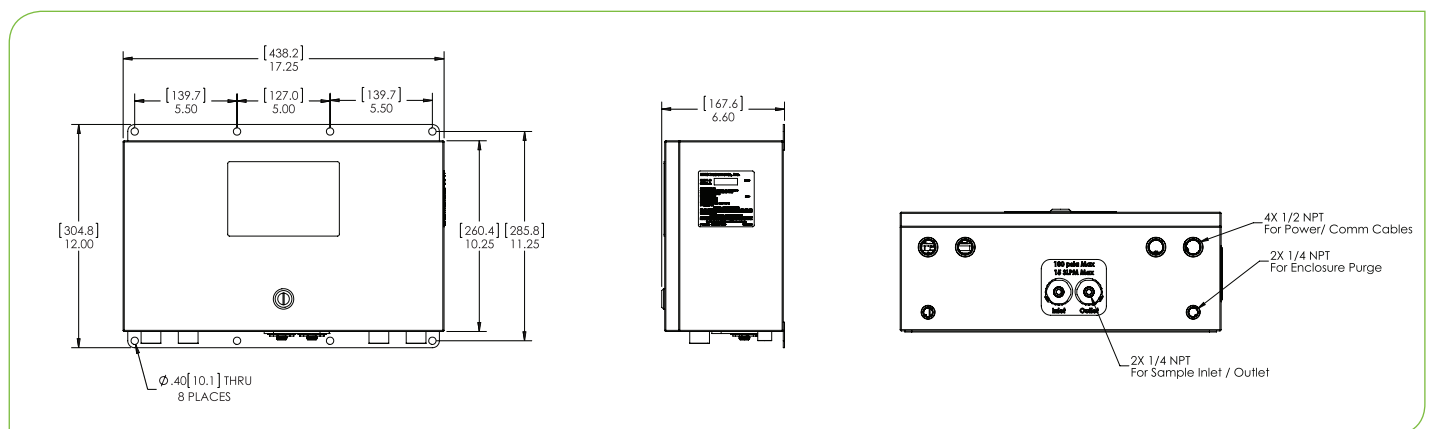
Power Requirement 24 VDC or 100 - 240 VAC

Operating Temperature -20°C to 48°C (ATEX)

Data Output/Communication Modbus over Ethernet or RS485

Certifications CSA Class 1Div2, Groups A/B/C/D, T4. ATEX Zone 2, Ex nAnCIICT4Gc, IECEx

* Contact MKS for higher or custom ranges



Dimensional Drawing

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



www.MKSINST.com

+1-978-645-5500 | +1-800-227-8766

Precise 5-165_02/19
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