# AccuChrome™ Gas Chromatograph (GC)

Btu, $H_2$ & C9 - C12 for Total Measurement Certainty

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APPLIED SCIENCES

## The Only GC Analyzer That Becomes MORE Accurate When Monitoring Heavier Hydrocarbon Samples

### Extended Analysis

- C9 – C12 Hydrocarbon Measurement
- ≤ 50% Hydrogen

### Hazardous Area Certified

- Class I Division 2 and Division 1
- ATEX / IECEx Zone 1

### Low Maintenance

- Valves rated for 1,000,000 Injections
- Quick & Easy Excursion Recovery

### Rapid Response

- 4 Minute Typical Analysis Sequence
- Fast and Sensitive NEMS Detector

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## AccuChrome ™ GC Introduction

AccuChrome™ is a process analyzer that measures Btu and hydrocarbons in gas-phase samples. AccuChrome™ helps natural gas, refinery, and other industrial operators meet gas quality requirements and optimize process control.

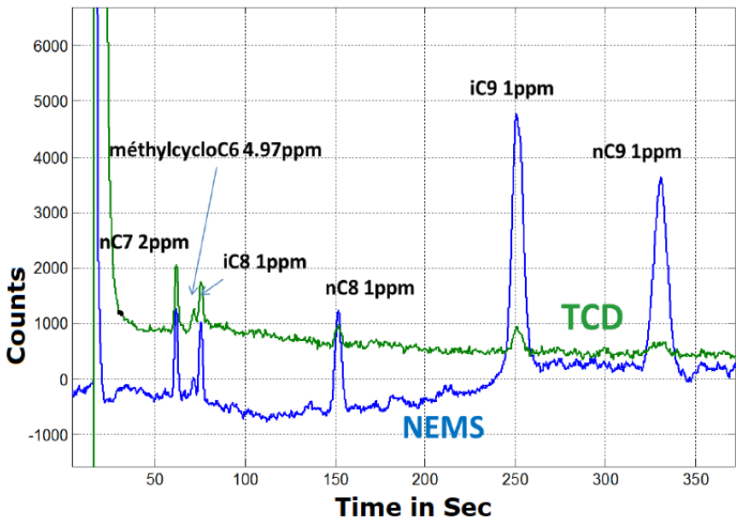
AccuChrome™ uses thermal conductivity detection (TCD) to measure most gas compounds. Monitoring changes in electrical resistance allow AccuChrome™ to calculate the concentration of each parameter.

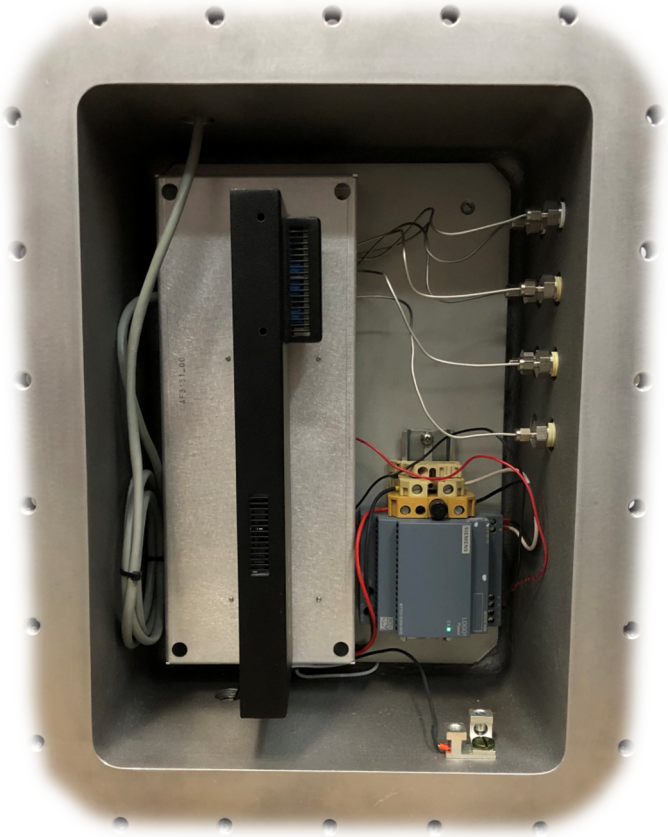
AccuChrome™ is a 3rd-generation GC backed by Galvanic's 40 years of field-proven experience supporting gas processing industries.


# New NEMS Method Offers Speed and Sensitivity

## Nano-Electromechanical Sensor (NEMS)

When measuring hydrocarbons heavier than C7, AccuChrome™ uses a NEMS detector. NEMS ironically becomes more sensitive for heavier samples and offers 1 ppm sensitivity C7 to C12. The NEMS detector is used side-by-side with the standard TCD, offering an unparalleled package for extended natural gas analysis.



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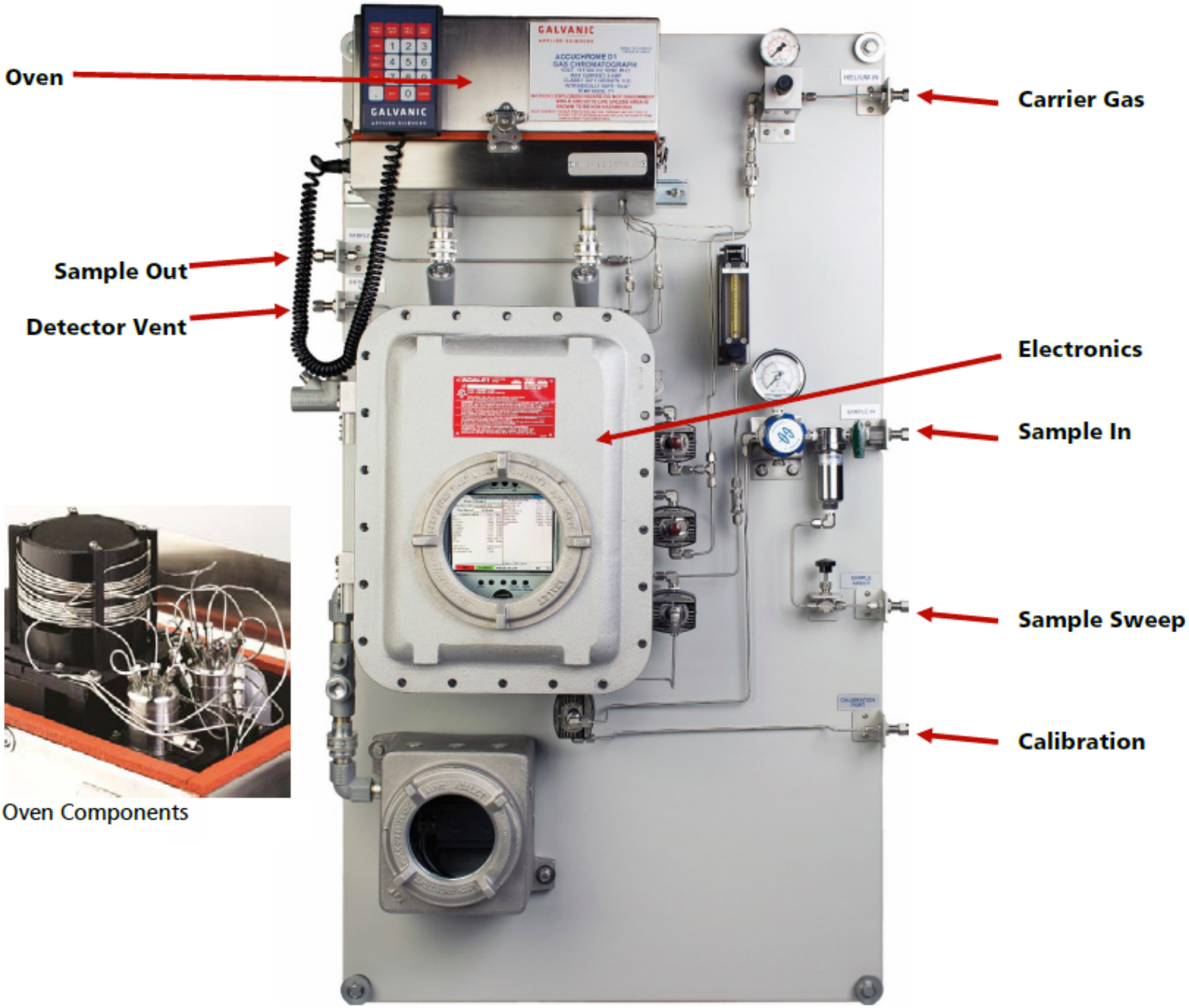
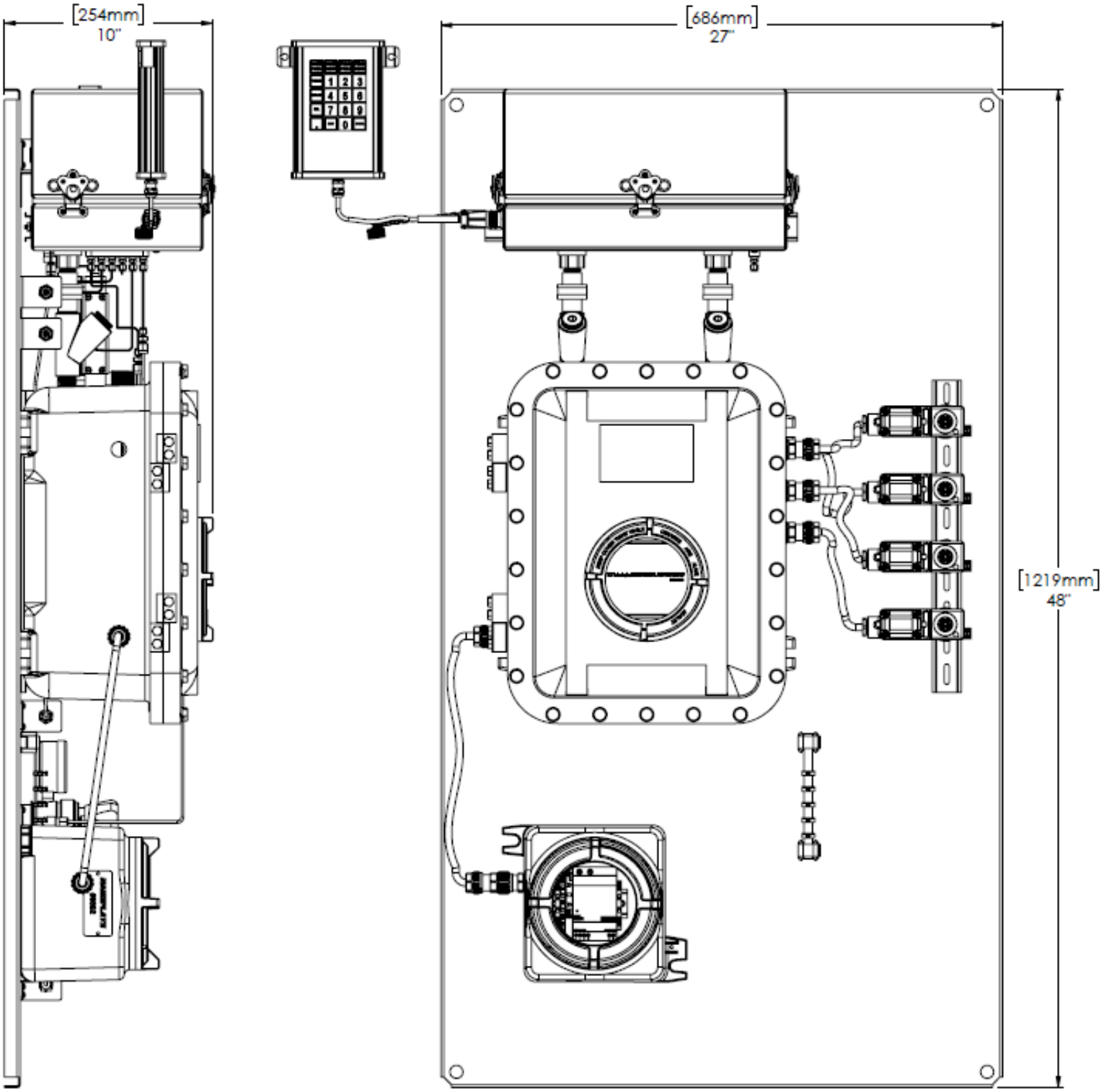


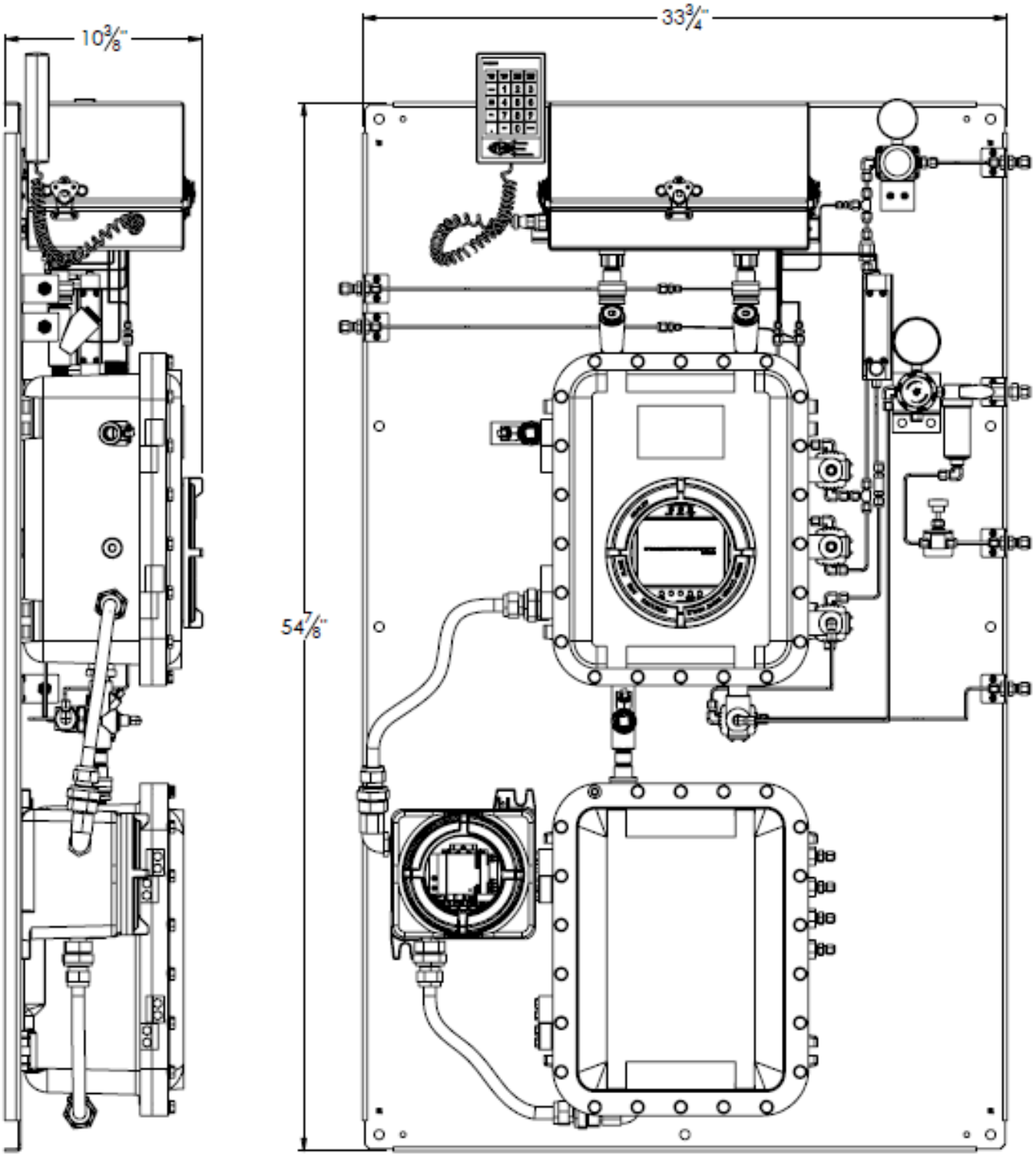



Oven Components

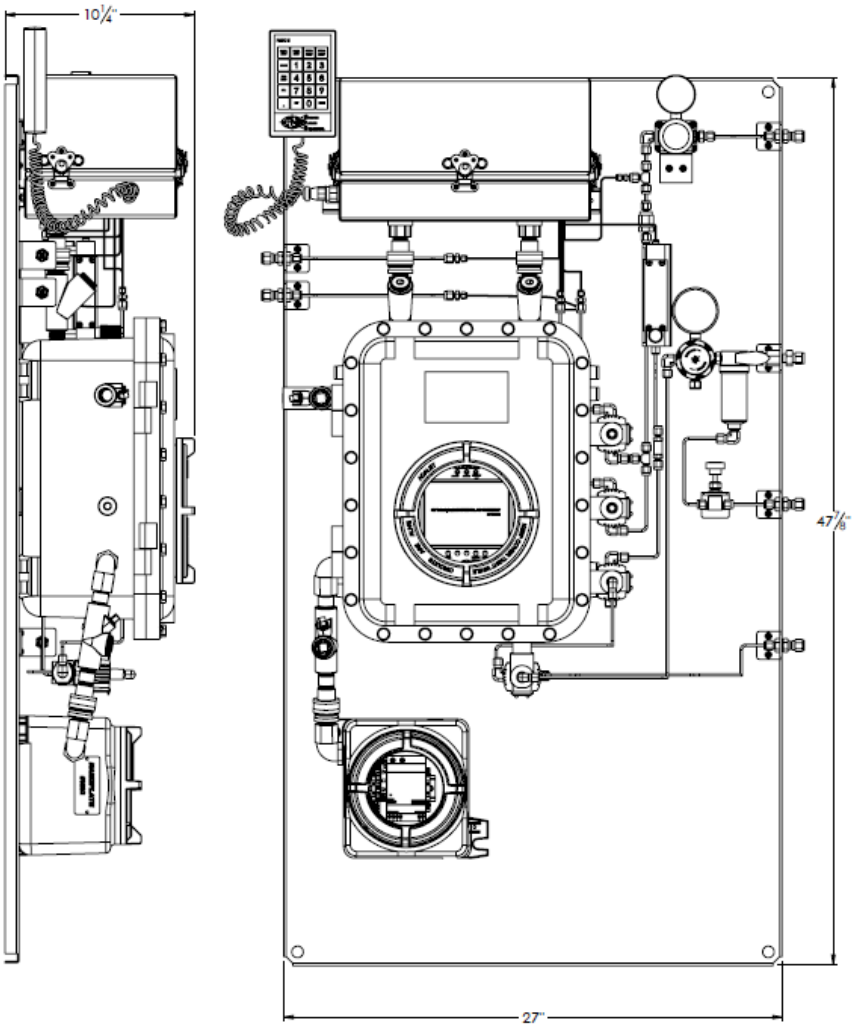
## Key Components

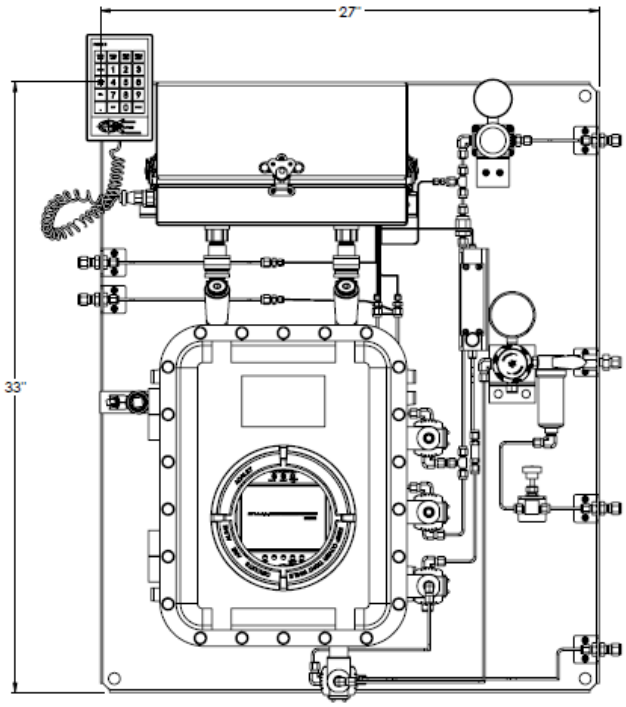



## Engineering Drawing for ATEX / IECEx Zone 1 Configuration




## Engineering Drawing for Class I Division 1 Configuration for C9 – C12




## Engineering Drawing for Class I Division 1 and Division 2 Configuration for C7+

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| | | | |
|---|---|---|---|
| **Compounds** | Btu, Specific Gravity, Wobbe Index, Oxygen, CO, C6+ - C12+, $N_2$, Methane, $CO_2$, Ethane, $H_2S$, Propane, Iso-Butane, n-Butane, Iso-Pentane, n-Pentane, Neo-Pentane, Hydrogen | | |
| **Sample Handling** | Vapor, Vaporizable Liquid, and Liquid Samples | | |
| **Accuracy** | ± 0.25% Btu/scf per 1,000 Btu/scf or ± 0.5% to 2% F.S. [Application-Specific] | | |
| **Repeatability** | ± 0.25% Btu/scf per 1,000 Btu/scf or ± 0.5% to 2% F.S. [Application-Specific] | | |
| **Sensitivity** | 200 ppm < C7+ or 1 ppm > C7+ | | |
| **Method(s)** | Thermal Conductivity Detection (TCD) for Compounds Lighter Than C7+<br>Nano-Electromechanical Sensor (NEMS) for Compounds Heavier Than C7+ | | |
| **Response Time** | 4 Minutes [Application-Specific) | | |
| **Carrier Gas** | Helium or Hydrogen at 4.1 bar, 20 cc/min [60 psi] | | |
| **Analog Outputs** | 4 x 4-20mA Outputs (Loop or Self-Powered) | | |
| **Analog Inputs** | 3 x 4-20mA Inputs [RTD, 4-20mA, Transducer] | | |
| **Modbus** | TCP/IP, RS232, or RS485 | | |
| **Digital Outputs** | 4 x SPDT Relays | | |
| **Digital Inputs** | 4 Discrete Inputs | | |
| **Remote GUI** | Ethernet Accessible | | |
| **Analyzer Display** | Color LCD With Extendable Keypad | | |
| **Ambient Conditions** | -20 to 60°C [-4° to 140°F] with 0 to 95% non-condensing relative humidity<br>-20 to 50°C [-4° to 122°F] with NEMS | | |
| **Dimensions** | 686 x 838 x 318 mm [27” x 33” x 12.5”] / 838 mm (48”) High with VAC Power Supply<br>838 x 1219 x 318 mm [33” x 48” x 12.5”] With NEMS | | |
| **Power** | 24 VDC or 90 to 240 VAC | | |
| **Power Consumption** | 100 Watts Start-up, 50 Watts Running<br>150 Watts With NEMS | | |
| **Model** | Class I Division 2 | Class I Division 1 | Class I Zone 1 |
| **C9 Capability** | No | Yes | No |
| **Enclosure Material** | Stainless Steel | Cast Aluminum | Cast Aluminum |
| **Enclosure Rating** | NEMA 4 / 4X, IP65 | NEMA 4 / 4X / 7, IP65 | NEMA 3, IP54 |
| **Enclosure Weight** | 38.6 kg. [85 lbs.] | 54.4 kg [120 lbs.]<br>81.6 kg [180 lbs.] With NEMS | 54.4 kg [120 lbs.] |
| **Area Classification** | Class I Div. 2<br>Groups BCD T3<br>Measurement Canada | Class I Div. 1<br>Groups BCD T3<br>Measurement Canada | II 2 G Ex db [ia Ga]<br>IIB +$H_2$ T3 Gb<br>$T_{amb}$ -20 ≤ Ta ≤ 60C |

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**Digital Copies Available**