SERVING THE GAS INDUSTRY WORLDWIDE

Gas quality measurement

Features

- Pre-engineered analysis and calculation for natural gas metering
- Small and compact packaging for easy field installation
- “out of the box” solution
- Low cost of ownership
- 2 sample streams
- PTB approval (pending)

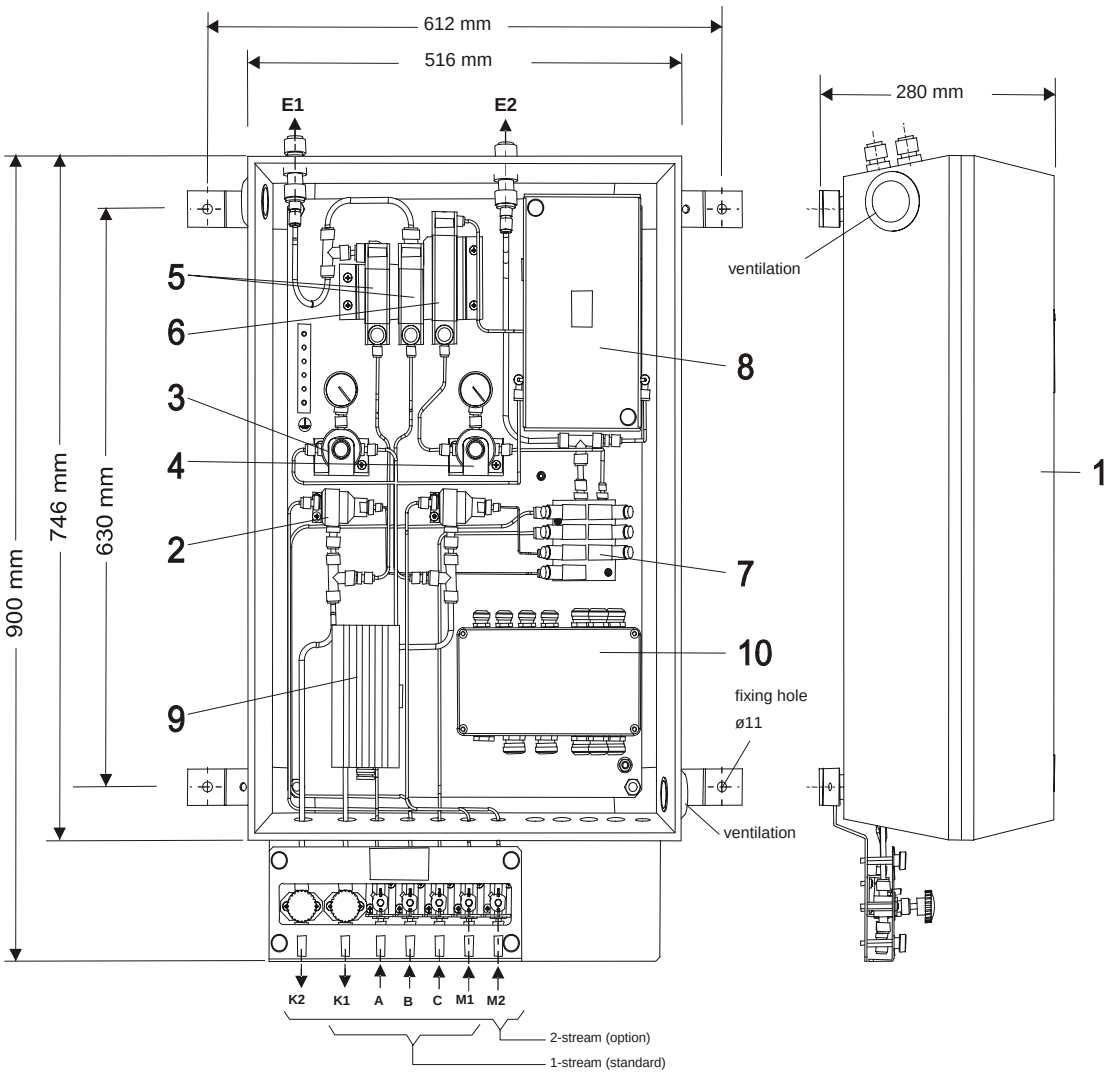
Applications

- Gas transportation pipeline
  - Metering stations
- Gas distribution pipeline
  - City gates
- Power generation / plant utility
  - Natural gas turbine
- Combustion process
  - Furnace

Pre-engineered Analysis And Calculation

- Analysis of 11 components
- Pre-configured calculation
  - Heat value (superior and inferior)
  - Gas density
  - Relative density
  - Wobbe index
  - Compressility factor
  - Heat ratio
- International standards
  - ISO 6974, 6976
  - GPA

Process Gas Chromatograph PGC 6000



1.) Îsolation cabinet with window in cover
2.) Liquid separator for measuring gas
3.) Pressure reducer for carrier gas
4.) Pressure reducer for measuring gas
5.) Flowmeter for bypass of measuring gas 1+2
6.) Flowmeter for measuring gas
7.) Solenoid valve block
8.) Measuring element CP 6000
9.) Heater 100 W with 10°C fixed value thermosta in the connecting cable
10.) EEx (e) connection box for pos. 7, 8, 9

Gas inlets:

A. carrier gas (inlet pressure 4.5 bar)
B. int. calibration gas (inlet pressure 2-3 bar)
C. ext. test gas (inlet pressure 2-3 bar)
M. measuring gases (inlet pressure 2-3 bar)

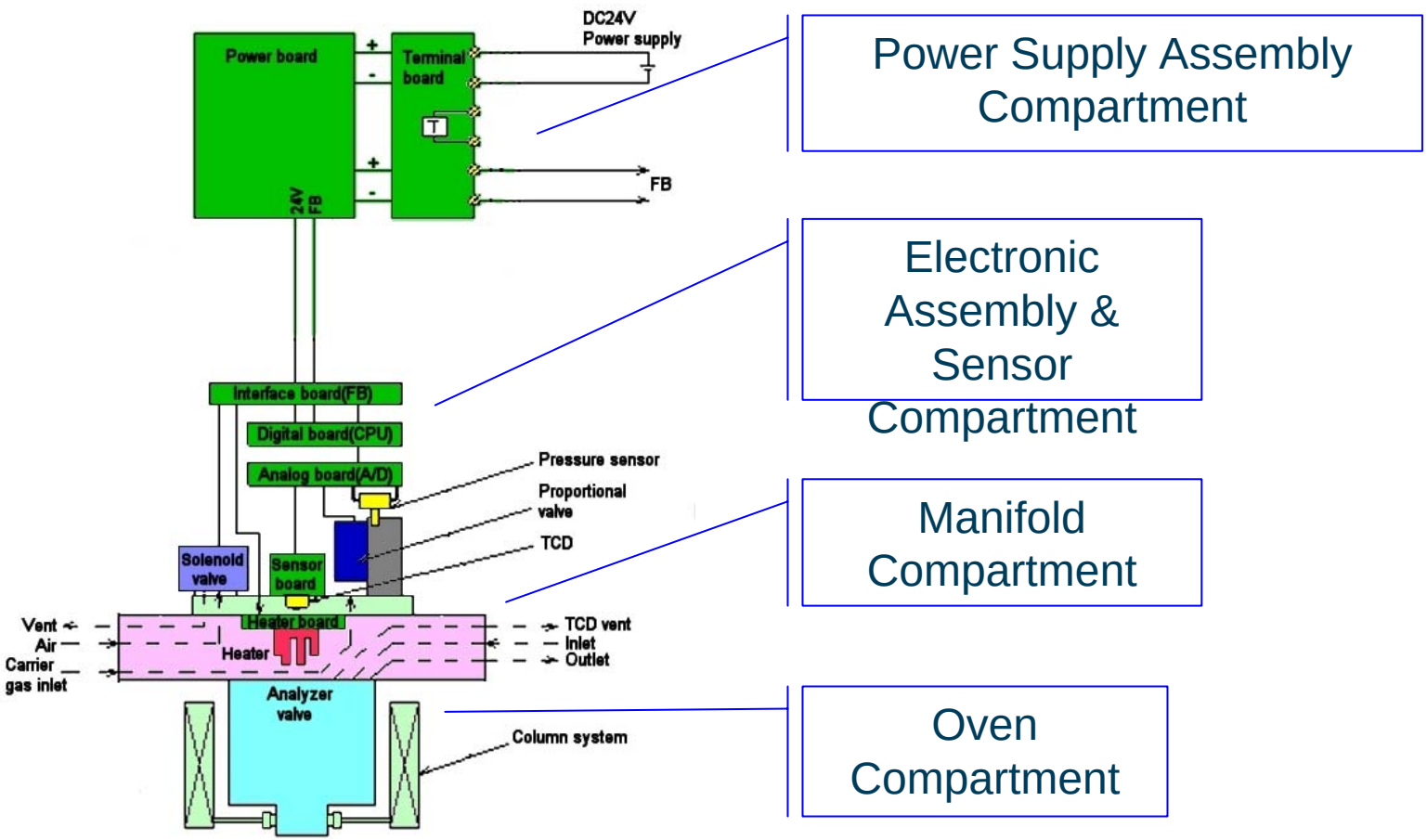
Gas outlets:

E1. vent line of bypass
E2. vent line of measuring gas
K1+K2. condensate outlet

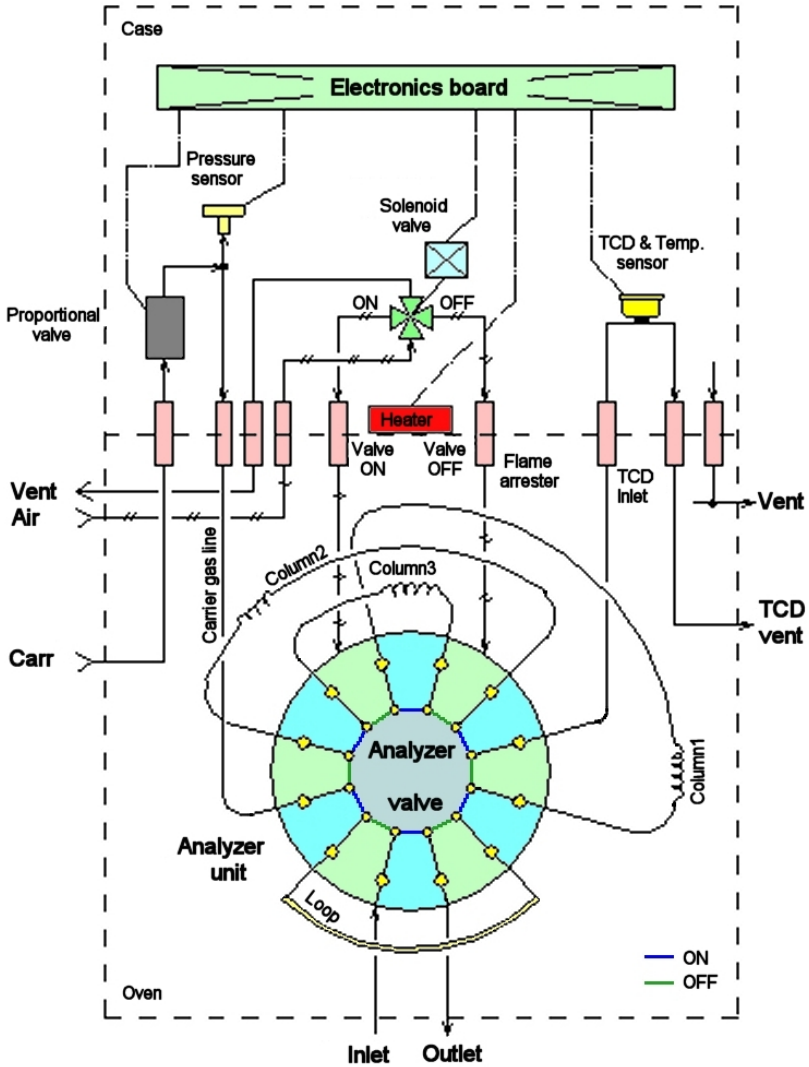
All tube fittings and connections in Swagelok system, tube diameters for the connections:

A, B, C: 1/8”
M1, M2: 4 mm
K1, K2: 6 mm
E1, E2: 12 mm

Modular Design With Four Compartments



Flow path


Case
Electronics board
Pressure sensor
Solenoid valve
TCD & Temp. sensor
Proportional valve
ON
OFF
Heater
Valve ON
Valve OFF
Flame arrester
TCD Inlet
Vent
Vent Air
Carrier gas line
Column2
Column3
TCD vent
Carr
Analyzer valve
Column1
Analyzer unit
Loop
ON
OFF
Oven
Inlet
Outlet

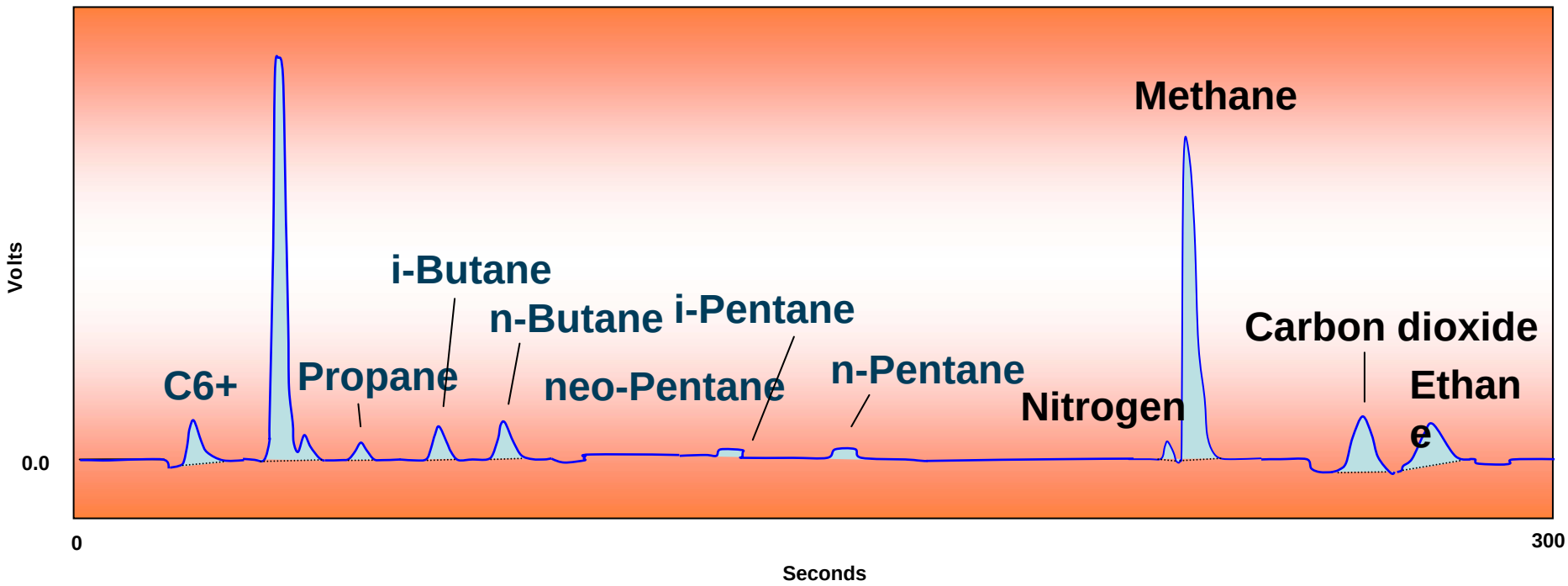
Analyzer Valve

- Diaphragm valve
- 12 port valve
- 2 position
  - On/off

Column System

- Micropacked columns
- 3 column system
  - Column 1: backflush column
  - Column 2: N_2 to C_2 separation
  - Column 3: C_3 to C_5 separation

Chromatogram



Measuring Ranges And Minimum Detection

Components	Ranges (mol%)	Minimum detection (mol %)
Sum of C6+	0 – 0.3	0.01
C3H8	0 - 3	0.05
i-C4H10	0 - 1	0.01
n-C4H10	0 - 1	0.01
neo-C5H12	0 – 0.5	0.01
i-C5H12	0 – 0.5	0.01
n-C5H12	0 – 0.5	0.01
N2	0 – 20	0.1
CH4	50 - 100	-
CO2	0 –10	0.05
C2H6	0 - 15	0.05

Functional And Performance Specifications

- Gas to analyzed
  - Natural gas
- Analyzed components:
  - Up to 11 single components
- Analysis Time:
  - 300 secs
- Detector:
  - Micro TCD (Thermal Conductivity Detector)
- Auto calibration
- Normalization of concentrations
- Hazardous area certification
  - II 2 GD EEx d IIC T6
- IP class
  - IP 65
- Process Gas
  - Temperature: -10°C to 50°C
  - Flow Rate: 50 ± 20 ml/min
  - Pressure: 50 to 490 kPa
- Ambient temperature limits
  - -10°C to 50°C
- Ambient humidity range
  - 0 to 95% RH
- Dimensions:
  - Width:612 mm x depth: 280 height: 900 mm
- Weight:
  - 30 kg
- Repeatability analysis:
  - ± 0.05% heat value (CV)

Installation Specifications

- Power Supply:
  - 24V DC + 15% 4A min
- Power Consumption:
  - 5 to 50 VA
- Utilities:
  - Carrier gas: helium
    - Purity: 99.99% or higher
    - Pressure: 400 kPa ± 50 kPa
    - Consumption: 25 ml/min
  - Instrument air (for valve actuation):
    - Pressure: 400 kPa ± 50 kPa
    - Can use helium (carrier gas) or nitrogen

The RMG GC Difference!

Simple Field Installation

12 Port Valve

Three Column System

Complete Solution Supplier