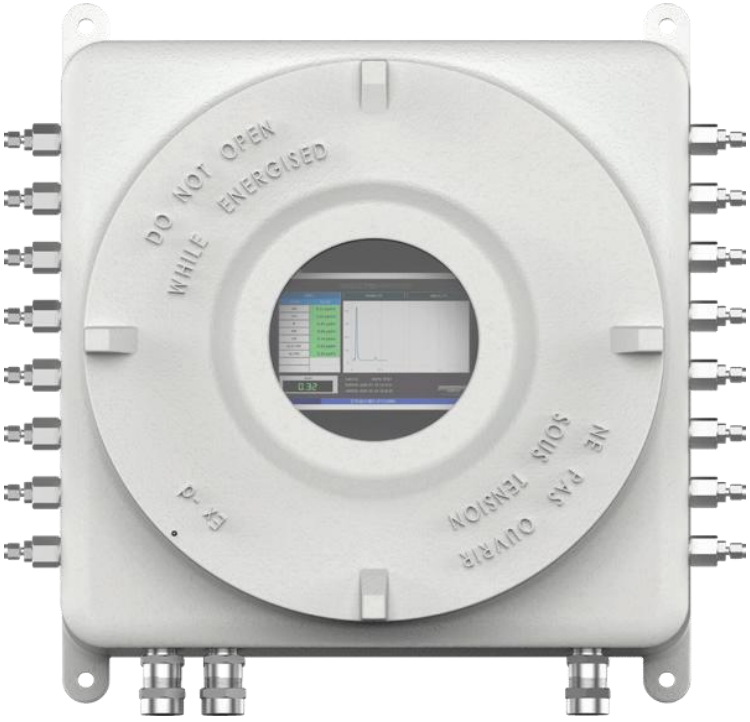
Chromatographic Online Analyzer – Analysis of Gas Samples from Refineries



- Physical safety; explosion-proof system Exd IIC T6 Gb, Zone 1 & 2
- Reliable UniLite Embedded Control System
- Multiple detectors: FID, TCD, miniature TCD, FPD, etc
- Supports switching between no fewer than 16 samples

Tel: 1 778 8310158 | Fax: 1 778 8310168 | Email: etech@etech-eie.com www.etech-eie.com

Introduction

Applications: Composition of new hydrogen gas from diesel hydrogenation; composition of circulating hydrogen gas; composition of new hydrogen gas; composition of low-pressure gas; composition of dry gas; propylene content in dry gas from the wax oil catalysis workshop; unsaturated hydrocarbon content (%) in desulfurization feed gas from the hydrogen production workshop; composition of dry gas from the ethylbenzene workshop; composition of high-pressure gas from Distillation Workshop No.1.

Sample temperature (°C): (Design temperature (°C)

Sampling pressure (MPa): (Design pressure in MPa)

Output signals: n channels of 4–20 mA DC current transmitters, and 1 contact alarm channel

Report Content：

Communication Interface: RS485 to DCS

No.	Component Name	unit
1	Hydrogen (H2)	v%
2	Nitrogen (N2)	v%
3	Hydrogen Sulfide (H2S)	v%
4	Methane	v%
5	Ethane	v%
6	Ethylene	v%
7	Propane	v%
8	Propylene	v%
9	Isobutane	v%
10	1-Butene	v%
11	trans-2-Butene	v%
12	1-Butene	v%
13	Isobutene	v%
14	cis-2-Butene	v%
15	C5 Components	v%
16	Carbon Monoxide (CO)	wt%
17	Carbon Dioxide (CO2)	wt%

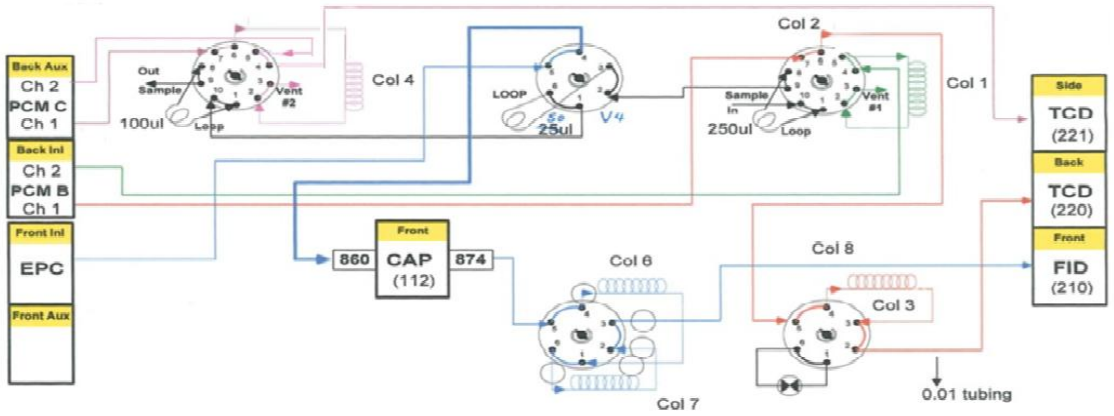
Technical Features

Analysis Method:

ASTM D1946　Standard Practice for Analysis of Gaseous Fuels by Gas Chromatography

Analysis Principle: The sample is introduced into the corresponding chromatographic column via the gas injection valve. The system consists of five valves, five columns, and three detectors. Through timed switching and back-pumping, each component is separated and detected. The percentage content of each component in the circulating hydrogen gas is calculated using the calibration area normalization method.

Detection Schematic Diagram：



EIE

Online Chromatography Analyzer - Oxide Sample Analysis

EIE-RGA-01

Basic mechanical and electrical parameters	
Enclosure	flameproof enclosure
Height and Depth	500mm × 500mm, depth 350 mm
Weight	50KG
Certifications	ATEXIICT6,ZONE1,2
Power Input	100–240 VAC, 50–60 Hz, maximum power of 300 W
Communication Mode	RS485,Ethernetx1,
Screen Size	standard configuration
4- 20 mA Output	Support (optional)
MODBUS	Support (Standard)
I/O Output	Instrument status, alarms, hardware errors, maintenance (all I/Os are configurable)

General Parameters for Chromatographs	
Chromatographic Column Type	capillary column
Heating method for the chromatographic column	constant temperature
Valve Type	Switching valve/membrane valve, operating temperature range: 0–225°C
Airway Control Method	Full pneumatic EPC control system
Detector Type	FID、TCD
Keypad	configurable explosion-proof keyboard
Instrument Reverse Control Software	Equipped with built-in UniLite® system control software, it automatically performs sampling, analysis runs, and periodic calibration/system response measurements.
Communication Port Configuration Software	Modbus or other industrial standard protocols
Analog Output	Supports no fewer than 32 channels
Multiple-sample testing	Supports cyclic sampling at over 16 sampling points (optional)
control software	UniLite Industrial Edition
detector guard	FID: Automatic ignition; automatic gas cutoff upon fire suppression; alarm function TCD: Automatic monitoring of carrier gas