PGC10 Edition II

Process Gas Chromatography

Application

- Refineries
- Gas Processing
- Petrochemical
- Power Generation
- Environmental Monitoring

The PGC10 Edition II is designed for a variety of refining, petro-chemical, power, environmental, and any other application where selected components in gaseous or liquid streams must be precisely monitored on a continuous basis.

Complex applications requiring multiple valves and detectors are designed with independent analysis sequences using the larger PGC10 Edition II. This yields measurement sequences which are easier to understand and maintain for greater long term reliability. More analytical valves, more digital pressure zones, and multiple detectors can be applied to support the most complex application. And a single PGC10 Edition II with master controller can be extended to control up to 8 ovens via intrinsically safe fiber optic communication.

This Gas Chromatograph is designed to operate unattended. If, however, adjustments are needed, our embedded UniExpress™ software allows complete control of your gas chromatographs – either locally with 12" touch screen or remotely via your internet explorer. Yes, no dedicated software required. Moreover, the built-in full function key board will make every work easier.

From UniExpress, a user can:

- Review and modify all analytical settings
- Overlay multiple chromatograms for troubleshooting
- Single click for auto calibration
- Upload and trend any of the measured results
- Export data for use in other third-party applications
- Check original calibration against last calibration
- Perform automatic diagnose

UniExpress Software is Linux® - based software designed to make analyzer configuration, maintenance, and data collection easy. Our exclusive Windows® - based software with intuitive dropdown menus and fill-in-the-blank tables, even new users can quickly navigate through the software.

Features

- Full electrical pressure programming
- Ex px IIB+H2 T4, Zone I & II
- Catalyst unit inside for zero air
- Detectors: FID, TCD, microTCD, FPD, PDHID, etc.
- High sensitivity TCD down to low ppm levels
- Broad application scope with up to 4 detetors
- Two micro programmable oven
- Rotary and diaphragm-based chromatograph valves available
- High pressure liquid injection system
- Fully compatible with modern Ethernet net-works and DCS communication
- 10yr + proven stable system

Injector

- Rotary valve, diapharm valve
- HPLIS
- High temperature samples
- Sample concertration system
- Inert coated

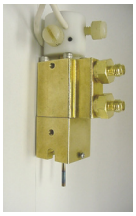
Gas Chromatograph Valves

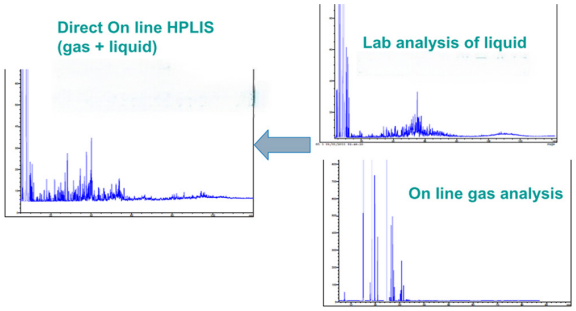
The chromatograph valves used in Asicotech Analytical Process Gas Chromatographs are unique to the online gas chromatograph market. Cause we support nearly all type of valve in the market. We can use the correct option based on the application.

HPLIS(High Pressure Liquid Injection System)

For liquid samples, expecially with high pressure, it is diffcult to analysis high boiling point compounds in low boiling point matrices, due to the discrimnatiion and fractionation. Together with the split/split less injector, our HPLIS system can

- Sample Pressure Rating: 1200 psig @ 30 C using Helium
- Sample volumes available: 0.06, 0.125, 0.25, 0.5, 1.0, 1.5, 2.0 & 12 uL
- Sample Chamber Material: 316 Stainless
- Sample Chamber Seal material: Virgin Teflon





Single injection for analysis light and heavy hydro-carbons

High Temperature Samples

For samples with high temperature, the valve and tubing temperature should maintain much higher temperature than column oven. PGC10 Edition II can configure two valve boxes with independent heat sink. This unique design, with oven temperatures up to 330° C, can install up to 5 valves for maximum analytical flexibility.

Meanwhile, all heating zones are powered in 24Vdc, and all current are monitored by our patented safety system.

For compounds with Low Concentration

When user need to detect trace level compounds, which is widly required in semi-conduction or petro chemical, PGC10 Edition II can install PDHID, EPD, ECD, FPD, etc, or other special dectors. With direct injection of sample loop(up to 5ml), it can meet different requirement from ppb to ppm.

Also, our unique UniVantage thermal desoprtion system are available for VOCs or ppt level sulfur. The modulized peltier thermoelectric cooling system with our unique TD sampling the desorption parts are born for process application. All TD tubings are inert coated SST. and heated with direct heating technogy for long time stable performance.

Inert parts for challenge samples

No matter tubing, fittigns, valves, regulators, we offer inert coated parts for customers. All parts are strictly tested in factory for highest performance.

Detectors

Because your gas chromatography methods can be diverse and have specific requirements, PGC10 offers a GC detector portfolio that addresses a broad array of applications to meet your needs. Our flame ionization detector (FID) and thermal conductivity detector (TCD) offer unique features and can be used for most applications. Selective detectors can dramatically improve your ability to detect only specific analytes of interest. These include electron capture detector (ECD) for halogenated compounds, nitrogen phosphorus detector (NPD) for nitrogen or phosphorus compounds, and flame photometric detector (FPD) detectors for sulfur and phosphorus compounds. For trace level detection, PDHID and EPD detector are also available.

Standard congurations use one or two detectors; however, with the modular approach as many as four detectors can be installed. Depending on the requirements detectors can be run in parallel or in series.

FID

The flame ionization detector (FID) is the most widely used detector for gas chromatography because of its reliability, versatility, and ease of use. It responds to virtually any organic compound while generating little or no signal for common carrier gases.

The auto-ranging FID used on PGC10 systems offers the ability to detect and quantitate from percent levels to parts per billion (ppb) in a single injection. Rapid data acquisition rates easily accommodate fast GC. This detector equiped with our APC module and the hydrogen would be shut off once flame is off or any issue is raised during running.

TCD

The thermal conductivity detector (TCD) is a universal detector based on the measurement of the thermal conductivity of a gas. The TCD measures the difference in heat conductivity between pure carrier gas and carrier gas containing sample components.

The single-filament TCD used on PGC10 does not require a separate reference gas or manual potentiometer adjustment yet provides a stable baseline with a minimal amount of signal drift commonly seen with other TCDs that utilize valve switching. The detection limit for permanent gas

PDHID

The PDD is a universal, non-destructive, high sensitivity detector. The response to both inorganic and organic compounds is linear over a wide range. Response to xed gases is positive (increase in standing current), with an MDQ in the low ppb range.

PDDs (pulsed discharge detectors) utilize a stable, low powered, pulsed DC discharge in helium as an ionization source.

FPD (Flame Photometric Detector)

The FPD used in PGC10 are optimized for process analyzers. The enhancements detector raise the FPD Plus maximum operating temperature. Our FPD decrease MDLs by the advanced signal processing algorithm. These capabilities are also available with the dual-wave-length version.

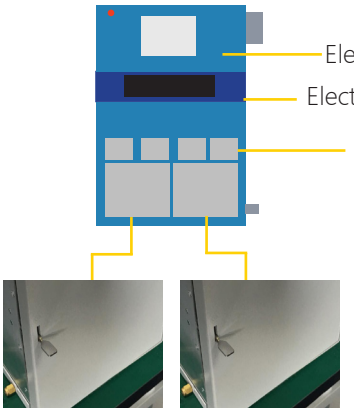
PGC10 Edition II Oven and Penumatic

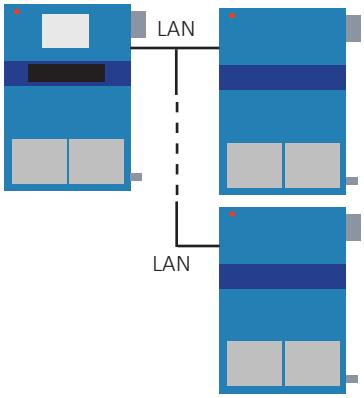
- Up to two independent oven control
- Up to 4 ISO oven for columns
- One master GC, multi-oven connection

Flexiable Oven Configuration

When making complex applications simple or multiplexing numerous stream samples, the PGC10 Edition II can meets all the applications requirements. Each unit comprised of four sections; the electrical control and display; the digital pneumatic control unit, the valve box, and the programable oven with detectors and columns. All sections have front access while the electrical control and display section also has an additional side access for easy maintenance and service for all critical components. All analytical flow inlet and outlet connections are located on the right side of the analyser oven. This allows for mounting multiple ovens in a vertical arrangement and keeps the piping layout simple and accessible.

The right-side programmable oven has an additional side(right) access for detector maintenance. The whole GC incorporate an efficient layout ensuring easy access to all the critical components.





Extend to multi-oven connection with one master controller

Master Control Software

- Based on Linux
- Different user access control level
- Access via internet explorer
- Offline data process with Windows program

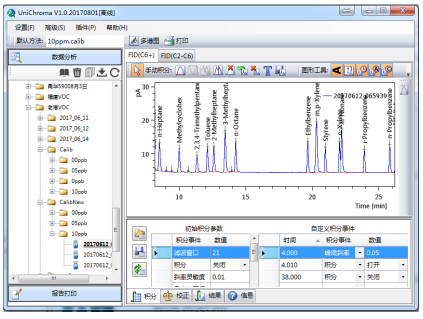
Uni Series WorkStation

In PGC10 Edition II, electronic pressure control module is standard and supports up to 15 pressure zones and up to ten heating zones, which can be set directly via the 12" touchscreen and full function keyboard. Meanwhile, user can access to PGC10 Edition II remotely via a network PC/pad using the standard internet explorer. The embedded software UniExpress can display both current and multiple archived chromatograms on the screen, streamlining the time needed to perform routine analyzer maintenance. Different users with access control level can be easily set.

Data collected from the process gas chromatographs can be stored and displayed in a wide range of options, such as trend lines on the screen and logs automatically documenting all changes made to the process gas chromatograph. Data can also be exported in formats compatible with our UniStation Windows ® applications.

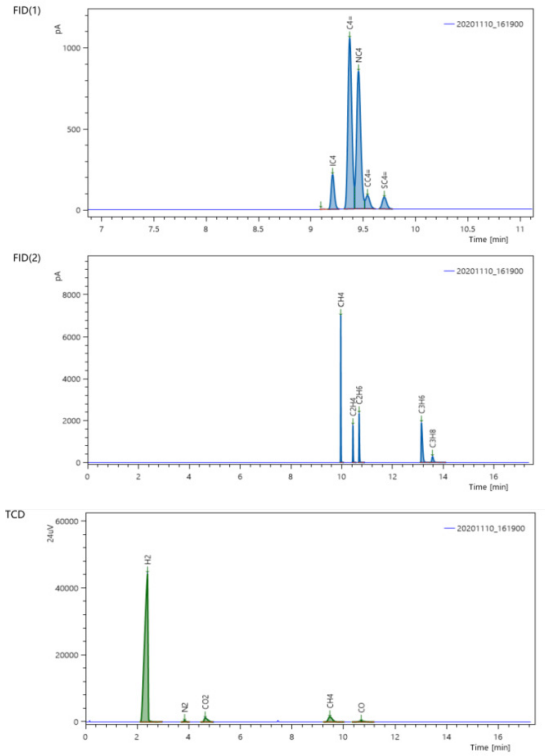
UniExpress

Fully compatible

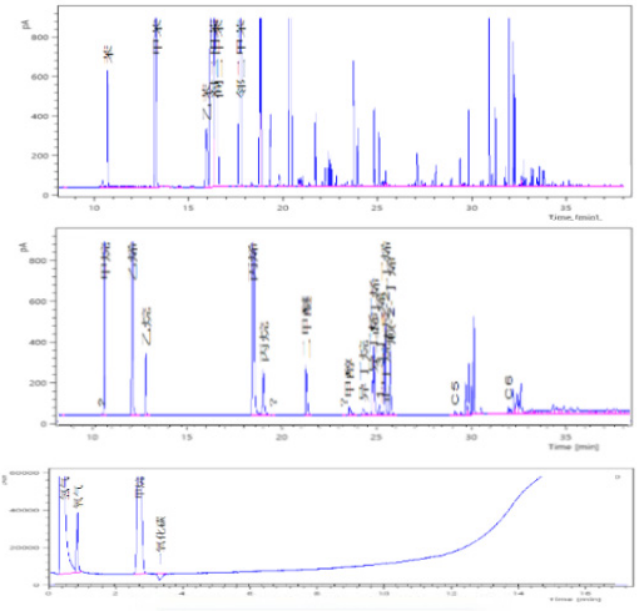


UniStation-PC Software based on Windows

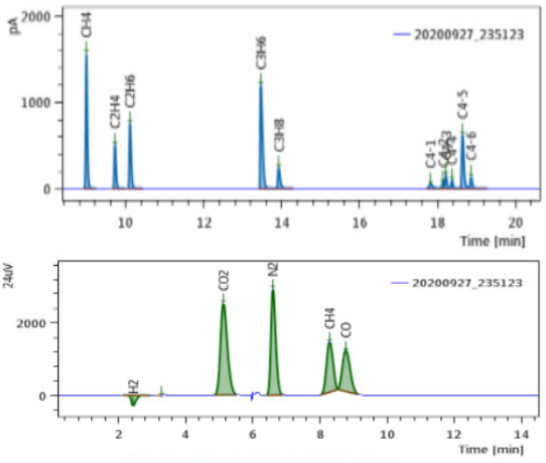
Applications



Permnant Gas and Light Hydro-carbon



Online full component analysis of the aromatization reaction



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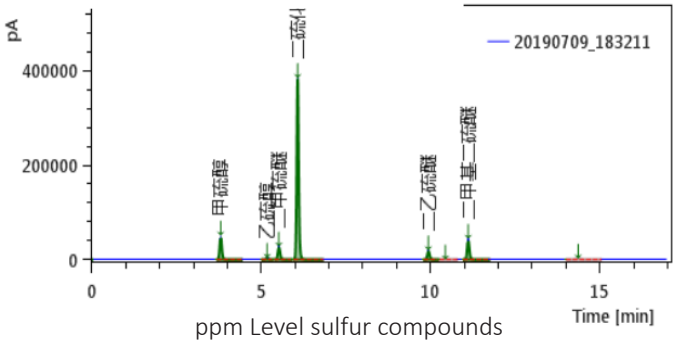
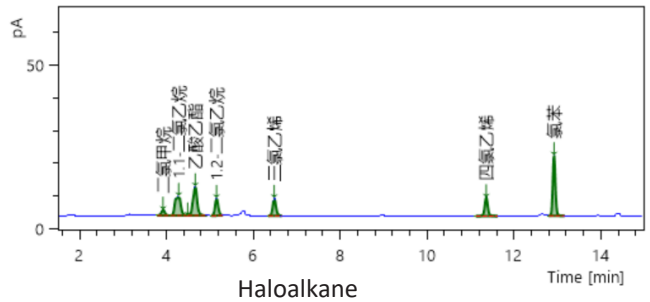


ppm Level sulfur compounds



Haloalkane

Specifications

Construction & Electronics	
Environment	-10° to 40° C
Dimensions	912mm Wx979mm Hx509mm D
Approximate Weight	50KG[u]
Area Safety Certification	ATEX: Ex px IIB+H_2 T4, GB ZONE1,2
Enclosure Protection Rating	IP66
Mounting	Wall-mount(standard); Free-standing
Power	Standard: 220VAC 800 watts start-up; 250 watts nominal
Analog Inputs	Four inputs filtered with transient protection (optional, user scalable and assignable)
Analog Outputs	Up to 32 non-isolated analog outputs, 4–20 mA (optional);
Communication Ports	RS-485x1(standard); TCP-IPx1(standard); RS-232(optional)
Digital Inputs	Up to 16 digital inputs(optional); user assignable
Display	12.1” touch screen
Keyboard	Full function
Performance Capabilities	
Oven	mini programmable oven, up to 350° C; up to 2 in one GC unit Airless heat sink, maximum 250° C
Valves & Injection	6-port and 10-port valves. Other types of valves may be used, such as liquid injection or Split/Split less, depending on the application
Streams	Up to 16 streams (including calibration stream) internally controlled; up to 32 streams externally controlled
Detector	FID, TCD/microTCD,FPD/PDHID, Up to 4 detector in each unit
Penumatic control	Electrical, with 0.01psi resolution
Detector protectioon	FID: auto ignite, auto detection of flame for shut off hydrogen TCD: auto detection of carrier gas for filament protection
Fittings	1/8" Ferruel or 1/16" ferrule; VCR or other type available
Workstation	UniExpress with full function
Remote control	connect to GC via internet explorer throgh VPN or internal network
Compatible	Offline date processing via UniStation

* parameter could be changed without notification