

Process Gas Chromatograph PGC2000 - General Specifications

APPLICATION

- Usage** The Process Gas Chromatograph PGC2000 uses columns to separate gas or liquid samples prior to measurement. The analyzer operates unattended, automatically sampling and analyzing process streams.
- Description** The analyzer assembly includes an air-purged electronics enclosure and solenoid enclosure, an insulated, air-heated/air bath oven, and a flow control area with pressure regulators / indicators or an optional Electronic Pressure Controller (EPC). The insulated oven assembly houses an Isothermal Oven, which contains the analytical columns, the detectors, the sample valves, and an optional Methanizer / Air Cleanup unit. Sample separation takes place in the chromatographic columns. These special columns are installed between the analytical valves and the detector. These columns contain packing, which separates the compounds to be analyzed so that they enter the detector in a predictable sequence. Results of the separation and measurement are displayed on the front panel display, transmitted as analog values, and/or processed as digital data for communication on a data highway to a Distributed Control System (DCS).

Physical

Environmental (Enclosure):	Protected from weather: IP 52, (NEMA 12) Equivalent
Ambient Temperature Range:	0 to +50° C (32 to 122° F)
Humidity:	95% relative humidity, non-condensing
Dimensions:	496 mm W x 340 mm D x 1175 mm H (19.5 in. W x 13.4 in. D x 46.3 in. H)
Weight:	73 kg (160 lb) (minimum, configuration dependent)
Mounting:	Wall: 32 mm (1.3 in.) from wall with brackets Floor: Optional wheeled dolly
EMI/RFI Considerations:	Optional CE Mark to meet EMC Directive 89/336/EEC as amended by 92/31/EEC & 93/68/EEC. Conforms to EN 50081-2: 1994 & EN50082-1: 1992
Electrical Entries:	Top
Pneumatic Entries:	Right Side
Sample Entries:	Gas: Bottom Liquid: Right Side
Vents:	Bottom and/or Right Side

Safety Area Classification

NEC:	Class I, Division 1 Group B, C, D with type 'Y' Purge Class I, Division 2 Group B, C, D without purge (Optional Type 'X' purge provided for Division 1) (Optional Type 'Z' Purge provided for Division 2)
Cenelec:	EEx pde [ib] ib IIB+H2 T2 (LCIE 97.D6074 X)
CSA:	Class I, Division 1 Group B, C, D with type 'X' Purge Class I, Division 2 Group B, C, D with type 'Z' Purge
Z or Y-Purge Wait Time:	4.5 minutes
X-Purge Timeout:	4.6 minutes @ 60 Hz, 5.5 minutes @ 50 Hz

Power

Voltage:	100 VAC (+15, -6 VAC), 120 VAC ± 10%, 230 VAC ± 10%
Frequency:	50/60 Hz ± 10%
Power Consumption:	1,200 VA Startup, 900 VA Steady-State Operation Typical, varies with installed options)

Instrument Air

Supply Connection:	3/8 inch tube, minimum
Supply Pressure:	414 kPa (60 psig) minimum
Quality:	Instrument grade: Clean, Oil Free and -34° C, (-30° F) dewpoint
Flow Rates:	Start-up Purge: 214-242 L/min (7.6-8.6 ft ³ /min) at 20° C, all purge types
	Steady State Purge: 127-147 L/min (4.5-5.2 ft ³ /min) at 20° C, all purge types

Analytical Detectors

Standard Detectors:	Thermal Conductivity, Flame Ionization, Flame Photometric, Inter-column Thermal Conductivity
Third-party Detectors:	Consult Factory for availability
Configuration:	Up to two simultaneous detectors (One FPD per analyzer) Each with capability for sequential Inter-column TC detector.

Isothermal Analytical Oven

Oven Liner:	Stainless Steel
Internal Dimensions:	390 mm W x 520 mm H x 230 mm D (15.3 in. W x 20.4 in. H x 9.0 in. D)
Number of Valves:	Standard provisions for 5 gas sample or column switching valves in the oven. Standard provisions for 2 external liquid sample valves. (Consult factory for special requirements)
Columns:	1/16, 1/8, 3/16 inch, Packed Stainless, Metal or Fused Silica Capillary
Heat:	Forced Air
Temperature Control Method:	Closed loop PID
Oven Temperature:	Ambient + 30° to 180° C (Settings and display in ° C only)
Setpoint Resolution:	1° C
Temperature Stability:	
Steady Ambient:	±0.1° C
Ambient Range:	±1.0° C

Gas Control

	Analog	Electronic
Control Method:	Mechanical regulators	Closed loop PID, Temperature stabilized
Number of Zones:		1 to 5
Filtration:	2µm at inlet, provided	2µm at inlet, provided
Inlet Pressure:		
Minimum:	Setpoint + 130 kPa (20 psig)	Setpoint + 69 kPa (10 psig)
Maximum:	1380 kPa (200 psig)	1034 kPa (150 psig)
* Note *	Supply pressure = 1380 kPa (200 psig) or 345 kPa (50 psig) higher than max output. E.g. supply to a 700 kPa (100 psig) regulator should not exceed 1034 kPa (150 psig.)	
Range:	2-15 psig 5-30 psig 20-100 psig	0-100 psig, Bubble tight, non-venting
Gauges:	0-102 kPa 0-200 kPa 0-700 kPa (0-15 psig) (0-30 psig) (0-100 psig)	Electronic readout: 0.01 psig resolution Setpoint resolution: 0.01 psig
Temp Coefficient:	2.1 kPa/25° C (0.3 psi/25° C)	None
Regulation:	0.1 kPa outlet / 10.0 kPa inlet (0.01 psi outlet / 1.0 psi input)	See Below
Accuracy:		
0-50 psig:	N/A	1.7%
50-100 psig:	N/A	2.7%
Repeatability:	N/A	±0.1 psig
Allowable Gasses:	H ₂ , He, N ₂ , Air, Ar	H ₂ , He, N ₂ , Air, Ar No liquids, corrosives, combustibles, O ₂
Quality:	GC Grade	GC Grade
Flow Adjustment:	Oven mounted needle valves or flow controllers with external adjustment	Oven mounted needle valves or flow controllers with external adjustment
Tube Fittings:	316 SS Gyrolok (std.) 316 SS Swagelok (optional) 1/16, 1/8, 1/4 inch connections	316 SS Gyrolok (std.) 316 SS Swagelok (optional) 1/16, 1/8, 1/4 inch connections