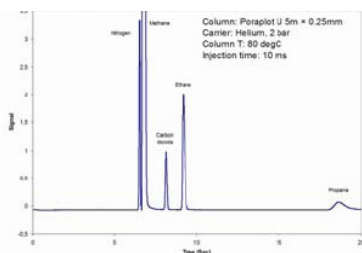


BASE BA-GCA Gas Chromatograph Analyzer



The BA-GCA is part of the **BAGGI BASE® Instruments Series**. They are the result of combining the latest state-of-the-art-technology with over 50 years of industry experience.

The BA-GCA is a micro chip technology Gas Chromatograph Analyzer, for fast and reliable gas analysis. It is designed for ease of use, reduced maintenance and low gas consumption in on-line applications. It is specially built for installation in areas with an explosive atmosphere.

The micro chip technology allows to create low cost Gas Chromatograph

components (valves, injector, detector, column, flow system, heating, flow diagnostics) with low internal volume and low thermal mass. These micro chip components are integrated in such a way that capillary connecting tubes are avoided and virtual zero dead volume connections are created.

The following standard column types are available:

BA-PDMS (PolyDiMethylSiloxane WCOT column) for: Alcohols, aromatic hydrocarbons, esters, flavors and aromas, free fatty acids, glycols, halogenated hydrocarbons, hydrocarbons, ketones, oxygenates, solvents, sulfur compounds.

BA-PLTU/PLTQ (Divinylbenzene type U / type Q PLOT column) for: permanent gases, CO₂, halogenated compounds, hydrocarbons C₁-C₆, H₂S, ketones, oxygenated hydrocarbons and solvents.

BA-MS5A (Molecular Sieve 5A PLOT column) for: He, H₂, O₂, CO, Ne, N₂, Ar, CH₄, Kr, Xe.

The enclosure houses up to four columns, that can be assembled as one integrated instrument with common sample and carrier path, or deployed as individual stand alone instruments.

There is a choice of the following detector types:

- **TCD** (Thermal Conductivity Detector) is the standard delivery
- **PID** (Photo Ionization Detector) is available upon request
- **FID** (Flame Ionization Detector) is available upon request

The BASE® Series embedded computer is the heart of the system.

The figure shows an ATEX certified version, contained within a Stainless Steel 316L enclosure provided with a protective air purge system and a Vortex cooler (connected to the plant instrument air). Magnetic push buttons allow controlling the system without opening the cabinet.

ATEX compliance:

- II 2 G Ex px II T6
- II 3 G Ex pz II T6

The computer, besides displaying the actual readings on its LCD screen, offers a GUI for configuring the system, archiving the historical data in Excel compatible format, displaying the measurement in graphical format and generating alarms. The main software function is to process the chromatograms data (peak heights and peak areas) for obtaining the components concentration values. Finally, it can transmit remotely the measurements by means of 4...20 mA analogue outputs and the alarms by means of digital (relay) outputs.

In short the embedded computer, together with its circuitry, acts as a PLC to operate the Gas Chromatograph Analyzer during normal operation, start-up, shut-down.



Main advantages	
Analysis in seconds	The integrated micro chip injector ensures precise injection, while the fast column temperature programming gives an extra dimension in method optimization. Together this enables fast and highly repeatable analysis results in seconds.
Column temperature programming	With a speed of 240 °C / minute, the GC columns can be temperature programmed up to 10 temperature segments with a 0.1 °C accuracy. This unique capability enables faster solutions.
Flexible configuration	The micro GC channels are independently operating GCs, that can be assembled as one integrated instrument with common sample and carrier path, or deployed as individual stand-alone instruments. No upfront investment is required to upgrade your micro GC with an additional GC channel later on.

Specifications	
Sampling	<ul style="list-style-type: none"> - Sample conditions: non-condensing gas of 0 °C to 50 °C - Inlet: 1.6 mm (1/16") s.s. Valco fitting with replaceable 5 µm s.s. filter - Max sample inlet pressure: 300 kPa (44.1 psig) conditional to sample pressure not exceeding column operating pressure - Integrated 2 Stream selector, double block and bleed (optional) - Integrated Sample vacuum pump (optional)
Injector	<ul style="list-style-type: none"> - Heated injector up to 150 °C - MEMS based injector integrated on-chip, without moving parts. - Injection volume: 0.2 µL to 7.5 µL, software selectable
Detector	Dual-channel MEMS micro Thermal Conductivity Detector (TCD). Other options available upon request.
Detection limits	<ul style="list-style-type: none"> - WCOT columns: 1 ppm - Micro-packed and PLOT columns: 10 ppm <p>This will vary by compound, sample matrix injector type, carrier gas and interferences</p>
Operating range	<ul style="list-style-type: none"> - Concentrations: 1 ppm to 100% - Linear dynamic range: 10⁶
Column temperature control	<ul style="list-style-type: none"> - Ambient plus 15 °C to 180 °C - Isothermal (temperature stability < 0.1 °C) - T-ramp up: 240 °C per minute - T-ramp down: 60 °C per minute - Temperature repeatability ≤ 0.1 °C
Carrier gas	<ul style="list-style-type: none"> - All four major carrier gasses: helium, hydrogen, nitrogen and argon - Instrument inlet: 500 ± 10 kPa (72.5 ± 1.5 psig) - Column pressure control 50 – 300 kPa, user selectable - Carrier inlet: 1.6 mm (1/16") s.s. Valco fitting with replaceable 5 µm s.s. filter
Power	90-264 VAC, 47-63 Hz; 6A max
External input/output	<ul style="list-style-type: none"> - Analog input: four inputs filtered with transient protection - Analog output: three isolated outputs, 4 – 20 mA (standard) - Analog output: three additional isolated outputs (optional) - Digital input: six digital inputs (optional) - Digital output: four isolated relay signals (alarm and warning) - Digital output: four additional relay signals (optional) - Serial line: RS-232/RS-422/RS-485 with Modbus/Profibus/FieldbusFoundationProtocol - Ethernet card: two 10/100 mbps with RJ-45 port - One integrated WiFi card 11 Mbit/s
Dimensions/Weight	<ul style="list-style-type: none"> - Wall Mount: 500mm H x 400mm W x 250mm D (19.68" H x 15.74" W x 9.84" D) - Weight: 15 Kg approx.
Environmental conditions	<ul style="list-style-type: none"> - 0 °C to 40 °C (32 °F to 104 °F) - 0 °C to 55 °C (32 °F to 131 °F) with vortex cooler
Enclosure protection	IP66
Compliances	<ul style="list-style-type: none"> - EN 61326, EN 61010-1 - ATEX (optional) <ul style="list-style-type: none"> II 2 G Ex px II T6 II 3 G Ex pz II T6

All the specifications subject to change without notice

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