

# Chromatograph - Gas (M-GC3420A)



M-GC3420A

## FEATURES

### ◆ Self-diagnostic function:

1) Core tests; 2) Automatic tests; 3) Extended tests; 4) Basic tests;

Monitor the status of GC continuously. Once finding faults, it'll display the information and show the wrong zone and the settling method.

### ◆ Self-protective function:

1) Overrun temperature protection; 2) Short circuit hint; 3) TCD filament protection; 4) FID flameout hint; 5) PFD exposed-light protection; 6) Keyboard locking with password; etc., ensuring normal running.

### ◆ Simple operation, powerful automation:

1) All parameters can be entered through keyboard with prompt function;  
2) 4 sets of complete chromatography analysis methods can be stored and recalled automatically;

3) An autosampler can be connected;

4) Parameters can be modified instantly while the GC is running;

5) Chromatography analysis method can be activated for 99 times repeatedly at the same time. It's especially suitable for unattended operation.

### ◆ More choices of injectors:

1) On- Column Injector for Packed Column; 2) Flash Vaporization Injector for Packed Column  
3) Automatic or manual gas inject valve; 4) Headspace sampler; 5) Thermal desorption system  
6) Split/Splitless Capillary Injector; Three Injectors or two Split/Splitless Capillary Injectors can be fixed on GC.

### ◆ More choices of detectors:

1) TCD; 2) FID; 3) ECD; 4) FPD; 5) TSD

Maximum of two TCDs or three different kinds of detectors can be installed.

- ◆ **Reactor:** 1) Internal; 2) external
- ◆ **Time programming of detectors:**  
Each of detectors has 5-ramp programmable time control. Output-signal, attenuation range, and polarity can be set automatically.
- ◆ **Time programming of external events:**  
Providing 4 external events with 20-ramp programmable time control. The optional GC relays may be used to automate valves, operate split/splitless capillary injectors, drive auxiliary devices, or switch signals between detector A and detector B in a run.
- ◆ **Many kind of special-purpose GC can be provided according to user's request.**

## SPECIFICATIONS

- ◆ **Column oven:**  
Operating temperature range: ambient temperature to 400°C;  
Dual opening-door at the back of column oven;  
Cooling time: 250°C to 50°C in 5 min;  
Programmable oven with 4-ramp temperature control;  
Temperature programming rate: 0.1~50°C/min
- ◆ **Injector system:**  
Operating temperature range: ambient temperature to 400°C
- ◆ **Thermal conductivity detector -TCD:**  
Maximum temperature: 400°C  
Sensitivity:  $\geq 10000 \text{mv} \cdot \text{mL/mg}$  (for butane)  
Linear range:  $10^5$   
Current range: 50 to 400mA
- ◆ **Filament protection:**

If He or H<sub>2</sub> carrier gas flow in the detector cell is cut off for 4 minutes, filament power will be shut off automatically.

- ◆ **Flame ionization detector-FID:**  
Maximum temperature: 400°C  
Minimum detectivity:  $\leq 5 \times 10^{-12} \text{g/s}$  (n-C<sub>16</sub>)  
Linear range:  $10^7$   
Flameout hint: monitoring the status of GC continuously after being turned on.
- ◆ **Electron capture detector-ECD:**  
Maximum temperature: 400°C  
Minimum detectivity:  $\leq 0.1 \text{pg/mL}$  ( $\gamma$ -666)  
Linear range:  $10^4$   
Emission source:  $11 \text{mC}^{63}\text{Ni}$
- ◆ **Flame photometric detector-FPD:**  
Maximum temperature: 400°C  
Minimum detectivity:  
[P]  $\leq 2 \times 10^{-12} \text{g/s}$  (tributyl phosphate)  
[S]  $\leq 2 \times 10^{-10} \text{g/s}$  (p-methylsulfurphosphorous)  
Linear range: [P]:  $10^5$  [S]:  $10^3$   
Two air-hydrogen flames: For large volume injection or trace sample injection analyses;  
Single air-hydrogen flame: sulfur sensitivity can be increased;  
Direct output: for phosphorus or sulfur analyses;  
Square-root output: for sulfur analyses;  
Exposed-light protection:  
When exposed-light current is more than 12 $\mu\text{A}$ , high voltage will be cut off automatically.
- ◆ **Nitrogen-phosphorus detector-TSD:**  
Maximum temperature: 400°C  
Minimum detectivity:  
[N]  $\leq 2 \times 10^{-13} \text{g/s}$  (azobenzene)  
[P]  $\leq 1 \times 10^{-13} \text{g/s}$  (malathion)  
Linear range: [N]:  $10^5$  [P]:  $10^4$