MAG gas chromatograph for laboratory use

Intended use

- ✓ Stationary installation in a lab;
- ✓ As portable chromatograph in mobile labs, mobile hydrocarbon quality control stations.

MAG laboratory is based on the same platform as MAG process chromatograph, and this gives the following advantages:

Best compatibility when used in combination

Maintenance conveniences, due to modular structure (module can be replaced in 10 minutes)

Our Priorities:

- Efficiency
- Reliability
- Flexible approach
- Availability

Service and Support:

Our specialists will help you choose equipment suitable for your objectives and provide any services related to installation, maintenance, verification and operation of oil and gas industrial instruments.

For more information about our products please visit our website: www.bacs.ru

MAG gas chromatograph
Laboratory version

Applications

✓ Measuring natural gas components according to ISO 6974.1-6:2012, ASTM D 1945-14, GPA 2261-13, followed by calculation of calorific value, density, compressibility factor and Wobbe index, according to ISO 6976:2016, ASTM D 3588-17, GPA 2172-2002, GPA 2145-16.

Features:

Analysis with C_{6+} backflush in 5 minutes;

Extra components analysis options for natural gas:

- Methanol
- Helium and hydrogen
- Extended hydrocarbon composition analysis, with hydrocarbon concentration temperature calculation

- ✓ Natural gas analysis, with variable and extended composition (using approved measurement methods);
- ✓ Mass concentration measurement for sulfur compounds in natural gas according to ISO 19739:2004, ISO 6326:2007, ASTM D 7493-14 associated petroleum gas and other gas media;
- ✓ Biogas and biomethane analysis;
- ✓ NGL and liquefied petroleum gas analysis, including quality control at LPG separation stations;
- ✓ Organochloride compounds analysis in petroleum;
- ✓ Ethane fraction quality control;
- ✓ Methanol and other oxygenates detection in various hydrocarbon media;
- ✓ Raw material and product quality control at MTBE and TAME production plants;
- ✓ Process plants operation monitoring and commodity goods analysis for olefin (ethylene, propylene, butylene fractions) production;
- ✓ Process flow and commodity product analysis for rubber production, including isoprene production plants;
- ✓ Helium concentrate and HBG analysis;
- ✓ Syngas, coal-derived gas and pyrolysis product analysis.

MAG gas chromatograph
Laboratory version

Detector Types

✓ **Thermal Conductivity Detector (TCD)**

Allows using narrow bore and capillary columns. For quick analysis and low detection limits

✓ **Catalytic Combustion Detector (CCD)**

Precise measurement of combustible substances in low concentration, including hydrogen, hydrocarbons, etc.

✓ **Electrochemical Detector (ED)**

Sulfur compounds analysis, from 0.1 ppm, with only air as carrier gas. Linearity in a broad range and high H_2S and mercaptan selectivity.

✓ **Flame-Ionization Detector (FID)**

Measure low trace concentrations of organic compounds, such as:

- Trace amounts of methane, ethane, acetylene in commodity ethylene;
- Propyne and propadiene concentration in propane-propylene fraction;
- CO and CO_2 trace concentrations in commodity olefins;
- Ortho-, meta- and para-xylene content measurement for aromatic compound production;
- Heavy hydrocarbons (C7-C12) in natural gas.

✓ **Electron Capture Detector (ECD)**

Selective detector for electro-negative compounds, especially halogens. A beta emitter such as radioactive tritium or ^{63}Ni is used to ionize the carrier gas.

Benefits and special features:

Wireless **data transmission** via Wi-fi, Ethernet, RS 232/485, discrete outputs;

Auto mode available for **measurement series** and **calibration**;

Cost-saving due to low power consumption and optimal flow rate of the carrier gas (helium) (~10 ml/min);

Short duration of analysis: natural gas components are analyzed in 5 minutes.

MAG gas chromatograph
Laboratory version

Specifications

Specifications	
Temperature in the installation area, °C	from 5 to 40 °C at atmospheric pressure
Dimensions: L×W×H, mm	262x583x377
Weight, kg	no more than 25
Power voltage	220 (+22 -33) V, frequency (50±1) Hz,
Power consumption	from 180 W (warm-up), 80 W (operation)
Communication interfaces	Ethernet, RS 232/485, Wi-Fi, discrete outputs
Information display and input	LCD 12” and touchscreen (optional)
Number of analytical channpuиels	Up to 4
Thermostat operation mode	Isothermal, from +50 to +170 °C
Detector type	micro-TCD, ED, CCD, FID, ECD
Chromatography columns	Capillary, narrow-bore and packed
Carrier gas	Helium, nitrogen, argon, air, hydrogen
Type and number of carrier gas pressure regulators	Electronic, up to 2 per device
Carrier gas flow rate	4-20 ml/min per channel
Analyzed mixture phase	Gaseous / liquefied gas / liquid
Number of analyzed flows	Up to 6, including calibration mixture
Analysis duration	Depends on the method (up to 6 minutes for CNG up to C6+)

Metrological characteristics				
Parameter	**TCD**	**CCD**	**ED**	**ECD**
Detection limit	2 ppm (hydrocarbon)	0.5 ppm (hydrocarbon)	0.01 ppm (H_2S)	0.005 ppm (CCl_4)
Output signal SD, %	no more than 1	no more than 1	no more than 2	no more than 4
Signal change in 24 hours, %	no more than 3	no more than 3	no more than 4	no more than 5

Customized Solutions

Our specialists can develop an analytical solution specifically for your application. Contact us for additional information.

STF BACS LLC

Contact information:

Address: 443022, Kirova ave 22, Samara, Russia

Phone: +7 (846) 267-38-12 (-13 / -14)

E-mail: info@bacs.ru **Web:** www.bacs.ru