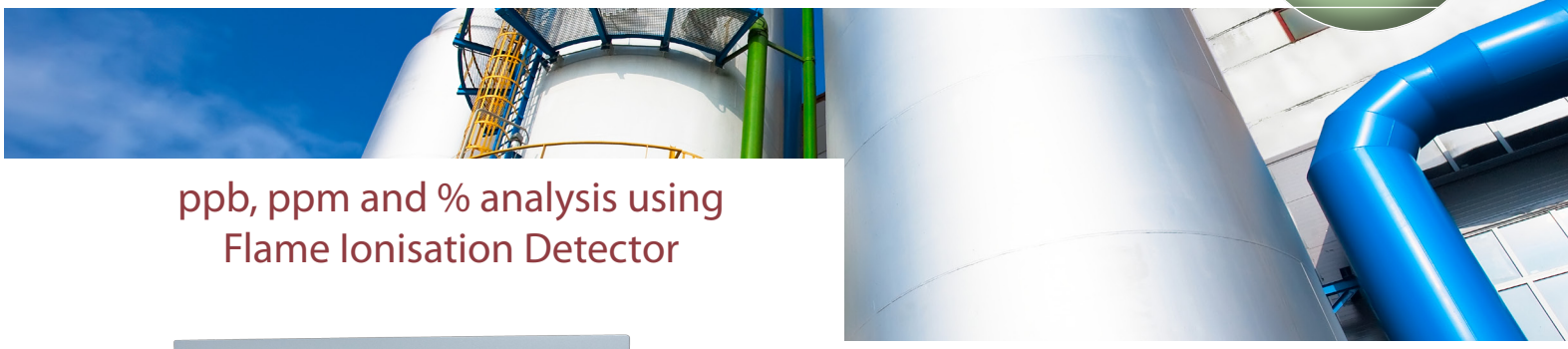
novaSTREAM 6000

FID

Gas Analyser



ppb, ppm and % analysis using Flame Ionisation Detector

The new NovaSTREAM 6000-FID Gas Analyser is based on AGC Instruments' own industry-proven Flame Ionisation Detector (FID). Designed to continuously measure and monitor concentrations of Hydrocarbons in a gas stream, it can also measure CO & CO_2 using a methaniser. It will provide accuracy with long term performance for applications ranging from gas producers to laboratory uses. For ppb applications, the internal cabinet is heated to provide a stable ambient temperature to offset any working temperatures and the Flame Ionisation Detector provides measurements to less than 30 ppb with speed. Using the large colour interactive touch screen, the NovaSTREAM 6000-FID analyser is straightforward to set-up and use with all functionality easily accessible and navigable with minimal training required.

With the integration of Pressure Sensors and voltage free alarm relay contacts, all critical monitoring is automated and provides peace of mind to the operator. Should the flame be extinguished, the analyser will automatically shut off the Sample and Fuel lines to the FID and an alarm will be activated. Further verification is provided by voltage free contacts for switching in calibration gas inputs externally to support the auto-calibration routine. Both Calibration and Alarm records are maintained also with a fall-back option to restore factory settings.

The precise results obtained from this analyser can be transmitted via an array of communication modules such as: Passive 4-20mA (2 off), mV Signal, USB (2 off) and VGA outputs. Active 4-20mA, Ethernet, RS-232 and RS-485 outputs are also available as optional extras. This allows the analyser to be integrated seamlessly into all analytical infrastructures worldwide. The modular design with a drop-down front panel for easy access to the electronics allows for trouble-free maintenance and servicing. It is both cost effective and reliable with a low cost of ownership due to the low gas and power consumption. The AGC Engineering Team will custom design and test an analytical solution to meet your application and all systems are designed with volume optimised pipe work using only 1/8" Swagelok® fittings. Therefore, this robust system ensures an excellent stability, sensitivity and a long working life.

Features

- Flame Ionisation Detector
- Finely-tuned Detector with Minimal Drift
- Highly Sensitive to < 30 ppb
- Fast Detector Response: < 1.5 seconds (T_{90})
- Long Term Stability & Sensitivity
- Large Colour 6.5" LCD Touch Screen
- Fully Automated use with intuitive GUI
- Integrated Configurable Alarms System (7 Alarm Relays) with Alarm Record
- Automatic shutdown of sample & fuel lines if the flame extinguishes
- Integrated Diagnostics System
- Pressure Sensors
- Voltage free contacts for switching in calibration gas inputs externally
- Auto-Calibration Routine with Calibration Record
- Internal storage of results up to 24 months and data trending via PC
- 2 x 4-20mA, 1 x mV Signal, VGA & USB Outputs
- Active 4-20 mA option
- Increased Connectivity with Ethernet, RS-232 and RS-485 options
- Modular System Design & Drop-Down Front Panel for easy maintenance and servicing
- Cost Effective and Reliable
- Economical Power Usage & Gas Consumption
- Restore Factory Settings function for peace of mind

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Gas Chromatography since 1965

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Principle Of Operation

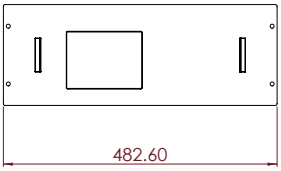
The NovaSTREAM 6000-FID, using AGC's own Flame Ionisation Detector (FID), is used to measure concentrations of hydrocarbons within a sampled gas. The presence of hydrocarbons is detected by burning the sampled gas in an air-hydrogen flame and burning just pure hydrogen with air produces only trace amounts of ionisation. The presence of hydrocarbons in the sampled gas, when burnt with an air-hydrogen mix causes high levels of ionisation. The ionisation occurs as a result of the carbon atoms present in the sampled gas and the level of ionisation is proportional to the number of carbon atoms within the sample which can then be measured.

With a quick start up time and fast detector response, operation of the NovaSTREAM 6000-FID is swift, precise and straightforward. Moreover, the packed columns with their independent column ovens and individual temperature controllers also maintain exceptional stability, accuracy and repeatability. Servicing and maintenance is trouble-free with a drop-down front panel for easy access to the electronic components and our unique column infrastructure, which can regenerate in-situ, providing you with seamless operations. The minimal gas consumption provides an economical platform with a low cost of ownership and long-life span.

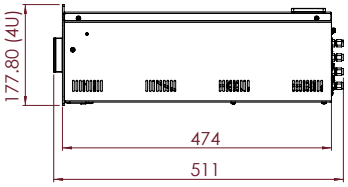
Typical Applications

- THC in H_2 , O_2 , Air , Ar , N_2 , He and CO_2
- Air Separation Units
- Air Liquefaction Plants
- Semiconductor Industry
- Gas Blending Equipment
- Industrial Gas Production Units
- Gas Cylinder Filling Sites
- Compressor Manufacturers
- Chemical Plants
- Refineries
- Adhesive Manufacturing Emissions
- Combustion Engine Efficiency
- Ambient Air Monitoring
- Landfill and Biogas Applications
- Calibration/Quality Control Laboratories

FRONT VIEW



SIDE VIEW



Configurations

6000-23	% Analyser
6000-24	ppm Analyser
6000-25	ppm Analyser with Methaniser for CO/CO_2 (Single Reading)

This analyser system is also available for use in Hazardous Areas Zone 1 or Zone 2. Please contact AGC Instruments for further information.

Benefits

- Continuous Hydrocarbon Monitoring
- Selective to Hydrocarbons only
- Long Term Reliability & Stability even in low ppm ranges
- Approved low detection limit
- Versatile Fuel Mixtures
- Methaniser option to measure CO and CO_2
- Heated version available to analyse Gas Streams where Sample Temperature needs to be maintained at the Operating Temperature.

Specification	
Detector	Flame Ionisation Detector (FID)
Ranges of Detection	0.01 - 20,000 ppm (Higher ranges available upon request)
Analyser Configurations	6000-23 (%)
	6000-24 (ppm)
	6000-25 (ppm with Methaniser for CO/CO_2 (Single Reading))
Resolution	< 0.01 ppm
Linearity	0.01 - 20,000 ppm
Zero Drift	< 30 ppb
Minimum Detectable Level	< 30 ppb
T_{90} Response Time	< 1.5 seconds
Warm up time	1 hour typical
Interface	6.5" Industrial Grade Colour Touch Screen Control
Outputs /	2 x 4-20mA outputs (Isolated)
Communication Modules	1 x mV Signal output
	1 x RS-232
	2 x USB
	VGA
	RS-485 (Modbus/Profibus) *
	Ethernet*
	1 x 4-20mA output (Active) *
Alarms	7 x Voltage Free Alarm Relay Contacts (including one for sample flow)
	Alarm Record
Calibration	Auto-Calibration Routine
	Voltage Free contacts for switching in the calibration gas inputs externally
	Calibration Record
Data / Results	Data Trending via PC connection and 24 months internal storage
Gas Connections	1/8" Swagelok® Fittings
Gas Requirements:	
Fuel Gas	Zero Grade H_2 @ 30 mL/min
Fuel Mix	40/60% mixture @ 75 mL/min
Zero Air	300 mL/min
Sample Gas	0.5 bar (200 kPa) / Sample Flow Monitored by Flow Sensor
Flame Ignition	Stable Flame Ignition Circuit
	If activated, the Flame Out Alarm will automatically shut off the fuel & sample flow
	Flame Arrestors availble for ATEX applications
Operating Temperature	5° to 45° Celsius
Power Supply	100 - 120 VAC / 220 - 240 VAC, 50/60 Hz
Power Consumption	≤ 350 Watts
Dimensions	482 (W) x 511 (D) x 177 (H) - 4U 19" Rack

* Optional Extras - Subject to system design/configuration

Company Profile

AGC Instruments Ltd.

AGC Instruments is a leading manufacturer of Gas Analysis Solutions to all users requiring a Quality Control or identification of their gas stream. We have over 60 years experience in providing our customers with their "Total Gas Analysis Solutions". We work closely with all customers to ensure they obtain the analytical solution that meets their needs and a system that is easy to use and understand. All AGC distributors are extremely experienced and factory trained to the highest standards, offering you a complete after sales support service.

The wide range of Detectors available can be customised to measure unique gas streams and we place an emphasis on the continuous development of our analytical solutions. Our worldwide reach with strategic partners ensures that you have peace of mind and after sales care that are important to your operations.

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Gas Chromatography since 1965

nqa ISO 9001 Registered Quality Management

Aftersales Care

AGC Instruments are committed to providing and maintaining quality systems from customer liaison to technical knowledge through to System Design and Delivery. We believe that our After Sales Support to the customer is one of the most important services we can offer. Each Distributor has been carefully selected and trained to ensure our customers receive the best possible service. Furthermore, online customer support and direct support are available to deliver a comprehensive support package.

NovaSTREAM Applications

Total Hydrocarbons Analysis
% Ar in O_2 Analysis
Trace N_2 in Ar Analysis

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