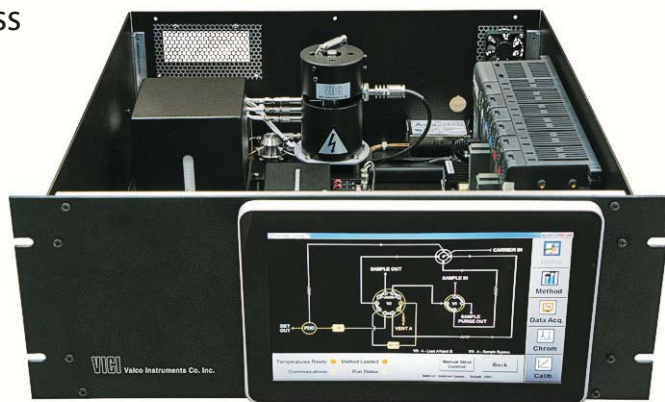


## Trace Gas Analyzer Systems

- Turnkey analyzer for lab, mobile, or process
- MDQs for most analytes < 1 ppb
- Cost-effective stand-alone operation
- Fast temperature programming ovens with ramp rate up to 3000°C/minute
- Highly accessible data
- Flexible modular design



### Turnkey Analyzer

VICI Trace Gas Analyzer Systems (TGAS) are fully configured and tested gas chromatographs designed for use in high purity and ultra high purity analysis. Each instrument is fully configured and tested per user requirements. A full documentation package delivered with each instrument includes a method validation report, capability data, bill of materials, and method parameters.

Market applications include:

- **Semiconductor/UHP/ASU** (H<sub>2</sub>, CO, CH<sub>4</sub>, CO<sub>2</sub>, N<sub>2</sub>O, Ar, N<sub>2</sub>, THC, Kr, Xe, Ne, O<sub>2</sub>, H<sub>2</sub>O, etc.)
- **Petrochemical/natural gas** (C1-C5 [speciated], C6+, BTEX, CO, CO<sub>2</sub>, etc.)
- **University/research** (H<sub>2</sub>, CO, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>O, etc.)

The TGAS can be set up to run automatically, or user-configured for single run analysis. This makes the TGAS an ideal option for benchtop applications in the lab or for continuous duty in a process. With the optional sampling system, the instrument can do batch or individual analysis from a fill manifold or trailer fill stanchion.

### MDQs for Most Analytes < 1 ppb

Currently our conservative guarantee for method detection with a reasonable RSD is 10 ppb for atmospheric components, day-in and day-out. But some of customers find that once the analyzer is installed and running continuously in ultra high purity applications, TGAs are able to routinely integrate and quantify at levels of less than 1 ppb.

### Stand-Alone Operation

The VICI TGAS is a complete stand-alone solution for autonomous chromatographic analysis, from sample prep to final report. Everything is included in the TGAS housing, from the computer with all the necessary software and hardware to the touch-enabled wide screen display. A wireless mouse and keyboard are optional.

The TGAS can be configured to select the sample and associated method, introduce the sample, run the analysis, store the data, integrate the chromatogram, and calculate the results — perfect for remote, continuous, process applications.

### Fast Temperature Programming Ovens

With FTP technology (Fast Temperature Programming) the programmable rate oven becomes much smaller and more efficient in both size and use of power. The FTP technology can also be applied to injectors, transfer lines, valves, methanizers, traps, concentrators, and other zones that may require high rate programmable temperature control.

Up to 4 zones of Fast Temperature Program control can be applied in one TGA. Columns can be micropacked, metal open tubular, or capillary fused silica. Ramp rates up to 3000°C/min allow for increased sample throughput and/or more effective clear down of heavy components, drastically reducing overall sample run times.

## Highly Accessible Data

Results data can be printed via a network printer or to a local user-provided printer. The same results can be output to an analog signal for DCS and other control schemes, or to the OPC server for database or spreadsheet updates. Functionality for copper-based LAN connection and secured WIFI make the instrument available and data accessible.

Data can be accessed in a variety of ways, such as Analog 4-20 mA loop, OPC, Profibus, Modbus, or other network communication protocols. Options can be configured at the factory or by the end user to handle a wide range of data access requirements where full remote control and operation is required.

## Modular Design

The design of the TGAS allows a very wide range of applications to be run on a single instrument. A detector module can be configured with application-specific detectors.

The standard modules are:

- **Detectors:** PHID, PDPID, PDECD, FID, MicroTCD, and RGD
- **Oven/Temperature Zones:** Support for 12 programmable thermal zones and up to four Fast Temperature Programmed (FTP) zones. FTP zones can be micropacked columns, metal open tubular columns, capillary columns, programmable rate injectors, vaporizers, retention gap, or absorbers/concentrators.
- **Valve Controls:** Support for up to 16 two position, four multiposition, and 32 diaphragm valves.

In addition to the wide dynamic range and low level sensitivity, the TGAS can be configured for redundancy so that there is always a hot backup for any two channel method. Or, two channels can be configured for one or more gas method(s), with the other two channels available for an entirely different method or gas type. There are lots of possibilities with the modular design.

Additional specifications	TGAS-4U	TGAS-7U
Dimensions*	17"W x 17"L x 7"H	17"W x 22"L x 12.25"H
Weight	30 lbs	45 lbs
Max. number of detectors	2	4
Carrier gas	Purified helium Detector and sample gas dependent	
Carrier gas flow rate	~100 ml/min per detector, regulated @ 80 psig	
Actuator gas	Helium or instrument air regulated @ 60 psig	
Electrical requirement	100-120 VAC or 220-240 VAC, 50/60 Hz	

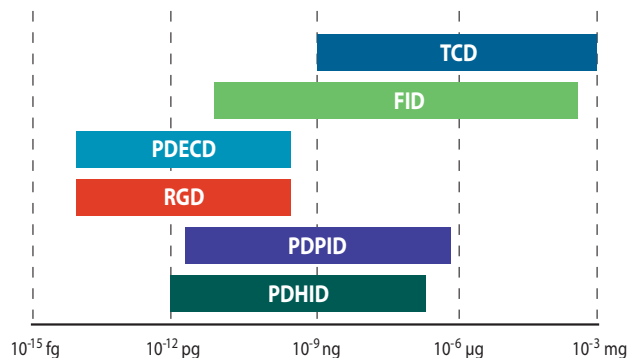
\* Both models are rack mount compatible

## Unparalleled VICI Expertise

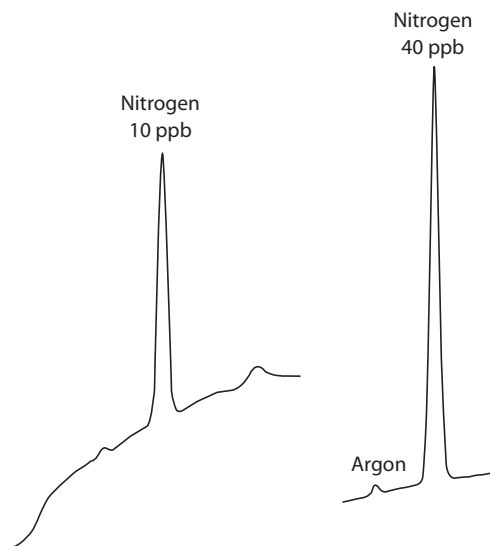
While the TGAS embodies the latest improvements in the VICI Trace Gas Analyzer product line, we have been a standard for analysis in the pure gas industry for more than 35 years. We continue to be the primary manufacturer of every major component in our systems, from valves and detectors to electrometers and Fast Temperature Programmers. We know that specifications and requirements in high purity gas supply are getting tougher, and are continuously working to improve the core products which have kept the TGA in demand over the decades.

For more information, please provide a detailed list of the requirements for your application. We will work diligently to prepare a quote in a timely fashion.

### Linear dynamic range of TGA detector options



### Nitrogen in oxygen



North America, South America, and Australia/Oceania call:

**VICI Valco Instruments Co. Inc.**

Europe, Asia, and Africa call:

**VICI VICI AG International**

Rev 2/17

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