

## S10 TGA-GCMS Interface Sample Storage Device for TGA-GC/MS

The S16 (Sample Storage Device), a dedicated sample injection device for the thermogravimetry- gas chromatography - mass spectrometry (TG- GC- MS) system, is used to assist customers in automatically and continuously analyzing the concentration changes of gas components during the thermogravimetric reaction process.

In traditional TG- GC- MS systems, user usually provide a simple connection and thermal insulation device to connect the vent gas of the TGA to the inlet of the GC/MSD. For each run in the TGA, users can only take one sample and inject it into the GC/MSD for separation and qualitative (or quantitative) analysis. During the heating process of the TGA, the weight loss often ends within a very short time (e.g., 2- 3 minutes), which is much shorter than the analysis time of the sample in the GC- MS system. By the time the GC- MS analysis is completed, the weight- loss process of the TGA is usually already over, making it impossible to conduct a second sample analysis.

However, the new- generation S16 dedicated injection device can provide up to 16 sample storage loops. According to the customer's requirements, it can automatically trap the sample gas in the quantitative loops and then sequentially introduce the previously stored samples into the GC- MS system for relevant analysis. The sampling time of the quantitative loops can also be set via software. Users can determine the gas- sampling time for each quantitative loop according to the TGA heating program or directly define the sampling intervals for the 16 quantitative loops. The component concentration curve of the sample can be exported through the chromatograph workstation.

The S10 is internally integrated with a gas sampling valve (GSV). There is no need to configure a gas sampling valve at the GC end. The GSV directly introduces the sample into the S/SL inlet of the GC through a 1/32" inert stainless- steel tube inserted into the injection port. Users do not need to make any modifications to the injection port. The S16 is equipped with a fixing bracket compatible with mainstream GC- MS systems to fix the gas- path tubes of the device. All valves and sample loops are heated, and the temperature can be configured via software. All sample tubes are inert treated to prevent sample adsorption. The default maximum temperature of the valve box is 300 degC.



Dimensions 470mmH x 230mmW x 430mmL

Weight: 25 kg

Typical Application: Interface for TGA - GC/MSD, FTIR

Medium Type: Gas

Bypass Connection to Infrared Analyzer: Supported

### Basic Parameters

Maximum temperature of the valve box: 330°C

Temperature accuracy of the valve box: ±0.1°C

Sample quantitative loops: 8, 10, 12, 16 (standard configuration)

Sampling valves: 3 (sampling valve, injection valve, isolation valve, Vici)

Volume of quantitative loops: 250uL (optional 500uL, 1mL, etc.)

Sample transfer line: Inert treated

Max temp. of the sample transfer line: 330°C

Electrical: 220Vac, 5 amperes

Carrier gas: Air@4bar

Leakage rate: Less than 1x10<sup>-8</sup>atm - cc/sec He

### Connections

Electrical: Direct I/O (for GC and TGA)

Control: Directly controlled via browser

Method setting: Directly edited on the GC interface/Software in PC

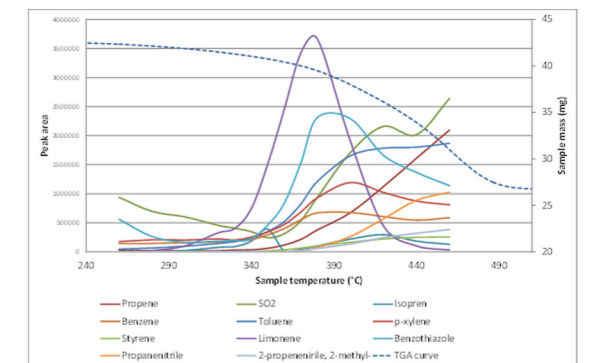
Connector size and type: 1/8" (swagelok)

### Communication and Control Software

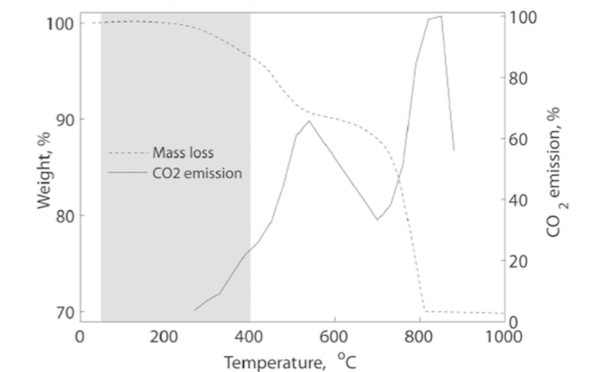
External: TCP/IP, RS485, RS232

Touch - screen size: 7"

PC control software compatibility: All Windows series, Linux, etc.



Components trend during analysis of rubber thermal weight loss



Record weight-loss & concentration curves in geophysical analysis



System for TGA-GC/MS based on the GC60 (with an infrared interface pre - reserved)