

Application Note

Ion Mobility Spectrometer as OEM-Detector Module



Figure 1: G.A.S. mbH stand alone module

Advantages

- Sensitive: Detection limits in the low ppb_ν (µg/m³) range for VOCs with heteroatoms like ketones, aldehyds, alcohols, amins or halogenated compounds.
- Selective due to specific analyte ion drift times.
- Flexible: Generates positive and negative ions.
- No licence for H3 source required according to EU directive 29/96 EURATOM.
- High reproducibility < 3 % for peak intensity and < 1 % for drift times
- Operation with nitrogen or synthetic air
- Works at ambient pressure
- Compact
- Free of maintenance
- Stand alone data aquisition software and software suite for 3D GC-IMS data analysis

The stand alone plug-and-play IMS detector as OEM module by G.A.S. mbH enables different use of the technology according individual application to requirements. Besides the advantage of costs compared reasonable to fully equipped IMS instruments, this modular set-up allows to configure the analytical system around according to customer's needs. The OEM module can be coupled to standard GC systems or the user can alternatively use a membrane inlet system or even thermo desorption unit like SPME or needle trap.

Samples are ionized by using a tritium source with an intensity below the excemption limits of the EU directive 29/96 EURATOM. Power input is 24 V DC and digital USB 2.0 high speed digital interface is used for output.

Introduction of the sample is realized by using a 1/16" sample line. The device can be heated up to 100 °C and has a resolution of ~ 100. Parameters of the IMS module are controlled by an external software.





Technical Specification

DC Input: 24V DC + 10%, 24W DC + 10%, 25W DC + 10%, 25W DC + 10%, 25W DC + 10%, 24W DC + 10%,	Electrical		Application Note
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30 W (heated IMS) Signal output: Analog conditioned sensor Signal (Range +-10 V) TTL Trigger Output for synchronisation or USB 2.0 High Speed digital interface 14 bit, 150 kS/s Bulk dastream (up to 400 kS/s optional) (TTL compatible inputs for mode selection optional) Temperature controller (optional): 2 Channel PI Controller for PT100 up to 100°C ++0.1 K accuracy +-1 K display accuracy Gas connections 3 mm or 1/8* Swagelok (Other connectors available on request) Sample In: 3 mm or 1/8* Swagelok (Other connectors available on request) Sample In: 0.75 mm inner diameter PEEK tubing (1/16* Swagelok optional) Full OEM demo kit (height x width x depth) 120 x 140 x 224 mm (Note: need to place high voltage supply of PCB outside the kit) Ms 3H bound in metal, <500 MBg 8-emission Licence: Not required in as in directive 96/29/ EURATOM countries (<1GBq)	Domput		12 W (unheated IMS)
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others on request) Demo software System requirements: Uindows XP or Windows 7 1 High Speed USB2.0 port Data: CyfroceSeiseglacitha@.f&irSanalytische Sensorsysteme mbH Otto-Hahn-Str. 15, 44227 Dortmund, Germany Laboratory Analytical Viewer (LAV) Teloftwd@r@Stu@F42 6550 Mail: info@GAS-Dortmund de Web: www GAS-Dortmund de	Detection limits:		Typically low ppby (Hexanone positive mode < 1 ppb -
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