

Building Protection - Ion Mobility Spectrometer



**Detection of Chemical Warfare Agents (CWAs),
Toxic Industrial Chemicals (TICs)
and Explosives (TATP)**

Advanced building and air condition protection are more important than ever!



Tokyo Subway

In 1995 the Sarin nerve agent attack on Tokyo's subway caused the death of 12 people and more than 5,000 got wounded.

Since then, with the beginning of the new millennium, terrorism has risen to another height with many attacks on buildings, trains and public places world-wide.

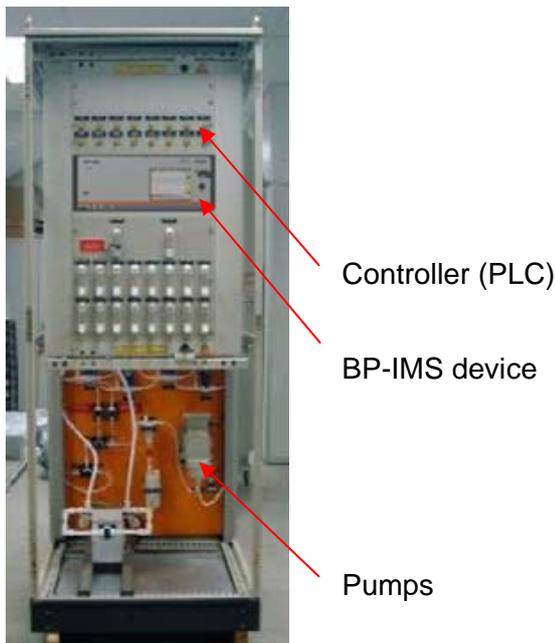
The recent attacks show, that the response time of an effective protection system must be very short to evacuate people safely.

The Building Protection-Ion Mobility Spectrometer (BP-IMS) is an ultra-fast and high sensitive gas detection system for the protection against terrorist attacks where Chemical Warfare Agents (CWAs), Toxic Industrial Chemicals (TICs) or Explosives (TATP) are be involved.

Sarin (CWA)	N-Mustard (CWA)	HCl (TIC)
Tabun (CWA)	S-Mustard (CWA)	HCN (TIC)
Soman (CWA)	Lewisite (CWA)	Phosgene (TIC)
VX (CWA)	Chlorine (TIC)	TATP (Explosives)

Integration of the BP-IMS into your Security System

Through the availability of multiple interfaces it is easily possible to integrate the BP-IMS into different types of building management systems.



Floor Mounted Cabinet



Control Center

Next Generation's BP-IMS offers several Advantages

- **Facility protection**
 - Continuous protection 24/7/365
 - Very high sensitivity in the lower ppb_v-range
- **Detection of CWAs and TICs**
 - Custom tailored detection list
 - Tracks variants of traditional CWAs
 - Monitors concentration levels of TICs
- **Reduces cost of ownership**
 - Positive and negative polarities allow a dramatic cost reduction for comprehensive facility monitoring
 - No carrier gas required
 - Low-cost preventive maintenance concepts (self-check routines)
 - Automatic steering: Data acquisition, event and alarm logs
- **Easy system integration**
 - Fits into standard 19" rack system
 - Easy interface into facility management systems
 - Flexibility: Supported by digital, analogue or relay outputs

Reference:

Since 1998 the air condition system of the "Reichstag", the German Parliament, is equipped with IMS-systems for the monitoring of Chemical Warfare Agents (CWAs) and other toxic gases (TICs).



Technical Specifications BP-IMS

The BP-IMS system is a full-automatic trace gas analyser based on Ion-Mobility-Spectrometry (IMS) with very high sensitivity in the lower ppb_v-range.

The BP-IMS is designed as a stand-alone and portable device with a tandem IMS and two closed gas-circuit systems.

Both gas-circuits are equipped with an automatically working valve system.

Sampling through integrated pumps into both detectors, flow rate up to 2,000 ml/min.

Simultaneous detection in positive and negative polarity.

Separate temperature control for both ion mobility spectrometers (default 45°C).

Manual or full-automatic operation mode with data acquisition, -analysis, -visualisation and -transfer to external devices.

Full running time per measuring cycle is less than 5 seconds.

Storage of data in internal memory.

Detection and quantification of more than 12 substances (default).

Working principle	Ion Mobility Spectrometry (IMS)
Ionisation method	Radioactive β-radiation
Sources	Tritium (³ H)
Activity	2 times 300 MBq, hence below exemption limit of 1 GBq acc. to the EURATOM guideline
Drift voltage polarity	Positive and negative simultaneously
Sampling	Electrical 6-Port-Valve
Detection limits	Typically in low ppb _v -range
Dynamic range	Typically 1-3 order of magnitude
Display	6.4" TFT, VGA-Display
Input unit	Rotary pulse encoder, ESC- push-button
Processor	400 MHz x-Scale
Data acquisition	Ultra-fast ADIO-Board
Data processing	X-Board / Baseboard
Data storage	Minimum 1 GB Compact-Flash
Communications	RS232, USB, Ethernet
Electrical connectors	2 x D-Sub 9-pole (for modem and console) D-Sub 15-pole (for external devices) RJ45 (for digital modem or SSH) 2 x USB-A
Power supply	100-240 V AC, 50-60 Hz (external) 24 V DC / 5 A, (internal)
Power consumption	< 120 Watt
Dimensions	449 x 375 x 177 mm (WxDxH)
Weight	15.5 kg
Housing	19" compatible, IP 20 enclosure, EMC
Cooling	Axial ventilator, temperature controlled, max. 5.5 m ³ /h
Gas connectors	3 mm stainless steel Swagelok connectors for sample in and out

For further information about the BP-IMS as well as about building protection in general please contact: