	GDA2	AIRSENSE ANALYTICS
Application	Use of GDA II for the detection of fumigants	WM / MS Date: 2008-03-27 Mod.:

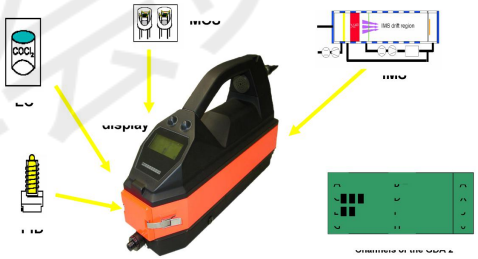
Fumigants are used to kill all kinds of life stock in containers before shipment across borders. When containers are opened the first time after shipment, there is a certain risk of being exposed to hazardous concentrations of these fumigants in the container. Thus causing danger for the personnel of the customs and border control departments as well any other people forced to work with and in containers.

The GDA 2

The Hazardous Gas Detector Array GDA II is a direct reading portable detector that has a variety of features dedicated to portable and emergency applications.

With its hybrid sensor array the GDA II achieves a very broad coverage of many different volatile compounds. It ranges from very light inorganic gases (HF, Chlorine, Phosphine) to mid volatile organic vapours. The ability to detect a huge range of compounds within the ranges of interesting, dangerous concentration in combination with a 3 seconds response time makes it capable for personnel protection as well as various supervising tasks when quick information is required.

Technical features of the GDA II



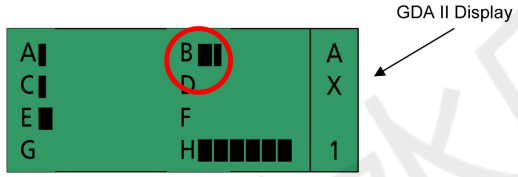
- Components are detected in the lower ppb range up to high ppm level due to its dynamic ranging capability
- Continuous measurements possible – means safety for customs authorities and harbour workers before and due to entering the containers
- Robustly portable and battery operated detection device – can be operated by one person
- quick response - unspecific response within 3s – more accurate results are given within 8s
- data logging system available

名称：北京盈盛恒泰科技有限责任公司
地址：北京市西城区广安门外大街168号朗琴国际大厦B座603室
电话：010-83993592　　传真：010-83993562
网址：www.ensoultech.com E-mail: sales@ensoultech.com

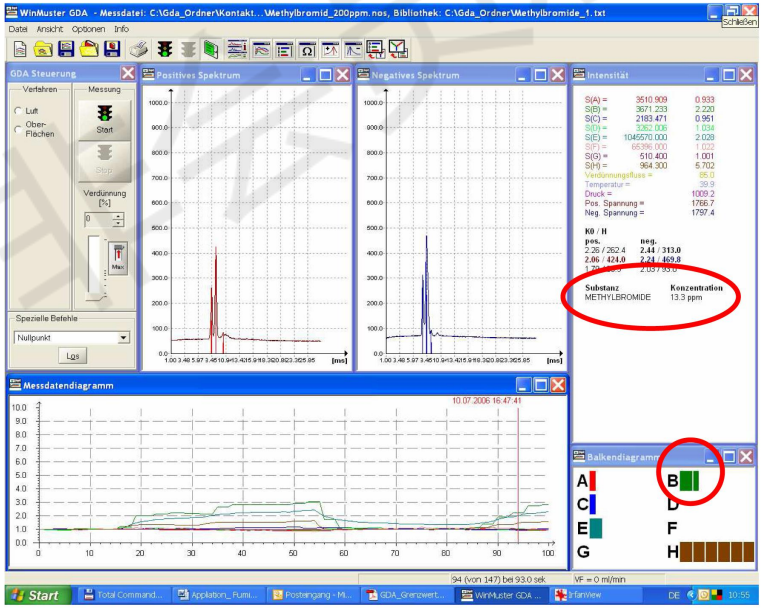
Output

The GDA II is mainly used as portable battery operated detection device by harbour workers and customs authorities. Before entering the containers a measurement is performed in order to find out if containers are contaminated inside by fumigants. Measurements carried out by harbour workers only take seconds in order to avoid delay in clearance. The results displayed due to the measurement process provide information about the level of danger caused by the gas composition in the container before opening.

Output for Methylbromide:



Software Win Muster GDA II (a full measurement is performed in the background, not all information are shown on instrument's display).



Best way in practise is to pay attention to the different channels. For that to following recommendation has been released which is already used by the customs authorities in Hamburg successfully.

Channel GDA II	(examples) Dangerous Goods	Formula	(Channel) Limit value	(Channel) Degassing	LOD ppm
A	Ammonia	NH_3	0.5	1	
B	Methylbromide Chloropikrine Chloroform Hydrogen Cyanide 1,2 – Dichloro ethane	CH_3Br $CCINO_2$ $CHCl_3$ HCN $C_2H_4Cl_2$	0.5	1	0,1 1 0,2 2
C	Ethylenoxide	C_2H_4O			0,5
D	Carbon Disulfide	CS_2	4	4.5	0,1
E	Formaldehyde	H_2CO			0,5
F					
G	Phosphane	PH_3	0.5	1	0,1
H	Benzene	C_6H_6	5.0	5.5	1

Container does not need to be entered by customs authorities if displayed values are exceeded.

After testing a GDA II for 1‘“ˆ year at the Customs in Hamburg a new GDA II system was bought in January 2008. The GDA II is used to provide safety for the customs authorities against harmful components in containers before entering them. Until February 26th 2008 150 containers have been measured before entered by the customs authorities. Measurements are performed from outside the container by using a sampling tube made from steel which is connected to the GDA II gas inlet and entered between the container doors. In the last weeks 6 containers had to be investigated by the GDA II. The results have been compared with a GC/MS system. All results given by the GDA II have been confirmed as correct results. The entire report may be provided on request.

The most advantage of the GDA II is the capability to perform measurements continuously meaning safety for all before entering or due to being inside the containers, said customs authorities in Hamburg.

名称:北京盈盛恒泰科技有限责任公司
地址:北京市西城区广安门外大街168号朗琴国际大厦B座603室
电话:010-83993592 传真:010-83993562
网址:www.ensoultech.com E-mail: sales@ensoultech.com