

# Application Article 209

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## TVOC installed for Confined Space Entry at Process Analyser Houses

**Product:** TVOC

**Application:** Detection of Vinyl Chloride (VCM) at Analyser Houses

**Customer:** Solvay, Belgium

### Introduction

Solvay have a number of Analyser Houses with on line GC monitors analysing process streams. TVOC provides ongoing, continuous monitoring of air quality inside the Analyser House detecting possible leaks from the GC monitors or surrounding pipe work. The 4-20mA output triggers an audible and visual alarm giving a warning indication averting workers from entering the confined space. TVOC has reduced the need to issue a permit for entry reducing manpower, in turn generating long-term cost savings.



Ideal for this type of application, TVOC provides ATEX approved fail- safe operation and an easy interface for Solvay's Analyser House monitoring system. In addition TVOC is simple to install and maintain with no pumps to service and offers low power consumption.

TVOC is the first intrinsically safe, fixed photoionisation detector (PID) of its kind for continuous detection and measurement of total volatile organic compounds (VOCs). With extended detection range for low-level monitoring, TVOC is now capable of detecting and measuring total VOCs with an additional range of 0-10 ppm.

Designed for fixed continuous monitoring of total VOCs, TVOC is now user selectable in choice of three detection ranges; 0 – 10 ppm, 0 – 100 ppm and 0 – 1,000 ppm\*. With an intelligent 4-20 mA analog output, TVOC can be simply integrated into a control system to give warning of high VOC levels in the working environment.

TVOC utilises a diffusive sample technique resulting in less contamination issues compared to pumped systems, reducing lamp cleaning and servicing requirements. Thanks to its Intrinsic Safety, TVOC can be installed and operated without the need for an explosion proof enclosure.

An ideal tool for use in manufacturing and process industries, TVOC is simple to install, service and calibrate with the PID sensor accessible in a matter of seconds.

Like all Ion Science PIDs, TVOC incorporates Ion Science patented Fence Electrode Technology; a unique three electrode format enabling increased resistance to both humidity and contamination.

### Applications include:

- Manufacturing
- Processing
- Refineries and petrochemical • Offshore
- Chemical
- Waste water treatment
- Pharmaceutical
- Indoor air quality
- Pulp and paper

- Solvent recovery systems
- Industrial painting and coating

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**Features:**

- Patented Fence Electrode Technology for high sensitivity, humidity and contamination resistant operation
- Intrinsically Safe for use in hazardous areas - no need for explosion proof enclosure
- Selectable detection range of 0 – 10 ppm, 0 – 100 ppm or 0 – 1000 ppm
- Diffusive monitoring - no pump required
- Scaled 4-20 mA analogue output • Operates at 5 to 28V
- -20 to 50 °C operating temperature
- LED and 4-20 mA output fault indication
- Includes a 10.6 eV lamp
- Digital numerical display
- Easy access PID sensor allows simple servicing • Simple calibration procedure

*\* Measurement ranges stated are based on Isobutylene*

For more information contact Ion Science:

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