

# The world's first intrinsically safe fixed PID gas detector

For continuous monitoring of volatile organic  
compounds (VOCs)



TVOC has been designed for fixed continuous monitoring and is ideal for use in manufacturing and process industries where VOCs are typically present.

Applications include:

- **Pharmaceutical industry**
- **Chemical industry**
- **Indoor air quality**
- **Refineries and petrochemical plants**
- **Solvent recovery systems**
- **Waste water treatment plants**
- **Offshore**
- **Pulp and paper industry**
- **Industrial painting and coating**

TVOC is registered in the U.K. Patent and Trademark Office

# TVOC<sup>®</sup>

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## Technical Specification

### SENSOR (PID)

10.6 eV lamp with Ion Science patented Fence Electrode technology\*

### INTRINSICALLY SAFE APPROVALS

Ⓔ II 2 G EEx ia IIC T4 (-20 °C ≤ Ta ≤ 50 °C)  
IECEX BAS 06.0057 (world standard)

### INGRESS PROTECTION RATING

IP65 – dependent on cable glands fitted  
Sensor – IP54

### POWER

5-28 VDC Max 65 mA

### OUTPUT

4-20 mA (requires a 8-35 VDC power supply)  
For IS requirements 8-30 VDC power supply

### RANGE

0.1–100 ppm  
1–1,000 ppm  
User selectable

### SAMPLING

Diffusion (can be pumped if required using an adaptor)

### DISPLAY

7 segment, 4 digit LCD, 4 color LEDs

### RESPONSE

Sensor – T90 < 5 sec  
Detector – 1 minute as standard\*\*

### ACCURACY

0-100 ppm ± 2%  
100 – 1,000 ± 5%

### LINEARITY

0-100 ppm > 98%

### CALIBRATION

Magnetically accessed  
100 ppm Isobutylene via calibration kit accessory

### TEMPERATURE

Operating: -20 – 50 °C (-4 – 122 °F)  
Humidity: 0-95% RH (non condensing)

### WEIGHT & DIMENSIONS

Instrument: 1.3 kg (2.9 lb)  
Packed: 1.47 kg (3.2 lb)  
Dimensions: 120 x 160 x 70 mm (4.7 x 6.3 x 2.8")

**NB: All specifications are against an isobutylene calibration at 20 °C, 90% RH and up to 100 ppm.**

\* The Fence Electrode technology referred to in this document is produced by Ion Science Ltd, and protected by patents. U.S. Patent No. 7,046,012. EP 1474681, other patents pending.

\*\* TVOC has a variable duty cycle set to 1 minute as standard. The user can adjust this to between 5 seconds and 5 minutes.

ION SCIENCE is  
ISO9001:2000 certified



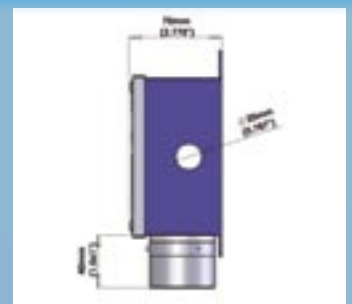
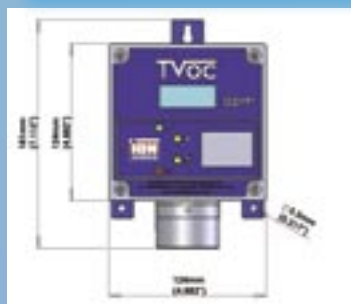
TVOC is a fixed, continuous monitor for the detection and measurement of total volatile organic compounds (VOCs). It is ideal for use in manufacturing and process industries where VOCs are typically present. With a 4-20 mA analogue output TVOC can be integrated into a DCS control system to give warning or control of high VOC levels in the working environment.

TVOC has been designed to be simple to install, service and calibrate. TVOC is the first fixed photoionisation detector (PID) that is intrinsically safe, this means there is no need for an expensive explosion proof enclosure. It also allows for simple servicing with no hot work permit and the PID sensor is accessible and changeable in a matter of seconds.

TVOC uses a diffusive sample technique resulting in less contamination issues compared to pumped systems, reducing lamp cleaning and servicing requirements.

### Key features include:

- Humidity Resistant PID
- Diffusive monitoring – no pump required
- Selectable detection range of 0 – 100 ppm or 0 – 1000 ppm
- Scaled 4-20 mA analogue output
- Includes a 10.6 eV lamp
- Detector life extended using patent pending feature
- Intrinsically Safe for use in hazardous areas
- Easy access PID sensor for very simple servicing
- Digital numerical display
- Simple calibration procedure
- Operates at 5 to 28V
- -20 – 50 °C operating temperature
- LED and 4-20 mA output fault indication



Instrument dimensions

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