



TVOC

**Intrinsically Safe,
Fixed PID for
Continuous VOC
Monitoring**



Designed for fixed continuous monitoring **TVOC** is ideal for use in manufacturing and process industries where VOCs are typically present.



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 28 V
- -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

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

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 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.

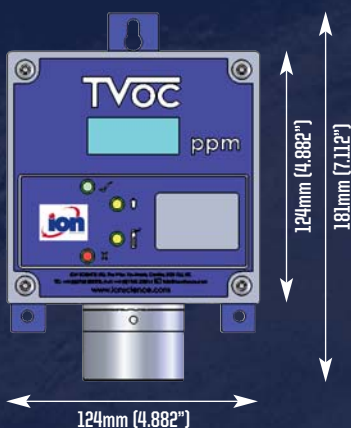
TVOC utilises a diffusive sample technique resulting in less contamination issues compared to pumped systems, reducing lamp cleaning and servicing requirements. Simple to install, service and calibrate, **TVOC** requires no hot work permit and the PID sensor is accessible and changeable in a matter of seconds.

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

Accessories

Ion Science provide an exclusive range of **TVOC** accessories. Contact Ion Science for more information.



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 pending

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 to 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.

Part number TVOC1.2. This publication is not intended to form the basis of a contract and specifications can change without notice.



ION SCIENCE is ISO9001:2000 certified
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TVOC Accessories Explained

Shawcity Ltd's TVOC instrument has a number of accessories available to complement it. Please see below an explanation of what is included with a standard TVOC product, along with an explanation of each accessory and its use.

TVOC part number
TV0SXBMX-X

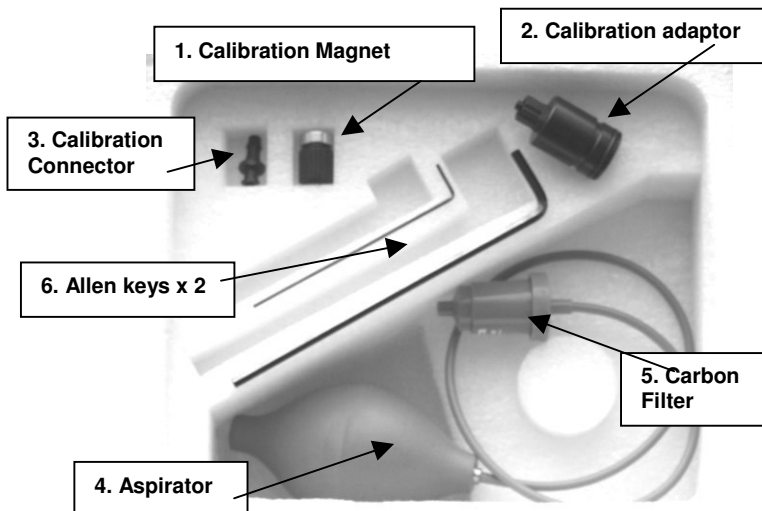
As standard TVOC is supplied as you see here, just the instrument with a user manual.



We recommend that a TVOC calibration tool kit is supplied with every installation – not necessarily every instrument. Please see the picture below of the TVOC Calibration tool kit part number A-849214

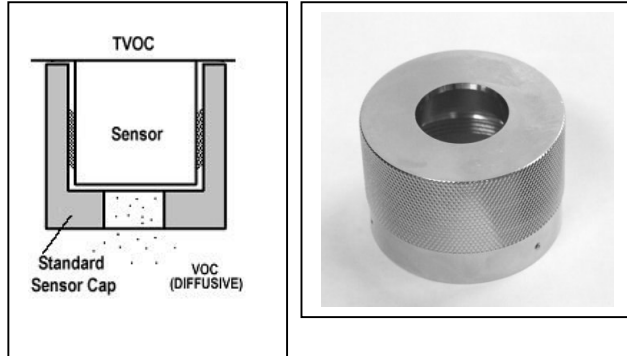
1. Calibration magnet – used to activate the magnetic reed switch in TVOC to navigate the internal menu and calibration set up.
2. Calibration adaptor – to be inserted into the sensor cap when performing a calibration on TVOC.
3. Calibration connector – to be used during calibration when setting the instruments gas tolerance.
4. Aspirator – to be used during calibration when setting the instruments zero.
5. Carbon filter – again to be used during calibration when setting the zero.
6. Allen keys – used to remove the sensor cap and the front panel during set up.

Please see the TVOC manual for full instructions on how to calibrate and maintain a TVOC.



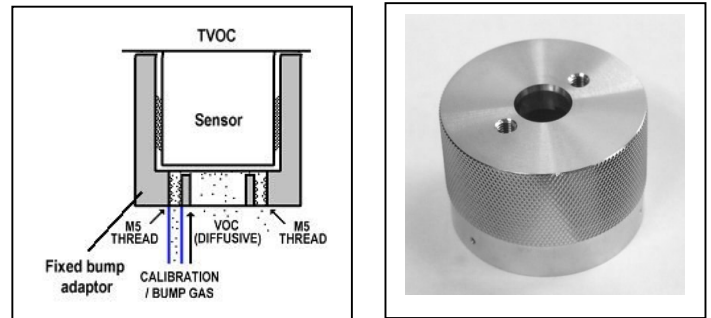
For various applications TVOC has two additional sensor caps available to order.

The standard cap that is always supplied looks as follows

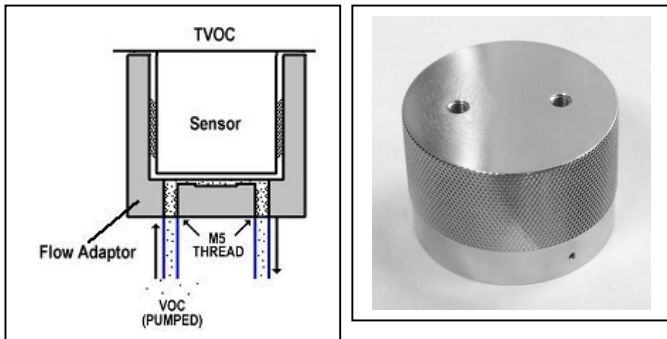


The standard cap is used for diffusive monitoring.

If a unit is to be placed in an inaccessible or difficult to reach location TVOC can be fitted with a Fixed bump adaptor, part number 849217 to enable remote bump testing. This enables the unit to work as a diffusive instrument but allows a bump gas to be applied. This again would replace the standard sensor cap and looks as follows:



If a unit is required to detect a pumped sample you will need to purchase a Flow adaptor Part number 849218. This replaces the standard sensor cap and looks as follows:



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