# TITAN 2

Monitor and sample benzene with world-leading benzene detection technology






ATEX, IECEx and QPS approved

Clear display & visual alarms for indication of benzene levels

Internal data storage, can be downloaded for analysis

Modular design for ease of installation and servicing

Internally regulated heating for stable operation at extreme temperatures

4-20 mA & RS485 communication options

Samples gas once per minute

## Pioneering Technology

Titan 2 offers a world-leading solution for the detection of benzene, capable of gas speciation and accurately detecting benzene down to as low as 0.02 ppm (20 ppb) and as high as 20 ppm within a span of 60 seconds. Titan 2 is designed to sample airborne hazards for the safety of your workforce on site. It can also be used to assess the performance of purification or vapour recovery systems/units (VRU).

This device incorporates the MiniPID T2 10.0 eV which offers improved sensitivity, reliability and overall performance. The unique sampling method eliminates interfering gases such as toluene, xylene and methane providing you with accurate benzene concentration readings you can rely on.

Titan 2 is certified for use in ATEX zoned locations and environments, additionally, the enclosure is IP65 rated which provides protection against dust and water ingress. This allows the detection module to remain operational even in challenging conditions or areas with high levels of dust and humidity.

## Key Features

- **MiniPID T2 10.0 eV Sensor**
  Unique to Titan 2, MiniPID T2 10.0 eV delivers the results that you can rely on.
- **Low Detection Limit**
  Can detect benzene down to 0.02 parts per million (20 parts per billion).
- **IP65 Ingress Protection**
  Protection against a range of atmospheric conditions.
- **Interchangeable Service Module**
  The service module can be removed and replaced as a remotely serviceable module.
- **4-20 mA and RS485 Modbus (ASCII or RTU) Communication Options**
  4-20 mA and RS485 capabilities allow you to connect to your own control system.
- **Piezoelectric Micro Pump**
  The piezoelectric micro pump combines silent operation with millisecond response and high precision.




## Impressive Modular Design

Titan 2 is designed to be easily installed and serviced. Its modular design allows the Ex d case to be installed well in advance of commissioning. The service module can be removed and replaced as a remotely serviceable plug-and-play cartridge minimising instrument downtime.

## 2 Year Extended Warranty Available

Titan 2 monitors can be registered online which extends the warranty of your instrument up to 2 years.

## Industrial Environments

Benzene is a highly toxic and carcinogenic chemical that can cause both short-term and long-term effects on workers who are exposed to it. The most significant health risk associated with long-term benzene exposure is the development of leukaemia, specifically acute myeloid leukaemia (AML). Titan 2 delivers unrivalled accuracy and sensitivity in benzene detection and is ideal for use in a variety of sectors such as oil and gas, bulk storage facilities, chemical manufacturing and processing and asphalt production.


Pioneering Gas Sensing Technology. ionscience.com

## Common Applications

- Oil & gas
- Bulk storage facilities
- Chemical manufacturing and processing
- Asphalt production



## Spares & Accessories



### Micro SD Card (2GB)

Replacement 2 GB microSD card for storing Titan 2 data.

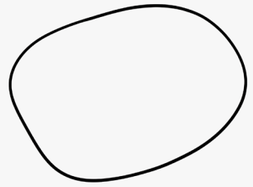
P/N A-924222



### Titan 2 Rapid-Fit Tube Joint (8/6 Tube, 1/4 in BSPP)

Rapid-fit tube connector for the Titan 2 sample system.

P/N 5/JRC-01



### Titan Enclosure Lid O-Ring

Replacement O-ring for maintaining the seal around the Titan 2 enclosure lid.

P/N 875404



### Titan Actuation Magnet Assembly

Replacement actuation magnet assembly for operating the Titan 2 enclosure controls.

P/N A-875265



### Hydrophobic Filter

Replacement hydrophobic filter that helps prevent moisture entering the Titan 2 sample path.

P/N A-875417

## Technical Specifications

| | | | |
|---|---|---|---|
| **Sensor Type** | MiniPID T2 10.0 eV Sensor | | |
| **Selectivity** | Benzene specific within typical petrochemical matrix | | |
| **Detectable Range** | 0.02 ppm to 20 ppm | | |
| **Measuring Frequency** | One minute | | |
| **Lower Limit of Detection** | 0.02 ppm (20 ppb) (10 ppb resolution) | | |
| **Accuracy** | ± 50 ppb or ± 10%, whichever is greater* | | |
| **Temperature Stability** | Internally heated | | |
| **Flow Rate** | Sample flow rate ≥ 100 ml/min | | |
| **Display** | Graphical monochrome LCD (64 x 128 pixels) with backlight<br>Bright LEDs for normal operation, fault and alarm<br>Two magnetic switches for menu operation | | |
| **Operating Temperature** | Recommended operating range of -20 °C to +50 °C (-4 °F to +122 °F) for optimum performance** | | |
| **Approvals** | FTZU 14 ATEX 0172X<br>Ⓔx II 2G Ex db IIB+H2 T4 Gb<br>Tamb. = -20 °C to +55 °C | IECEx FTZU 14.0030X<br>Ex db IIB+H2 T4 Gb<br>Tamb. = -20 °C to +55 °C | QPS LR1621-1<br>Ex db IIB+H2 T4 Gb<br>AEx db IIB+H2 T4 Gb<br>Ta = -20 °C to +55 °C |
| **Ingress Protection Rating** | IP65 | | |
| **Humidity** | 0 - 99% RH (non-condensing) | | |
| **Minimum Service Period** | 6 months – PID lamp, electrode stack, inline filter, VRV restrictor, hydrophobic & carbon filter<br>12 months – PID lamp, electrode stack, inline filter, VRV restrictor, hydrophobic & carbon filter and AirSep filter | | |
| **Cable Entry** | Two 3/4 NPT gland threads | | |
| **Power Requirements** | Vin (nom) 24 Vdc @ 3.2 A (recommended)<br>Vin (max) 32 Vdc @ 2.4 A<br>Vin (min) 19 Vdc @ 4.0 A | | |
| **Communication** | Isolated 4-20 mA output<br>Isolated RS485 Modbus connection via ASCII or RTU (simplex/half duplex or fully duplex)<br>Micro USB (PC Software) | | |
| **Data Storage** | On board Micro SD Card, minimum of six months (2GB) | | |
| **Relay Output** | Two isolated outputs, voltage free, 24 Vdc @ 1.25 A | | |
| **Weight and Dimensions** | 15 kg (33 lbs)<br>219 x 219 x 172 mm (8.6 x 8.6 x 6.8 in approx.) | | |
| **Gas Sample Line** | 10 m max length, PTFE, 6 mm OD, 4 mm ID | | |

* ± 10 ppb for readings ≤ 0.1 ppm  ** +55 °C = ± 20% accuracy

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


**ION Science Ltd**

The Hive, Butts Lane, Fowlmere, Cambridgeshire, SG8 7SL, UK

T: **+44 (0) 1763 208503**

E: **info@ionscience.com**

W: **www.ionscience.com**


V1.4 UK



Pioneering Gas Sensing Technology. ionscience.com