

Application Note

Negative gas readings in portable gas detectors

an area where the air contains no toxic contaminant, the instrument will display a reading of minus 10ppm.

When taken to an area where that toxic contaminant is actually present, readings will be low by this same amount. For instance, if the air contains 15ppm, the instrument would read only 5ppm. The same is also true for combustible gas sensor with readings expressed in % LEL.

Stabilising readings prior to zeroing

It's always important to allow sensors a period of time to stabilise after the device is turned on. During this warm up period the sensor's output may fluctuate - even in fresh air.

The amount of time required for stabilisation varies from sensor to sensor. Some start with negative readings and count up as they stabilise whilst others start with positive readings and count down.

Most sensors will fully stabilise in less than three minutes. If the instrument is zeroed before stabilisation is complete, further change in the output as the sensors continue to stabilise may produce either positive or negative "drift". It is recommended to wait until your instrument's readings have stopped changing before you zero the device.



Cross-interference and negative readings

Gas-specific electrochemical sensors are designed to minimise the effects of cross-interference from other gases, responding only to the gas they are supposed to measure. Even though care has been taken to reduce cross-sensitivity, some interfering gases may still have an effect on toxic sensor readings. In some cases the interfering effect may be "positive" and result in readings that are higher than they actually are. In a few cases the interference may be negative and produce readings that are lower than they really are.

Dealing with negative gas readings

Take the device into a fresh air environment and wait for the readings to stabilise. If the readings are still negative, re-zero the instrument.

If a gas detector has drifted more than $\pm 50\%$ of the default alarm value it will be necessary to do a "forced" zero calibration. Please refer to the user manual for your gas detector to carry out the appropriate procedure.

Bump testing and device calibration

There are two key elements to remember when calibrating; aside from zeroing the device it is also necessary to expose the sensor to a known concentration test gas to check that the sensor responds to the presence of gas and alarms.

Remember that calibration is a two step procedure. Simply "zeroing" the instrument is not enough, it's also necessary to verify sensor response while the sensor is actually exposed to a known concentration of test gas.

Your distributor may offer third-party devices maintenance services such as calibration, which can help to maximise device uptime. Please contact your distributor for more information on maintaining portable gas detectors.

Portable gas detection solutions

Honeywell offers a wide variety of portable gas detection solutions designed to meet the monitoring requirements of diverse applications and industries.



Impact range

Honeywell Analytics
Experts in Gas Detection

High specification, 4-gas simultaneous monitoring solution designed to meet the needs of the most challenging applications. Model variants include Impact Pro, which features an integrated automatic pump, Impact IR and Impact (standard).



Impulse XT

Honeywell Analytics
Experts in Gas Detection

Impulse XT is a Single-gas portable detection solution with zero maintenance requirements. Delivering 24/7 monitoring with a two year operational life, this device also features an IP67 rating making it ideal for challenging environments.



GasAlertClip Extreme

BWF Technologies
by Honeywell

Compact and affordable, GasAlertClip Extreme offers 24/7 monitoring of single gas hazards with zero maintenance requirements. With easy on/off operation, this single gas detector is available in two and three year model variants.



GasAlert Extreme

BWF Technologies
by Honeywell

Compact and affordable, GasAlert Extreme reliably monitors for any single toxic gas hazard. With easy on/off operation, this single gas detector offers extended longevity with a two year field-replaceable battery and sensor.

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GasAlertQuattro
BW Technologies
 by Honeywell

Rugged and reliable, the GasAlertQuattro four-gas detector combines a comprehensive range of features with simple one-button operation. The graphic LCD displays easy to identify icons that indicate operational information, such as bump test and calibration status for simplified onsite auditing.



GasAlertMicroClip XT
BW Technologies
 by Honeywell

The slim and compact GasAlertMicroClip XT provides affordable protection from atmospheric hazards. With simple one-button operation, this device offers ultimate ease of use and significantly reduces time spent training the user.



GasAlertMax XT II
BW Technologies
 by Honeywell

The rugged GasAlertMax XT II monitors for up to four gas hazards and combines straightforward one-button field operation with an integrated sampling pump. Tamper-proof, user-adjustable options enable the instrument to be customised to suit application needs.



GasAlertMicro 5 Series
BW Technologies
 by Honeywell

Compact and lightweight, GasAlertMicro 5 Series instruments are available in diffusion or pumped formats. These portable gas detectors simultaneously monitor and display up to five atmospheric hazards. Model variants include the GasAlertMicro 5 PID model for the low level detection of VOCs and GasAlertMicro 5 IR for CO₂ monitoring.



ToxiPro
Honeywell

A compact and rugged single-gas toxic portable detector with one-button simplicity, continuous real-time display and highly visible/audible alarms for high noise locations. ToxiPro features an integrated blackbox data recorder and event logger as standard (compatible with IQ Express Single Gas Docking Station).



MultiPro
Honeywell

4-gas device with real-time simultaneous readings, simple one-button operation and a large easy-to-read LCD display. MultiPro features an integrated blackbox data recorder and event logger as standard. An optional screw-on pump with automatic leak test and low flow alarm is also available. (Compatible with IQ Express Multi-Gas Docking Station).



PHD6
Honeywell

Simultaneous monitoring of up to six gas hazards with 18 sensor choices, including PID for the low-level detection of CO₂ and CH₄. PHD6 features an integrated blackbox data recorder and event logger that records all atmospheric hazards experienced during operation. (Compatible with IQ6 Multi-Gas Docking Station).

Automatic device testing solutions



MicroDock II
BW Technologies
 by Honeywell

The MicroDock II is an easy, cost-effective way to bump-test, calibrate and charge a device as well as manage records. Fully compatible with the complete BW Technologies by Honeywell product range, its accompanying Fleet Manager II software allows the user to download information faster than ever from the MicroDock II. Improved functionality allows the creation of accurate and user-friendly reports, print receipts of calibration, sort and graph data and archive information, helping to dramatically simplify fleet management activities.



Enforcer
Honeywell Analytics
 Experts in Gas Detection

Designed for use with the Impact range of portable gas detectors, Enforcer is a small, lightweight test and calibration station that is fully portable. With no batteries or mains power required, Enforcer permits quick testing on the move and helps to reduce the ongoing cost of portable device maintenance.



ToxiPro IQ Express Docking Station
Honeywell

A fully automated bump test, calibration and datalogging station for use with the ToxiPro portable range, allowing four devices to be linked to a single gas supply. Connects to a PC via USB port or Ethernet (optional).



Multi-Pro IQ Express Docking Station
Honeywell

A fully automated bump test, calibration and datalogging station for use with the MultiPro range of portable gas detectors. Connects to a PC via USB port or Ethernet (optional).



IQ6 Docking Station
Honeywell

A fully automated bump test, calibration and datalogging station for use with the PHD6 range of portable gas detectors. Connects to a PC via USB port or Ethernet (optional).

Our Product Range



Fixed Gas Monitoring

Honeywell Analytics offers a wide range of fixed gas detection solutions for a diverse array of industries and applications including: Commercial properties, industrial applications, semiconductor manufacturers, energy plants and petrochemical sites.

- » Detection of flammable, Oxygen and toxic gases (including exotics)
- » Innovative use of four core sensing technologies – paper tape, electrochemical cell, catalytic bead and infrared
- » Capability to detect down to Parts Per Billion (ppb) or Percent by Volume (%v/v)
- » Cost effective regulatory compliance solutions

Portable Gas Monitoring

When it comes to personal protection from gas hazards, Honeywell Analytics has a wide range of reliable solutions ideally suited for use in confined or enclosed spaces.

These include:

- » Detection of flammable, Oxygen and toxic gases
- » Single gas personal monitors – worn by the individual
- » Multi-gas portable gas monitors – used for confined space entry and regulatory compliance
- » Multi-gas transportable monitors – used for temporary protection of area during site construction and maintenance activities

Technical Services

At Honeywell Analytics, we believe in the value of great service and customer care. Our key commitment is providing complete and total customer satisfaction. Here are just a few of the services we can offer:

- » Full technical support
- » Expert team on hand to answer questions and queries
- » Fully equipped workshops to ensure quick turnaround on repairs
- » Comprehensive service engineer network
- » Training on product use and maintenance
- » Mobile calibration service
- » Customised programmes of preventative/corrective maintenance
- » Extended warranties on products

Find out more

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