

# Crowcon Technical Note

**Document Reference:** GEN078 – Bump Testing Requirements

**Date:** 11/06/2018

**Document applies to:** Crowcon Portables

We are often asked about the requirement to Bump Test. Although Bump Test requirements can be found in our product user manuals, this document is designed to provide additional background information on the subject of Bump Testing.

Please also refer to GEN072 – Bump Testing Equipment for Portables.

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## 1. What is Bump Testing?

Gas sensor response can be compromised by poisoning, chemical inhibition, blocked filters, or faulty/damaged sensors. Bump Testing is a quick and easy way to ensure that a gas detector is responding to gas, and also provides an opportunity to check the audio, visual and vibrating alarms on the device are functioning. In short, Bump Testing provides confidence that the device is working and will go into alarm when it's intended to. Bump Testing is designed primarily to protect the worker, however the ability to prove an instrument was bump tested before any incident occurred is vital to demonstrate an organisation has instigated safe working procedures.

Bump testing usually takes no more than around 30 seconds. It involves applying a known concentration of test gas to the detector, to check its response. The concentration of test gas would be sufficient to exercise the detector past its first alarm levels, so that the alarm indicators can also be checked. In some products, the test can be time-bound so that the sensors are expected to respond within a specified time period. Our product user manuals contain product-specific information on bump testing.

Please also refer to GEN072 – Bump Testing Equipment for Portables, for the specific equipment available for bump testing our portable devices.

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## 2. Bump Test Requirements:

**NB: Always refer to your local guidance and regulations.**

General guidance on the selection, use, installation and maintenance of gas detectors is given in EN60079-29-2:2016 (Explosive atmospheres. Gas detectors. Selection, installation, use and maintenance of detectors for flammable gases and oxygen). Specifically, this standard incorporates the following statement regarding 'bump testing': "All portable/transportable gas detection systems should be checked for functionality with a known concentration of flammable gas just prior to use... (bump test)". The procedure is designed to address the risk of 'pellistor' type flammable gas sensors becoming insensitive to gas due to 'poisoning', or damage.

Although there is currently no toxic gas standard that defines a need to a regular 'bump test' before operation; this requirement is likely to be included on forthcoming revisions.

The EN60079-29-2:2016 standard also stipulates that the user must refer to the manufacturers' instructions for guidance on calibration and maintenance frequency. Our general rule is for detectors with flammable gas sensors to be bump tested with gas daily before use: "From the 1st November 2010, EN60079- 29 part 1 has been harmonised under the ATEX directive 94/9/EC (2014/34/EU). Therefore to comply with the ATEX directive, portable apparatus sensing flammable gases should have a functional check with gas before each day of use."

Instruments with toxic sensors should be tested regularly with gas, especially if they have been used or stored in extreme environments, have been contaminated with water or dirt/sludge or exposed to high concentrations of gas.