

Crowcon Technical Note

Document Reference: GEN064 – Statement on Accuracy and Repeatability

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Document applies to: Fixed and Portable Gas Detectors

Gas Detection compared to Analysis:

Gas analysis can be defined as the process of accurately determining the presence and proportion of a gas. Gas analysers are precision scientific instruments which employ various techniques to accurately determine the concentrations of gases in applications where analytical accuracy is important.

Conversely, “Gas Detection” equipment is employed in safety applications to monitor for and to detect the presence of hazardous gases concentrations. Conditions such as temperature, humidity, and sensor drift will have a bearing on the actual reading, so it is important that equipment is used within its specified operation range. Sensor calibration at the recommended intervals and gas response or bump tests, will determine that gas detectors are responding to the appropriate concentrations of the target gas.

Crowcon produces “Gas Detection” equipment which fall into the latter category, so we tend to specify repeatability rather than accuracy figures for our gas detectors.

Definitions:

Accuracy: The accuracy of a measurement system is defined as the degree of closeness of measurements of a quantity to that quantity’s true value.

Repeatability: Repeatability can be defined as the variation in measurements taken by a single instrument, on the same item, under the same conditions, and in a short period of time. For a gas detector the ‘same item’ could be understood as the same gas sample.