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**Performance Requirements  
for Toxic Gas Detectors**

Reaffirmed 10 July 2015

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Performance Requirements for Toxic Gas Detectors

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**ISA - International Society of Automation**  
**ANSI/ISA 920001-2010 (R2015)**  
**Second Edition**



**Underwriters Laboratories Inc.**  
**ANSI/UL 920001**  
**Second Edition**

# **Performance Requirements for Toxic Gas Detectors**

December 23, 2010

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**ANSI/ISA/UL 920001-2010 (R2015)**

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## **UL Standard for Safety for Performance Requirements for Toxic Gas Detectors, UL 920001**

**Second Edition**, Dated December 23, 2010

### ***Summary of Topics***

Adoption of ANSI/ISA 920001, Standard for Performance Requirements for Toxic Gas Detectors as ANSI/UL 920001. This Standard is being issued to update the title page to reflect the reaffirmation of its ANSI approval. No changes in requirements have been made.

Although this is the first-time publication of this Standard by UL, it is being published as the Second edition in order to align UL's edition number with that of the ISA Standard. Please note that as this is a simple reaffirmation of an existing ISA standard.

These requirements are substantially in accordance with Proposal(s) on this subject dated May 8, 2015.

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## Commitment for Amendments

This standard is issued jointly by ISA and Underwriters Laboratories Incorporated (UL). Comments or proposals for revisions on any part of the standard may be submitted to UL at any time.

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## General Notes

This is the common ISA and UL, Standard for the Performance Requirements for Toxic Gas Detectors. It is the second edition of ANSI/ISA-92.00.01 and the second edition of ANSI/UL 920001. The document is a modification of the ISA document to create the equivalent UL version and maintain the ANSI approval of this standard.

ANSI/ISA-92.00.01 and ANSI/UL 920001 contain identical requirements, and identical publication dates.

Efforts have been made to synchronize the UL edition number with that of the corresponding ISA standard with which this standard is harmonized. As a result, one or more UL edition numbers have been skipped to match that of the ISA edition number.

This common standard was prepared by the (ISA) - The International Society of Automation on December 23, 2010 but is now being maintained by Underwriters Laboratories Inc. (UL).

**Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.**

## UL Effective Date

The requirements in this standard are in effect.

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

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## Preface

This preface, as well as all footnotes and annexes, is included for information purposes and is not part of ANSI/ISA-92.00.01-2010 (R2015).

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**CAUTION—EXPOSURE TO TOXIC GASES MAY BE HAZARDOUS TO HEALTH AND LIFE.**

## 1 Scope

1.1 This standard provides minimum requirements for the construction, performance, and testing of portable, transportable, mobile, and stationary electrical apparatus whose purpose is for the detection, measurement and notification of toxic gas in air that are used to enhance the safety of personnel in commercial and industrial locations.

NOTE 1 — Laboratory- or scientific-type analysis or process control performance requirements are not part of this standard.

a) Residential locations are outside the scope of this standard.

NOTE 2 — Performance requirements for detection of flammable (explosive) concentrations of toxic gas(es) are not the purpose of this standard.

NOTE 3 — The user should be aware of environmental effects on both the apparatus and the toxic gas. The effects are not intended to be evaluated by this standard.

Hereafter, the term “apparatus” will refer to “gas-detection apparatus.”

## 2 References

ANSI/ISA-12.13.01, Performance Requirements for Combustible Gas Detectors

ISA-RP92.0.02, Installation, Operation, and Maintenance of Toxic Gas-Detection Instruments: Hydrogen Sulfide (recommended practice for this standard), establishes user criteria for the installation, operation, and maintenance of toxic gas-detection instruments

ANSI/ISA-92.04.01, Performance Requirements for Instruments Used to Detect Oxygen-Deficient/Oxygen-Enriched Atmospheres

National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards, Title 29, Part 1910.1000, Occupational Safety and Health Standards

Threshold Limit Values for Chemical Substances in the Work Environment Adopted by the American Conference of Governmental Industrial Hygienists (ACGIH)

Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) (NIOSH Taft Laboratories)

EN 50270, Electromagnetic Compatibility - Electrical Apparatus for the Detection and Measurement of Combustible Gases, Toxic Gases or Oxygen

## 3 Definitions

For the purposes of this standard, the following definitions apply:

### 3.1 alarm:

an audible, visual, or physical signal that alerts the instrument user of a dangerous gas concentration or instrument problem

#### 3.1.1 false alarm:

any alarm that is triggered by a condition other than the one(s) that the alarm function is set for (ex: high gas alarm caused by RF interference or gas alarm caused by temperature changes)