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*White Paper on Fuel Gas Detection*



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# Foreword

## Fuel Gas Detection

The National Electrical Manufacturers Association's Fire, Life Safety, Security and Emergency Communication Section developed this white paper on fuel gas detection. The purpose of this document is to provide guidance on the proper application, installation, location, performance, inspection, testing, and maintenance of fuel gas detection devices. It outlines basic principles that should be considered in the application of early warning fuel gas detection devices. Operating characteristics of devices and environmental factors that may aid, deter, or prevent their operation are identified.

## About the National Electrical Manufacturers Association (NEMA)

Founded in 1926 and headquartered near Washington, D.C., NEMA represents 325 member companies that manufacture products used in the generation, transmission and distribution, control, and end use of electricity. These products are used in utility, industrial, commercial, institutional, and residential applications. The association's Medical Imaging & Technology Alliance (MITA) Division represents manufacturers of cutting-edge medical diagnostic imaging equipment, including MR, CT, X-ray, and ultrasound products. Worldwide sales of NEMA-scope products exceed $140 billion.

## About the NEMA Fire, Life Safety, Security and Emergency Communication Section

The objective of the section is to be the principal source of technical, training, and educational materials essential for the specification and manufacture of reliable life safety products, their installation, performance, inspection, and maintenance.

The section currently represents 18 U.S., United Kingdom, and Japanese manufacturers in support of the automatic fire detection and alarm industry and the healthcare communications industry. Fire detection and alarm products include life safety/fire alarm systems and devices that provide early warning of an impending or actual fire, heat, or gaseous hazard. The products detect, notify, and initiate control functions in case of hazard to life or property.

For more information on NEMA and the Fire, Life Safety, Security and Emergency Communication Section, go to http://www.nema.org/Products/Pages/Signaling-Protection-and-Communications.aspx or http://www.lifefiresafety.org.

At the time it was approved, the Fire, Life Safety, Security and Emergency Communication Section was composed of the following members:

Apollo America, Inc.
Bosch Security Systems
Construction Innovations, LLC
Eaton Cooper Notification
Figaro USA, Inc.
Gentex Corporation
Google Nest
Honeywell Security and Fire
Hochiki Fire & Safety Group, LLC
Johnson Controls
Keltron Corporation
New Cosmos USA, Inc.
Potter Electric Signal Company, LLC
SDi LLC
Siemens Industry, Inc.

Space Age Electronics
Telecor Inc.

# Section 1
# General

## 1.1 Scope

The scope of this document is life safety and property protection by the use of fuel gas detection devices. Fuel gas detection devices are either system-connected gas detectors or single- or multiple-station gas alarms that are configured to detect the presence of hazard levels of fuel gases such as natural gas or liquified propane gas.

## 1.2 Purpose

The purpose of this document is to provide guidance on the proper application, installation, location, performance, inspection, testing, and maintenance of fuel gas detection devices. It outlines basic principles that should be considered in the application of early warning fuel gas detection devices. Operating characteristics of devices and environmental factors that may aid, deter, or prevent their operation are identified.

Fire protection engineers, mechanical and electrical engineers, fire service personnel, building code officials, fire alarm designers, and installers will find the contents educational and useful. This document is intended to be used as a technical guide. Applicable codes and standards, as well as directives of the Authority Having Jurisdiction, must be followed in all cases.