NEMA Standards Publication

NEMA SB 2-2016

Training Manual on Fire Alarm Systems

National Electrical Manufacturers Association

NEMA Standards Publication SB 2-201

Training Manual on Fire Alarm Systems

Published by:

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, Virginia 22209

www.nema.org

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FOREWORD

The purpose of this training manual is to provide text material suitable for training persons in the proper physical installation of fire alarm signaling systems. To that end, this manual covers terminology, basic theory of operation, installation details, system startup techniques, and general maintenance.

While the manual may serve as a standalone text, it is best used as a source material for either apprentices or journeymen in a classroom environment using a qualified instructor.

The manual emphasizes installation of basic fire alarm signaling systems instead of how or when to apply the myriad system or equipment options available. Though the manual focuses on installation, the reader is cautioned to follow the specific published installation instructions provided by the manufacturer of systems or equipment being installed.

This information is a technical guide, distinct from mandatory requirements for compliance. It will be updated to keep current with requirements of referenced and/or quoted publications of other organizations. Comments, questions, or recommendations are invited and should be addressed to:

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This standards publication was developed by the NEMA Fire Life Safety, Security, and Emergency Communications Section. At the time it was approved, the section was composed of the following members:

Apollo America
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Vulcom
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Section 1
General

1.1 Scope

This manual, developed by the automatic fire detection and alarm industry of the Fire, Life Safety, Security and Emergency Notification Section, provides technical information on basic fire alarm systems in common usage.

This edition of the manual supersedes all prior versions.

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1.2 Referenced Standards

Acoustical Society of America
- ANSI/ASA S3.41 — *American National Standard Audible Emergency Evacuation Signal*

International Code Council
- IBC-2012 — *International Building Code*
- IFC-2012 — *International Fire Code*

National Electrical Manufacturers Association
- NEMA SB 50-2014 — *Emergency Communications Audio Intelligibility Applications Guide*

National Fire Protection Association
- NFPA 13-2013 — *Standard for the Installation of Sprinkler Systems*
- NFPA 70-2014 — *National Electrical Code*
- NFPA 72-2013[1] — *National Fire Alarm Code*
- NFPA 101-2015 — *Life Safety Code*
- NFPA 1221-2016 — *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.*
- NFPA 5000-2015 — *Building Construction and Safety Code*

Underwriters Laboratories
- UL 1971 — *Signaling Devices for the Hearing Impaired*

NOTE: Since NFPA standards and codes are periodically revised, the year of the desired edition of the particular standard or code should be used when referencing the NFPA document involved. Two methods are in common use. One is to reference the code by stating NFPA 72-2013. The other is to refer to the 2013 edition of NFPA 72. If a particular question comes up regarding a standard or code, be sure to correctly identify which edition of the code may be at issue. All states or municipalities that have adopted NFPA codes or standards by reference do not always refer to the latest edition available. Each state or municipality may adopt the NFPA codes in whole or in part. The user should check for local amendments to the codes.

1.3 General Definitions

acknowledge: To confirm that a message or signal has been received, such as by the pressing of a button or the selection of a software command.