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Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants

ISA-S71.04, Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants

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ISA
67 Alexander Drive
P.O. Box 12277
Research Triangle Park, North Carolina 27709

Preface

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The information contained in the preface, footnotes, and appendices is included for information only and is not a part of the standard.

This document is one of several standards covering various environmental conditions affecting process measurement and control systems. In developing this standard, the committee goals included the following:

1) To provide a practical standard that can be applied with a minimum of research and technical effort by the user.

2) To provide a concise method of stating environmental classifications for convenient communication between users of the standard.

3) To cover real-world ranges of each classified parameter.

This standard is limited to airborne contaminants and biological influences only, covering contamination influences that affect industrial process measurement and control systems.

The persons listed below served as members of ISA Committee SP71, which prepared this standard.

NAME	COMPANY
W. Holway, Chairman	The Foxboro Company
D. Boyle	Consultant

NAME	COMPANY
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NAME	COMPANY
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R. G. Marvin*	Roy G. Marvin Company
W. B. Miller*	Moore Products Company
G. Platt*	Retired
J. R. Williams*	Stearns Catalytic Corporation

*Director Emeritus

Contents

1 Purpose

The purpose of this standard is to classify airborne contaminants that may affect process measurement and control instruments.

The classification system provides users and manufacturers of instruments with a means of specifying the type and concentration of airborne contaminants to which a specified instrument may be exposed.

This document is one of a series of standards on environmental conditions for process measurement and control systems.

2 Scope

2.1 This standard covers airborne contaminants and biological influences that affect industrial process measurement and control equipment. Specifications for other environmental conditions, including nuclear radiation and hazardous atmospheres, are beyond the scope of this standard.

2.2 This standard establishes airborne contaminant classes for fixed (non-mobile) installations during normal operation (nonemergency conditions) or during transportation and storage.

2.3 The classes of environmental conditions stated in this standard are suitable for use in activities related to process instrumentation, including design, manufacturing, sales, installation, test, use, and maintenance. These classes may also be used as a guide when establishing requirements for environmental control of buildings or other protective housings for industrial process measurement and control systems.

2.4 These classifications pertain only to the environment external to the equipment which may affect the equipment externally or internally.

2.5 The effects of environmental conditions on safety, comfort, and performance of operating and maintenance personnel are not considered in this standard.

2.6 CAUTION — Airborne or biological contaminants not listed in this document could cause equipment damage. Caution should be used when a combination of factors approach or surpass class "X." Obtaining the guidance of a chemical specialist is suggested when this condition occurs.

3 Introduction

3.1 Environmental classifications have been established according to the type of contaminant. Within each classification, severity levels have also been established. Parameter limit values are tabulated for each classification and severity level of the contaminant. The classification consists of a class contaminant letter followed by a severity identification numeral.