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oSIST prEN IEC 62682:2021

01-februar-2021

Upravljanje alarmnih sistemov za procesno industrijo

Management of alarms systems for the process industries

Alarmmanagement in der Prozessindustrie

Gestion de systèmes d'alarme dans les industries de transformation

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65A/986/CDV

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SECRETARIAT: United Kingdom	SECRETARY: Mr Petar Luzajic
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 57	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
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TITLE:

Management of alarms systems for the process industries

PROPOSED STABILITY DATE: 2024

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316 # MANAGEMENT OF ALARMS SYSTEMS FOR THE PROCESS INDUSTRIES

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353 The text of this standard is based on the following documents:

FDIS	Report on voting
65A/704/FDIS	65A/706/RVD

354

355 Full information on the voting for the approval of this standard can be found in the report on
356 voting indicated in the above table.

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359 The committee has decided that the contents of this publication will remain unchanged until the
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361 the specific publication. At this date, the publication will be

362 • reconfirmed,
363 • withdrawn,
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INTRODUCTION

Purpose

This standard addresses the development, design, installation, and management of alarm systems in the process industries. Alarm management includes multiple work processes throughout the alarm management lifecycle. This standard defines the terminology and models to develop an alarm system, and it defines the work processes recommended to effectively maintain the alarm throughout the lifecycle. Ineffective alarm systems have often been cited as contributing factors in the investigation reports following major process incidents. This standard is intended to provide a methodology that will result in the improved safety, quality, and operation in the process industries.

The 1st edition of this standard was adapted from ANSI/ISA-18.2-2009, *Management of Alarm Systems for the Process Industries*, an International Society of Automation (ISA) standard, and with due consideration of other guidance documents that have been developed throughout industry. This 2nd edition has incorporated some changes made in ANSI/ISA-18.2-2016.

This standard is not the first effort to define terminology and practices for effective alarm systems. In 1999 the Engineering Equipment and Materials Users' Association (EEMUA) issued Publication 191, *Alarm Systems: A Guide to Design, Management and Procurement*, with the 2nd edition published in 2007 and the 3rd edition published in 2013. In 2003 the User Association of Process Control Technology in Chemical and Pharmaceutical Industries (NAMUR) issued worksheet NA 102, *Alarm Management*, which was updated in 2008. During the development and maintenance of this standard every effort was made to keep terminology and practices consistent with the previous work of these respected organizations and committees.

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This document provides requirements for alarm management and alarm systems. It is intended for those individuals and organizations that

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a) manufacture or implement embedded alarm systems,
b) manufacture or install third-party alarm system software,
c) design or install alarm systems,
d) operate and maintain alarm systems, and
e) audit or assess alarm system performance.

Organization

This standard is organized in parts. The first part (Clauses 1 to 3) are normative without any mandatory requirements. Clause 4 contains mandatory requirements. Clause 5 is normative without any mandatory requirements. The main body of the standard (Clauses 6 to 18), describes mandatory requirements and non-mandatory recommendations.

Within this standard, mandatory requirements are stated with 'shall', non-mandatory recommendations are stated with 'should', and conditional requirements are state with 'may'. The phase 'is required' indicates the requirement has been stated previously in the standard.

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MANAGEMENT OF ALARMS SYSTEMS FOR THE PROCESS INDUSTRIES

1 Scope

1.1 General applicability

This standard specifies general principles and processes for the management of alarm systems based on controls system and human-machine interfaces (HMI) for facilities in the process industries. It covers all alarms to be presented to the operator through the control system, which includes alarms from basic process control systems, annunciators, packaged systems (for example refrigeration machines), and safety instrumented systems.

The practices in this standard are applicable to continuous, batch, and discrete processes. There can be differences in implementation to meet the specific needs based on those process types.

In jurisdictions where the governing authorities (for example national, federal, state, province, county, city) have established process safety design, process safety management, or other requirements, in addition to the requirements of this standard, these should be taken into consideration.

The primary function within the alarm system is to notify operators of abnormal process conditions or equipment malfunctions and support the response. The alarm systems can include both the basic process control system (BPCS) and the safety instrumented system (SIS), each of which uses measurements of process conditions and logic to generate alarms. Figure 1 illustrates the concepts of alarm and response dataflow through the alarm system. The alarm system also includes a mechanism for communicating the alarm information to the operator via an HMI, usually a computer screen or an annunciator. Additional functions of the alarm system are an alarm and event log, an alarm historian, and the generation of performance metrics for the alarm system. There are external systems that can use the data from the alarm system.

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Figure 1 is not intended to represent physical wiring.