AS 4024.1904—2006

Australian Standard™

Safety of machinery

Part 1904: Displays, controls, actuators and signals—Indication, marking and actuation—Requirements for visual, auditory and tactile signals

This Australian Standard was prepared by Committee SF-041, General Principles for the Guarding of Machinery. It was approved on behalf of the Council of Standards Australia on 21 April 2006.
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The following are represented on Committee SF-041:

Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Department for Administration and Information Services, SA
Department of Consumer and Employment Protection, WorkSafe Division, WA
Department of Primary Industries, Mine Safety, NSW
Engineers Australia
Federal Chamber of Automotive Industries
Human Factors and Ergonomics Society of Australia
Institution of Instrumentation, Control and Automation Australia
National Electrical and Communications Association
National Safety Council of Australia
Office of the Australian Safety and Compensation Council
Safety Institute of Australia
The University of Melbourne
Tractor and Machinery Association of Australia
Victorian WorkCover Authority

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PREFACE

This Standard was prepared by the Standards Australia Committee SF-041, General principles for the Guarding of Machinery to supersede, in part AS 4024.1—1996, *Safeguarding of machinery*, Part 1: *General principles.*

During its work, the Committee considered a number of Standards dealing with safety of machinery originating within the European Community. Many of these European Standards are being adopted virtually unchanged by the International Standards Organization for Standardization (ISO), and the committee has agree to continue to use material emanating from both CEN and ISO in this new edition to maintain consistency with previous editions of AS 4024, and other, machine-specific Australian Standards currently under development.

This edition has been published as a series of small parts rather than the single part of AS 4024.1 previously available. In doing this, the Committee has cleared the way for simple revisions in the future. With a new edition of a relevant EN or ISO Standard becomes available, it can be adopted and published within the framework of AS 4024 with a minimum delay, so ensuring continued international alignment.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

CONTENTS

Page

FOREWORD

At man–machine interfaces, warning and danger signals need to convey safety-related meanings for the safe use and monitoring of machinery for exposed persons and operators.

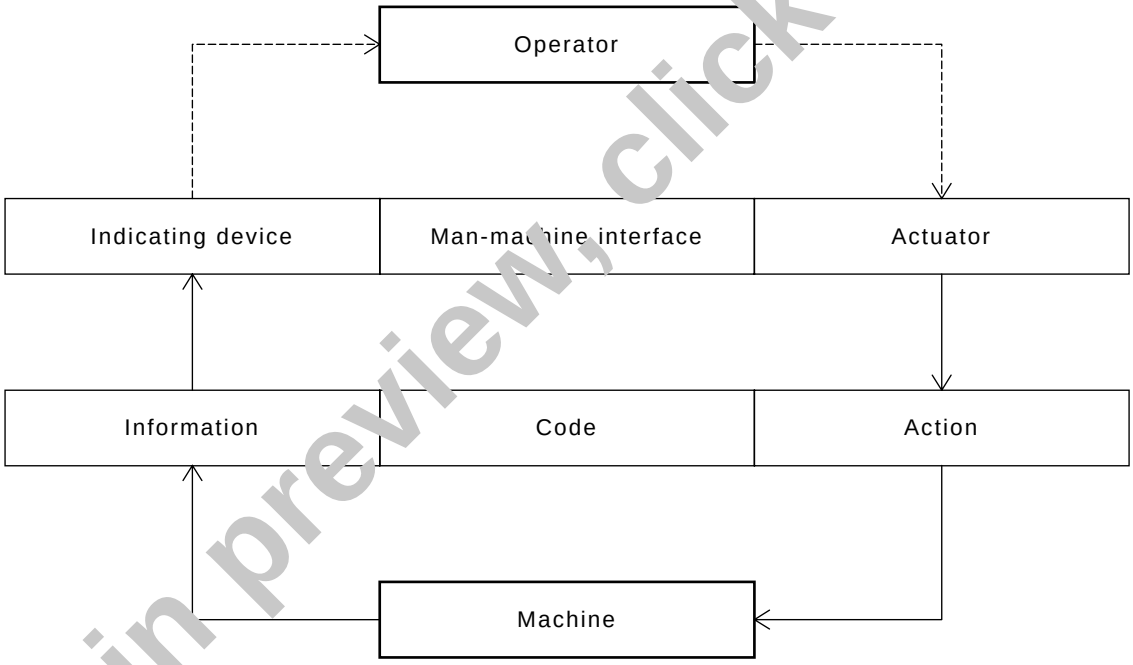
It is via the man–machine interface that the operator interacts with the machinery or process in an open-loop system (see Figure). This interface consists of actuators by means of which the operator initiates actions, and indicating devices through which the operator receives information. In many applications the information is represented by a signal, which is encoded by a distinct set of rules, and the operator has then to interpret the signal according to these rules. Different types of coding such as colour, shape or time are used as appropriate to the demands of the task of the operator.

The reasons for using codes are—

(a) to permit the spatial separation of the machinery from centralized control stations;

(b) to increase the perceptible amount of information given by an indicating devices, e.g. per display area unit, per unit of time; and

(c) to decrease the mental work-load of an operator and/or exposed persons.



OPEN-LOOP CONTROL, ACTION AND INFORMATION SYSTEMS

STANDARDS AUSTRALIA

Australian Standard

Safety of machinery

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1 SCOPE

This Standard specifies requirements for visual, auditory and tactile methods of indicating safety-related information, at the man-machine interface and to exposed persons.

It specifies a system of colours, safety signs, markings and other warning, intended for use for the indication of hazardous situations, and health hazards and for meeting certain emergencies. It also specifies ways of coding visual, auditory and tactile signals for indicating and actuating devices in order to facilitate the safe use and monitoring of machinery.

2 OBJECTIVE

The objective of this Standard is to enable designers, manufacturers, suppliers, employers and users of machinery to minimize risks to the health and safety of employees and others working with or otherwise near machinery by providing requirements for signals.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS	
1319	Safety signs for the occupational environment
4024	Safety of machinery
4024.1604	Part 1604: Design of controls interlocks and guarding—Emergency stop—Principles for design
60204	Safety of machinery—Electrical equipment of machines
60204.1	Part 1: General requirements (IEC 60204-1, Ed.5 (FDIS) MOD)
60417	Graphical symbols for use on equipment (series)
IEC	
60073	Basic and safety principles for man–machine interfaces—Coding principles for indicators and actuators
ISO	
3864	Graphical symbols—Safety colours and safety signs
3864-1	Part 1: Design principles for safety signs in workplaces and public areas
7000	Graphic symbols for use on equipment—Index and synopsis

4 DEFINITIONS

For the purposes of this Standard, the definitions below apply.

4.1 Active signal

Information provided by a device whose status can readily change which is given to indicate a change in machinery status or to alert to a change in risk.