BRITISH STANDARD

BS EN
60204-1:2006

Safety of machinery — Electrical equipment of machines —

Part 1: General requirements

The European Standard EN 60204-1:2006 has the status of a British Standard

ICS 29.020

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Safety of machinery – Electrical equipment of machines Part 1: General requirements

(IEC 60204-1:2005, modified)

Sécurité des machines –
Equipement électrique des machines
Partie 1: Règles générales
(CEI 60204-1:2005, modifiée)

Sicherheit von Maschinen –
Elektrische Ausrüstung von Maschinen
Teil 1: Allgemeine Anforderungen
(IEC 60204-1:2005, modifiziert)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of the International Standard IEC 60204-1:2005, prepared by IEC TC 44, Safety of machinery – Electrotechnical aspects, together with common modifications prepared by the Technical Committee CENELEC TC 44X, Safety of machinery – Electrotechnical aspects, was approved by CENELEC as EN 60204-1 on 2006-06-01.

This European Standard supersedes EN 60204-1:1997.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2007-06-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-06-01

NOTE The application of this standard can involve the selection of components and/or parts that are to be integrated with the electrical equipment of a machine in accordance with the instructions and/or specifications of the manufacturers of the components and/or parts.

Also, in the context of legislative duties that are applicable to machinery manufacturers within the European Union it is important to recognise that the safety of electrical equipment can involve the use of equipment and services provided by other parties (see 3.54).

To assist manufacturers in satisfying these duties it can be necessary for the supplier of the equipment to obtain information about its intended use. This can be facilitated by establishing an agreement between the user and supplier on basic conditions and additional user requirements to enable proper design, application and utilization of the electrical equipment of the machine. An enquiry form that can be used for this purpose is provided in Annex B. Such an agreement is not intended to reduce the level of safety of the electrical equipment provided by this standard.

Endorsement notice

The text of the International Standard IEC 60204-1:2005 was approved by CENELEC as a European Standard with agreed common modifications.

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INTRODUCTION

This part of IEC 60204 provides requirements and recommendations relating to the electrical equipment of machines so as to promote:

– safety of persons and property;

– consistency of control response;

– ease of maintenance.

More guidance on the use of this part of IEC 60204 is given in Annex F.

Figure 1 has been provided as an aid to the understanding of the inter-relationship of the various elements of a machine and its associated equipment. Figure 1 is a block diagram of a typical machine and associated equipment showing the various elements of the electrical equipment addressed in this part of IEC 60204. Numbers in parentheses ( ) refer to Clauses and Subclauses in this part of IEC 60204. It is understood in Figure 1 that all of the elements taken together including the safeguards, tooling/fixturing, software, and the documentation, constitute the machine, and that one or more machines working together with usually at least one level of supervisory control constitute a manufacturing cell or system.

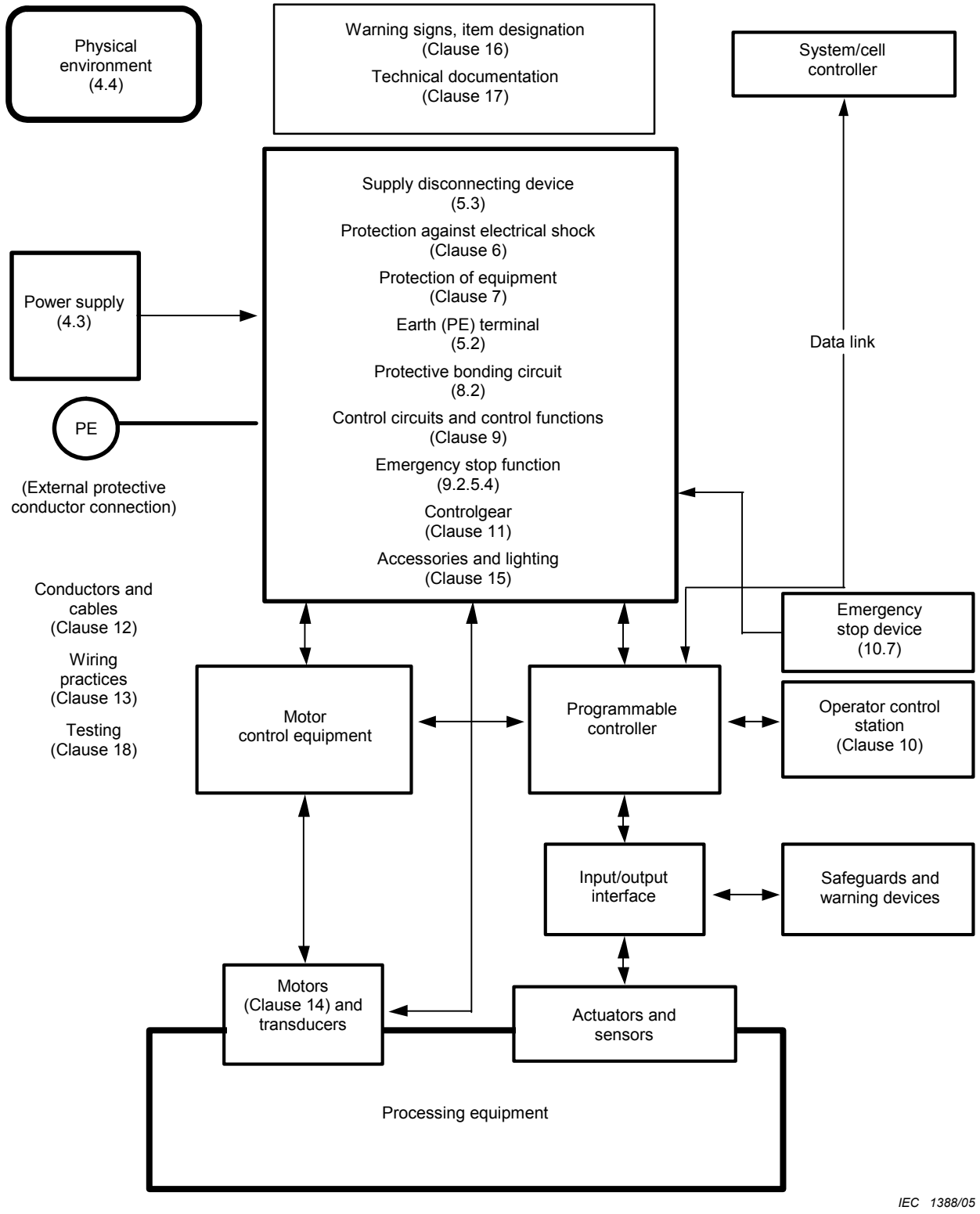


Figure 1 – Block diagram of a typical machine

SAFETY OF MACHINERY – ELECTRICAL EQUIPMENT OF MACHINES –

Part 1: General requirements

1 Scope

This part of IEC 60204 applies to the application of electrical, electronic and programmable electronic equipment and systems to machines not portable by hand while working, including a group of machines working together in a co-ordinated manner.

NOTE 1 This part of IEC 60204 is an application standard and is not intended to limit or inhibit technological advancement.

NOTE 2 In this part of IEC 60204, the term *electrical* includes electrical, electronic and programmable electronic matters (i.e. *electrical equipment* means electrical, electronic and programmable electronic equipment).

NOTE 3 In the context of this part of IEC 60204, the term *person* refers to any individual and includes those persons who are assigned and instructed by the user or his agent(s) in the use and care of the machine in question.

The equipment covered by this part of IEC 60204 commences at the point of connection of the supply to the electrical equipment of the machine (see 5.1).

NOTE 4 The requirements for the electrical supply installation in buildings are given in the IEC 60364 series.

This part of IEC 60204 is applicable to the electrical equipment or parts of the electrical equipment that operate with nominal supply voltages not exceeding 1 000 V for alternating current (a.c.) and not exceeding 1 500 V for direct current (d.c.), and with nominal supply frequencies not exceeding 200 Hz.

NOTE 5 For higher voltages, see IEC 60204-11.

This part of IEC 60204 does not cover all the requirements (for example guarding, interlocking, or control) that are needed or required by other standards or regulations in order to protect persons from hazards other than electrical hazards. Each type of machine has unique requirements to be accommodated to provide adequate safety.

This part specifically includes, but is not limited to, the electrical equipment of machines as defined in 3.35.

NOTE 6 Annex C lists examples of machines whose electrical equipment can be covered by this part of IEC 60204.

〚C〉 This part of EN 60204 does not specify additional and special requirements that can apply to the electrical equipment of machines including those that

– are intended for use in open air (i.e. outside buildings or other protective structures);
– use, process, or produce potentially explosive material (for example paint or sawdust);
– are intended for use in potentially explosive and/or flammable atmospheres;
– have special risks when producing or using certain materials;
– are intended for use in mines;
– are sewing machines, units, and systems;

  NOTE 7 For sewing machines, see EN 60204-31.

– are hoisting machines.

  NOTE 8 For hoisting machines, see EN 60204-32. 〈C〛

Power circuits where electrical energy is directly used as a working tool are excluded from this part of IEC 60204.