

Bar coding — Symbology specifications — “Code 128”

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British Standard

ICS 35.040

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- Auto ID User Association
- Automatic Identification Manufacturers' Association (Aim UK)
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National foreword

This British Standard has been prepared by Technical Committee IST/34 and is the English language version of EN 799:1995, *Bar coding — Symbology specifications — “Code 128”*, published by the European Committee for Standardization (CEN).

This British Standard is published under the direction of the Information Systems Technology Assembly whose Technical Committee IST/34 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on interpretation, or proposals for change, and keep UK interest informed;
- monitor related international and European developments and promulgate them in the UK.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 16 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

English version

Bar coding — Symbology specifications — “Code 128”

Code à barres — Spécifications des
symbologies — “Code 128”

Strichcodierung —
Symbologiespezifikationen — “Code 128”

This European Standard was approved by CEN on 1995-06-22. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

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

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 225, Bar coding, of which the secretariat is held by NNI.

Organizations contributing to the development of the standard include:

- AIM Europe (Automatic Identification Manufacturers).

NOTE Not all of the symbologies which appear in this document are defined in European Standards; for information on current European Standards contact the CEN Central Secretariat or national standards organizations.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 1996, and conflicting national standards shall be withdrawn at the latest by February 1996.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

The technology of bar coding is based on the recognition of patterns encoded in bars and spaces of defined dimensions. There is a number of methods of encoding information in bar code form, known as symbologies, and the rules defining the translation of characters into bar and space patterns and other essential features are known as the symbology specification. “Code 128” is one such symbology.

Previously symbology specifications have been developed and published by a number of organizations resulting in certain instances in conflicting specifications for certain symbologies.

Manufacturers of bar code equipment and users of bar code technology require publicly available standard symbology specifications to which they can refer when developing equipment and application standards.

1 Scope

This standard

- specifies the requirements for the bar code symbology known as “Code 128”;
- specifies “Code 128” symbology characteristics, data character encodation, dimensions, tolerances, decoding algorithms and application-defined parameters;
- defines a subset of “Code 128” assigned to EAN International.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed below. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 1556, *Bar coding — Terminology*.

prEN 1635, *Bar coding — Test specifications for bar code symbols*.

ISO 646:1991, *Information technology — ISO 7-bit coded character set for information interchange*.

ISO 8859-1:1987, *Information processing — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*.

3 Definitions

For the purposes of this European Standard the definitions in prEN 1556 apply.

4 Requirements

4.1 Symbology characteristics

The characteristics of “Code 128” are:

- a) encodable character set:
 - 1) All 128 ASCII characters, i.e. ASCII characters 0 – 127 inclusive, in accordance with ISO 646. (Code subset C — see 4.3.3.3 — permits two numeric data digits to be expressed in one symbol character.) Characters with ASCII values 128 – 255 in accordance with ISO 8859-1 may also be encoded. [See 4.3.4.3 d);
 - 2) 4 non-data function characters;
 - 3) 4 code subset selection characters;
 - 4) 3 start characters;
 - 5) 1 stop character;
- b) code type: continuous;
- c) elements per symbol character: 6, comprising 3 bars and 3 spaces, each of 1, 2, 3 or 4 modules in width (stop character: 7 elements comprising 4 bars and 3 spaces);
- d) character self-checking: yes;
- e) data string length encodable: symbol length: variable;
- f) bidirectionally decodable: yes;
- g) symbol check character: one, mandatory (see A.1);
- h) Symbol character density: 11 modules per character (equivalent to 5.5 modules per data character in code subset C) (13 modules for stop character);
- i) non-data overhead: equivalent to 35 modules.

4.2 Symbol structure

“Code 128” symbols shall comprise:

- a) leading quiet zone;
- b) start character;
- c) one or more characters representing data and special characters;
- d) symbol check character;
- e) stop character;
- f) trailing quiet zone.

Figure 1 illustrates a “Code 128” symbol.

4.3 Character encodation

4.3.1 Symbol character encodation

Table 1 defines all the “Code 128” character assignments. In the column headed “Symbol Character Structure” the numeric values represent the widths of the elements in modules or multiples of the X dimension.