
**Information technology — 8-bit single-byte
coded graphic character sets —**

**Part 4:
Latin alphabet No. 4**

*Technologies de l'information — Jeux de caractères graphiques codés sur
un seul octet —*

Partie 4: Alphabet latin n° 4

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Contents

	Page
Foreword	iii
Introduction	iv
1 Scope	1
2 Conformance	1
3 Normative references	1
4 Definitions	2
5 Notation, code table and names	2
6 Specification of the coded character set	3
7 Identification of the character set	6
Annex A: Coverage of languages by parts 1 to 10 of ISO/IEC 8859	7
Annex B: Main differences between ISO 8859-4:1988 and this first edition of this part of ISO/IEC 8859	9
Annex C: Bibliography	10

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and nongovernmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75% of the national bodies casting a vote.

International Standard ISO/IEC 8859-4 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 2, *Character sets and information coding*.

This edition cancels and replaces ISO 8859-4:1988 which has been technically revised.

ISO/IEC 8859 consists of the following parts, under the general title *Information technology – 8-bit single-byte coded graphic character sets*:

- Part 1: *Latin alphabet No. 1*
- Part 2: *Latin alphabet No. 2*
- Part 3: *Latin alphabet No. 3*
- Part 4: *Latin alphabet No. 4*
- Part 5: *Latin/Cyrillic alphabet*
- Part 6: *Latin/Arabic alphabet*
- Part 7: *Latin/Greek alphabet*
- Part 8: *Latin/Hebrew alphabet*
- Part 9: *Latin alphabet No. 5*
- Part 10: *Latin alphabet No. 6*

Annexes A to C of this part of ISO/IEC 8859 are for information only.

Introduction

ISO/IEC 8859 consists of several parts. Each part specifies a set of up to 191 graphic characters and the coded representation of these characters by means of a single 8-bit byte. Each set is intended for use for a particular group of languages.

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Information technology – 8-bit single-byte coded graphic character sets –

Part 4: Latin alphabet No. 4

1 Scope

This part of ISO/IEC 8859 specifies a set of 191 coded graphic characters identified as Latin alphabet No. 4.

This set of coded graphic characters is intended for use in data and text processing applications and also for information interchange.

The set contains graphic characters used for general purpose applications in typical office environments in at least the following languages:

Danish, English, Estonian, Finnish, German, Greenlandic, Latin, Latvian, Lithuanian, Norwegian, Sámi (but see Annex A.1, Notes), Slovene and Swedish.

This set of coded graphic characters may be regarded as a version of an 8-bit code according to ISO/IEC 2022 or ISO/IEC 4873 at level 1.

This part of ISO/IEC 8859 may not be used in conjunction with any other part of ISO/IEC 8859. If coded characters from more than one part are to be used together, by means of code extension techniques, the equivalent coded character sets from ISO/IEC 10367 should be used instead within a version of ISO/IEC 4873 at level 2 or level 3.

The coded characters in this set may be used in conjunction with coded control functions selected from ISO/IEC 6429. However, control functions are not used to create composite graphic symbols from two or more graphic characters (see clause 6).

NOTE – ISO/IEC 8859 is not intended for use with Telematic services defined by ITU-T. If information coded according to ISO/IEC 8859 is to be transferred to such services, it will have to conform to the requirements of those services at the access-point.

2 Conformance

2.1 Conformance of information interchange

A coded-character-data-element (CC-data-element) within coded information for interchange is in conformance with this part of ISO/IEC 8859 if all the coded representations of graphic characters within

that CC-data-element conform to the requirements of clause 6.

2.2 Conformance of devices

A device is in conformance with this part of ISO/IEC 8859 if it conforms to the requirements of 2.2.1, and either or both of 2.2.2 and 2.2.3. A claim of conformance shall identify the document which contains the description specified in 2.2.1.

2.2.1 Device description

A device that conforms to this part of ISO/IEC 8859 shall be the subject of a description that identifies the means by which the user may supply characters to the device, or may recognize them when they are made available to him, as specified respectively in 2.2.2 and 2.2.3.

2.2.2 Originating devices

An originating device shall allow its user to supply any sequence of characters from those specified in clause 6, and shall be capable of transmitting their coded representations within a CC-data-element.

2.2.3 Receiving devices

A receiving device shall be capable of receiving and interpreting any coded representations of characters that are within a CC-data-element, and that conform to clause 6, and shall make the corresponding characters available to its user in such a way that the user can identify them from among those specified there, and can distinguish them from each other.

3 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 8859. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 8859 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 2022:1994, *Information technology – Character code structure and extension techniques.*

ISO/IEC 4873:1991, *Information technology – ISO 8-bit code for information interchange – Structure and rules for implementation.*

ISO/IEC 8824-1:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation.*

4 Definitions

For the purposes of this part of ISO/IEC 8859 the following definitions apply:

4.1 bit combination: An ordered set of bits used for the representation of characters.

4.2 byte: A bit string that is operated upon as a unit.

4.3 character: A member of a set of elements used for the organization, control, or representation of data.

4.4 code table: A table showing the characters allocated to each bit combination in a code.

4.5 coded character set; code: A set of unambiguous rules that establishes a character set and the one-to-one relationship between the characters of the set and their bit combinations.

4.6 coded-character-data-element (CC data-element): An element of interchanged information that is specified to consist of a sequence of coded representations of characters, in accordance with one or more identified standards for coded character sets.

4.7 graphic character: A character, other than a control function, that has a visual representation normally handwritten, printed or displayed, and that has a coded representation consisting of one or more bit combinations.

NOTE – In ISO/IEC 8859 a single bit combination is used to represent each character.

4.8 graphic symbol: A visual representation of a graphic character or of a control function.

4.9 position: That part of a code table identified by its column and row coordinates.

5 Notation, code table and names

5.1 Notation

The bits of the bit combinations of the 8-bit code are identified by b_8 , b_7 , b_6 , b_5 , b_4 , b_3 , b_2 , and b_1 , where b_8 is the highest-order, or most-significant bit and b_1 is the lowest-order, or least-significant bit.

The bit combinations may be interpreted to represent numbers in binary notation by attributing the following weights to the individual bits:

Bit	b_8	b_7	b_6	b_5	b_4	b_3	b_2	b_1
Weight	128	64	32	16	8	4	2	1

Using these weights, the bit combinations are identified by notations of the form xx/yy , where xx and yy are numbers in the range 00 to 15. The correspondence between the notations of the form xx/yy and the bit combinations consisting of the bits b_8 to b_1 is as follows:

– xx is the number represented by b_8 , b_7 , b_6 and b_5 where these bits are given the weights 8, 4, 2, and 1 respectively.

– yy is the number represented by b_4 , b_3 , b_2 and b_1 where these bits are given the weights 8, 4, 2, and 1 respectively.

The bit combinations are also identified by notations of the form hk , where h and k are numbers in the range 0 to F in hexadecimal notation. The number h is the same as the number xx described above, and the number k the same as the number yy described above.

5.2 Layout of the code table

An 8-bit code table consists of 256 positions arranged in 16 columns and 16 rows. The columns and the rows are numbered 00 to 15. In hexadecimal notation the columns and the rows are numbered 0 to F.

The code table positions are identified by notations of the form xx/yy , where xx is the column number and yy is the row number. The column and row numbers are shown at the top and left edges of the table respectively. The code table positions are also identified by notations of the form hk , where h is the column number and k is the row number in hexadecimal notation. The column and row numbers are shown at the bottom and right edges of the table respectively.

The positions of the code table are in one-to-one correspondence with the bit combinations of the code. The notation of a code table position, of the form xx/yy , or of the form hk , is the same as that of the corresponding bit combination.

5.3 Names and meanings

This part of ISO/IEC 8859 assigns a unique name and a unique identifier to each graphic character. These names and identifiers have been taken from

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