

INTERNATIONAL STANDARD

ISO
9144

First edition
1991-10-01

Securities — Optical character recognition line — Position and structure

Valeurs mobilières — Ligne de lecture optique — Position et structure



Reference number
ISO 9144:1991(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9144 was prepared by Technical Committee ISO/TC 68, *Banking and related financial services*, Sub-Committee SC 4, *Securities*.

Annexes A, B, C and D form an integral part of this International Standard.

Introduction

The optical reading of securities is an important step towards the further rationalization of securities processing since it results in lower handling costs, faster and more reliable processing, and thus facilitates controls. However, optical reading does not release the recipient from carrying out customary authenticity checks.

The definition of the location and structure of an Optical Character Recognition (OCR) line as contained in this International Standard must satisfy both visual and machine readable requirements.

The specific needs of the securities administration, securities printing, and OCR reading techniques are taken into account.

Benefits of OCR processing can only be achieved when a sufficiently high volume of OCR readable securities has been issued.

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Securities — Optical character recognition line — Position and structure

1 Scope

The purpose of this International Standard is

- a) to define the location and size of one or more areas on the securities (sheets, coupons, talons) for the printing of a line of characters readable by OCR equipment;
- b) to define the position of this line within the above-mentioned areas;
- c) to define the structure and the contents of this line.

This International Standard applies to all types of printed securities (both bearer and registered), such as bonds, shares, stock certificates, warrants, coupons and talons, whether they are circulating internationally or domestically.

Wherever this International Standard permits options, it is recommended at a national level to select and standardize one of them. At the time of its issuance, securities were in existence with OCR lines which do not fully conform with this International Standard, e.g. Eurobonds and French "Certificats Représentatifs". Examples are given in annex A.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 1073-2:1976, *Alphanumeric character sets for optical recognition — Part 2: Character set OCR-B — Shapes and dimensions of the printed image.*

ISO 1831:1980, *Printing specifications for optical character recognition.*

ISO 6166:1987, *Securities — International securities identification numbering system (ISIN).*

ISO 8109:1990, *Banking and related financial services — Securities — Format of Eurobonds.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 clear area: An area of specified position and dimensions within which information intended for reading by OCR is to be printed. This area should always be parallel to other printed text on the document.

3.2 OCR line: This is a line of information to be read by an optical character reader. It is divided into fields of one or more OCR characters.

3.3 certificate number: Number identifying one specific document of any security issue. This definition includes transferable or negotiable receipts representing underlying securities.

3.4 series designation: The series designation differentiates portions of the same issue (e.g. for redemptional drawing purposes).

3.5 default field length: Field length if this length is not specified at a national level.

4 Paper characteristics

This International Standard assumes that the paper specifications of the security are in compliance with ISO 1831 with the exception of references to the watermark.

5 Specifications and size of the clear area (see annex B)

5.1 Dimensions

5.1.1 The clear area shall have a height of exactly 9 mm.

5.1.2 The clear area shall have a minimum width of 95 mm (for the maximum width, see 5.2.2).

5.2 Location of the clear area(s) on the security sheet

5.2.1 The horizontal centreline of the clear area(s) shall be located exactly 23,5 mm or 34,5 mm from the upper edge and/or exactly 7,5 mm from the lower edge of the security sheet.

5.2.2 The right edge of the clear area shall be located exactly 5 mm or 25 mm from the right edge of the security sheet. The left edge of the clear area shall be located not less than 5 mm from the left edge of the security sheet.

5.3 Location of the clear area on the coupons

5.3.1 The horizontal centreline of the clear area shall be located exactly 7,5 mm from the lower edge of the coupon.

5.3.2 The right edge of the clear area shall be located exactly 5 mm from the right edge of the coupon. The left edge of the clear area shall be located exactly 5 mm from the left edge of the coupon.

5.4 Background of the clear area(s)

The background of the clear area(s) shall be white or tinted in a sufficiently light colour; for further explanations see ISO 1831, 5.4 and annex B.

6 Printing specifications of the OCR line

6.1 Characters to be used

In accordance with annex C of this International Standard, the only characters to be used are the 47 OCR-B, size 1 characters as defined in ISO 1073-2:1976, 5.2, sub-set 2 and 3.6, with the associated tables.

For technical reasons it is recommended to avoid the use of the characters "full stop" and "comma", as well as of the letters I, O, and Q.

6.2 OCR line and characters

The OCR line shall be centred horizontally on the centreline of the clear area.

6.2.1 The OCR line shall be right justified.

6.2.2 The OCR characters shall be printed with a constant pitch of 10 characters per inch (25,4 mm). The printed characters shall have the print tolerance range X (see ISO 1831:1980, 5.2 and table 2). For other specifications on the print quality (quality of the printed image, character skew, character spacing, and alignment within a line) see ISO 1831:1980, clauses 5 and 6 and annexes B, C, and D.

7 Structure of the OCR lines

The structure of the lines is illustrated in annex D.

7.1 Types

There may be two types of OCR lines:

- the Security Identification Line (SIL) which is mandatory and contains the information needed to identify the certificate;
- the Auxiliary Information Line (AIL) which is optional and contains additional information.

The SIL and the AIL may be located in the upper and the lower clear areas respectively. Alternatively, the SIL and the AIL may be located consecutively (specifically AIL followed by SIL) in the same clear area.

7.2 General rules for structuring the SIL and AIL

7.2.1 Fields shall be separated either by one space or by one “+” sign. Only one method shall be used at a national level. No other characters shall be used as field separators.

7.2.2 The length of the fields shall be standardized at a national level. Where no national standard exists, default field lengths as specified in 7.3 shall apply.

7.2.3 The information characters within each field shall be right justified and unused positions shall be zero filled.

7.2.4 Unused fields shall consist of at least one zero.

7.3 The SIL

The SIL shall always consist of 37 characters (field separators included), and shall be composed of six fields appearing as follows from left to right:

7.3.1 Minimum of one space.

The space preceding field one may be replaced by the sign “<”.

7.3.2 Field one: Special code.

- Format: Fixed length, one alphanumeric character.
- Contents: May be defined at a national level, e.g. a check digit.

NOTE 1 See also annex A.

7.3.3 One space or “+” sign.

7.3.4 Field two: Document type or coupon number.

- Format: Fixed length, two alphanumeric characters.
- Contents: The following codes shall be used:
 - a) For coupons: "01" to "99"
 - b) For security sheets: "00" (zero zero)
 - c) For talons: "TT"
 - d) For warrant sheets: "W0" (W zero)

NOTE 2 See also annex A.

7.3.5 One space or "+" sign.

7.3.6 Field three: Security denomination or coupon value.

- Format: Variable length, numeric, plus H, K, M, and/or V, if appropriate.
Default length: 6 characters.
- Contents:
 - a) Security denomination: Face value expressed in terms of either nominal amount or number of shares/units represented by the security document.
 - b) Coupon value: Gross amount payable on presentation of the coupon. In this case the first character of the field shall be a "V".
- If the length of the field is insufficient, the codes defined below shall be used, following the numeric characters:
 - "H" for hundreds
 - "K" for thousands
 - "M" for millions

7.3.7 One space or "+" sign.

7.3.8 Field four: International securities identification number.

- Format: Fixed length, 12 alphanumeric characters.
For securities which have no international circulation, the national identification number may be used; in this case the field length shall not exceed 9 characters.

7.3.9 One space or "+" sign.

7.3.10 Field five: Series designation.

- Format: Variable length, alphanumeric.
Default length: 2 characters.

7.3.11 One space or "+" sign.

7.3.12 Field six: Certificate number.

— Format: Variable length, alphanumeric.

Default length: 7 characters.

7.3.13 One space which has to be replaced by the sign ">" if the sign "<" has been used (see 7.3.1).

7.4 The AIL

The AIL may be composed of a variable number of characters and fields.

The AIL shall be preceded by a minimum of one space and begin with the sign "<"; it shall end with the sign ">".

8 Examples of OCR lines**8.1 Bearer security of 5 ordinary shares of PETROFINA S.A. (Belgium)**

a) SIL on the security sheet:

0	00	000005	BE0003441467	0	06799461	
1	2	3	4	5	6	(field No.)

b) SIL on coupon No. 83:

0	83	000005	BE0003441467	0	06799461	
1	2	3	4	5	6	(field No.)

8.2 Bearer security of a LUF 1 000 000 bond of the PARBEL FINANCE N.V. 10 % 1985-1991 Private Bond Issue

a) SIL on the security sheet (default length):

0	00	00001M	LU0002035052	00	0000130	
1	2	3	4	5	6	(field No.)

b) SIL on coupon No. 6 (default length):

0	06	00001M	LU0002035052	00	0000130	
1	2	3	4	5	6	(field No.)

8.3 Bearer security of 1 share "B" of SIBRA HOLDING S.A. (Switzerland)

a) SIL on the security sheet (Swiss standard):

1	00	0000001	CH0002313911	B	0123456	
1	2	3	4	5	6	(field No.)

b) SIL on coupon No. 18 (Swiss standard):

1	18	0000001	CH0002313911	B	0123456	
1	2	3	4	5	6	(field No.)

8.4 Registered security of 110 shares of CREDIT SUISSE (Switzerland)

a) SIL on the security sheet (Swiss standard):

0	00	0000110	CH0001333670	00	039371	
1	2	3	4	5	6	(field No.)

b) AIL on the security sheet (Swiss standard):

<00026032	005389	1	00000110	039371>	
1	2	3	4	5	(field No.)

8.5 Warrant "A" of the OERLIKON-BÜHRLE HOLDING AG 23/4 % 1986-1996 CHF Bond issue

SIL on the warrant sheet (Swiss standard):

1	W0	0000001	CH0002153549	0A	000501	
1	2	3	4	5	6	(field No.)

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Annex A (normative)

OCR lines already in existence

A.1 Euro-bonds (The Association of International Bond Dealers Recommendations for the format of Eurobonds) and Dutch securities

A.1.1 The OCR line

The OCR line is very similar to the ISO line (see ISO 8109).

It differs in two respects:

- field No. 1 (special code) does not exist on security sheets and coupons;
- field No. 2 (document type or coupon number) does not exist on security sheets.

The other fields are printed in the same sequence with a fixed length and are separated by a space. The font is OCR-B.

A.1.2 Examples

- a) Bearer security of an AUD 1000 bond of the AUSTRALIAN INDUSTRY DEVELOPMENT CORP. 13 % 1985-1988 Notes issue.

- OCR line on the security sheet:

```
0001000 GB00000649433 00 006318
 3         4         5     6      (field No.)
```

- OCR line on coupon No. 3:

```
03 0001000 GB00000649433 00 006318
 2   3         4         5     6      (field No.)
```

- b) Bearer certificate of a PHILIPS WARRANT-1984 to subscribe for 1000 ordinary shares of N.V. Gemeenschappelijk Bezit van Aandelen Philips Gloeilampenfabrieken.

- OCR line:

```
0001000 NL00000492205 FF 007001
 3         4         5     6      (field No.)
```

A.2 "Certificats Représentatifs" (CR) of French securities

A.2.1 The structure of the OCR line

The structure is as follows:

- a) Field one: Document type and lay-out field.

Format: Fixed length of 4 characters.

- First character: No. 4.

On the security sheet and coupons this digit indicates that it is a bearer security.

- Second character: No. 3.

On the security sheet and coupon this digit indicates that a check digit is computed on field No. 3 in accordance with ISO 6166 (modulo 10 "D.A.D.").

- Third and fourth characters:

- 1) Security sheet: The code "BS".

The code represents bearer security sheet.

- 2) Coupons: Two digits.

The digits indicate the coupon's number.

- b) Field two: Denomination (number of shares represented by the "certificat représentatif").

Format: Fixed length of 4 characters.

- First three characters:

These characters are always numeric.

- Fourth character:

This can either be numeric or alphabetic ("H" for hundred, "K" for thousand, "M" for million).

- c) Field three: International Security Identification Number (ISIN).

Format: Fixed length of 12 characters.

- d) Field four: Certificate number.

Format: Fixed length of 10 numeric characters.

These fields are separated by a space. The font is OCR-B.

A.2.2 Example

Bearer "CR" of 1 ordinary share of MOET-HENNESSY S.A.

- a) OCR line on the security sheet:

43BS 0001 FR0000121014 0000002326

- b) OCR line on coupon No. 51:

4351 0001 FR0000121014 0000002326

A.3 Belgian saving bonds and shares

A.3.1 The structure of the OCR line

The structure is as follows:

- a) Field one: Certificate number.

Format: 8 numeric characters, 2 spaces, 1 numeric character.

The last character is a check digit computed following the modulo 7 (direct remainder of the certificate number division by 7).

b) Field two: Various codes.

Format: 4 numeric characters.

- First character: Type of document (security).
 - No. 1: bond security sheet
 - No. 2: bond coupon
 - Nos. 3-4: share security sheet
 - Nos. 5-6: share coupon
- Second character: Code for denomination or for the number of shares.
- Third and fourth characters:
 - Nos. 00, 90 to 99: Security sheet code.
 - Nos. 01 to 89: Rank of the coupon.

c) Field three: National Security Identification Number.

- Format: 8 numeric characters.
- The last two characters are the check-digit modulo 97 of the six other ones.

d) Field four: Type of OCR line.

- Format: 1 numeric character.

These fields are separated by one space. The font is OCR-B.

A.3.2 Example

Bearer security of a BEF 100 000, five year savings bond 10,5 % due 01.09.1990 of CREDIT COMMUNAL DE BELGIQUE.

a) OCR line on the security sheet:

15989037 1 1691 40517809 1

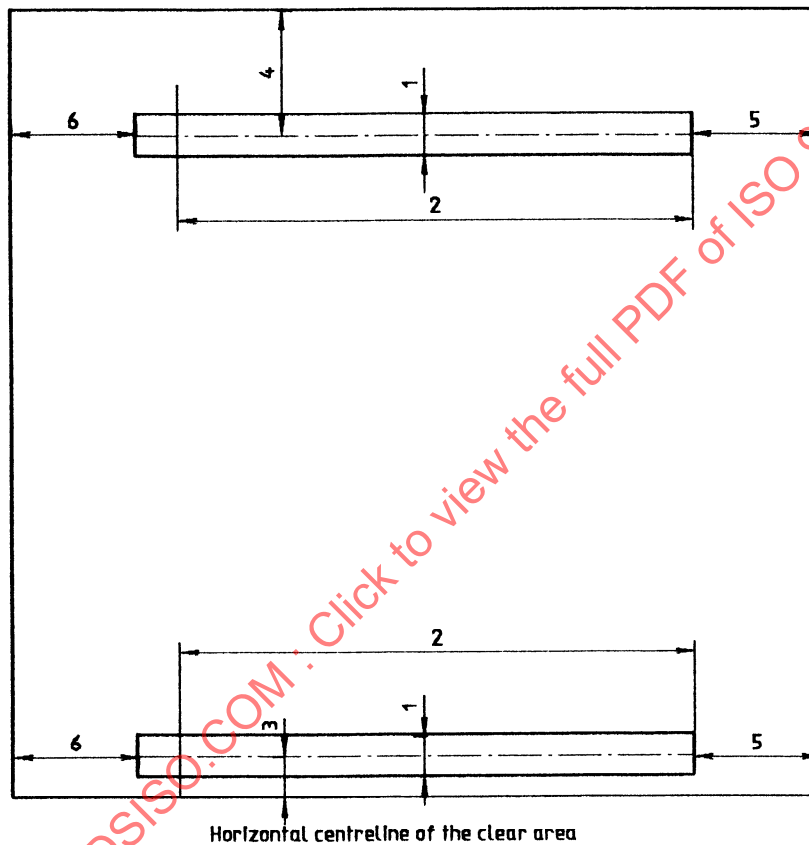
b) OCR line on coupon No. 4:

15989037 1 2604 40517809 2

Annex B (normative)

Specifications and size of the clear areas

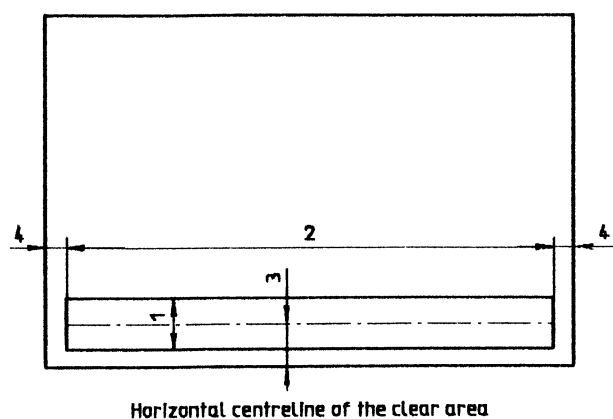
See figure B.1 and figure B.2.



Legend

- 1 Height of the clear area: exactly 9 mm min.
- 2 Minimum width of the clear area: 95 mm
- 3 Distance of the horizontal centreline of the clear area from the lower edge of the security sheet: 7,5 mm
- 4 Distance of the horizontal centreline of the clear area from the upper edge of the security sheet: 23,5 mm or 34,5 mm
- 5 Distance from the right edge of the clear area to the right edge of the security sheet: 5 mm or 25 mm
- 6 Minimum distance from the left edge of the clear area to the left edge of the security sheet: 5 mm

Figure B.1 — Specifications and size of the clear area(s) on the security sheet



Legend

- 1 Height of the clear area: exactly 9 mm
- 2 Minimum width of the clear area: 95 mm
- 3 Distance of the horizontal centreline of the clear area from the lower edge of the coupon: 7,5 mm
- 4 Distance from the right (left) edge of the clear area to the right (left) edge of the coupon: 5 mm

Figure B.2 — Specifications and size of the clear area on the coupon

Annex C
(normative)

OCR-B initial alphanumeric character sub-set

(ISO 1073-2, 5.2, sub-set 2.)^{*)}

See figure C.1.

0 1 2 3 4 5 6 7 8 9

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

< + > * - = / ■

┆ SPACE

Figure C.1

^{*)} For technical reasons it is recommended to avoid the use of the characters "full stop", "comma", and of the letters I, O, and Q.