INTERNATIONAL STANDARD

ISO/IEC 9995-4

Second edition
2002-09-01

Information technology — Keyboard layouts for text and office systems —

Part 4: Numeric section

Technologies de l'information — Disposition des claviers conçus pour la bureautique —

Partie 4: Module numérique

Reference number
ISO/IEC 9995-4:2002(E)

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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 non-governmental, 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 JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of the joint technical committee is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 9995 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 9995-4 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 35, *User interfaces*.

This second edition cancels and replaces the first edition (ISO/IEC 9995-4:1994) which has been technically revised.

ISO/IEC 9995 consists of the following parts, under the general title *Information technology — Keyboard layouts for text and office systems*:

— *Part 1: General principles governing keyboard layouts*

— *Part 2: Alphanumeric section*

— *Part 3: Complementary layouts of the alphanumeric zone of the alphanumeric section*

— *Part 4: Numeric section*

— *Part 5: Editing section*

— *Part 6: Function section*

— *Part 7: Symbols used to represent functions*

— *Part 8: Allocation of letters to the keys of a numeric keypad*

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Information technology — Keyboard layouts for text and office systems —

Part 4: Numeric section

1 Scope

Within the general scope described in part 1 of ISO/IEC 9995 this part of ISO/IEC 9995 specifies the numeric section of a keyboard and the division of that section into zones. It specifies the arrangement, the number, and the location of the keys in the numeric zone ZN0 and in the function zones ZN1 to ZN6 of the numeric section, as well as the allocation of functions to the keys.

The numeric zone ZN0 is to be used in keyboards for applications such as text and data processing; general office environment; banking; point of sales (POS); telematic services; telephony apparatus; home electronic systems; numerical control of machinery and equipment; input of personal identification number (PIN); etc.

The function zones ZN1 to ZN6 are to be used in keyboards for applications such as data entry, text and data processing, general office environment, etc.

NOTE Certain of these applications are under the responsibility of the ITU-T.

2 Conformance

Equipment is in conformance with this part of ISO/IEC 9995 if it meets the requirements of Clause 5, 6, 7, 8, 9, 10 and either 8.1, 8.2.

3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 9995. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 9995 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 9995-1:1994, *Information technology — Keyboard layouts for text and office systems — Part 1: General principles governing keyboard layouts*

ITU-T Recommendation E.161, *Arrangement of figures, letters and symbols on telephones and other devices that can be used for gaining access to a telephone network*

4 Terms and definitions

For the purposes of this part of ISO/IEC 9995, the terms and definitions given in ISO/IEC 9995-1 apply.

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5 Arrangement and location

The numeric section is generally a rectangular arrangement of keys located to the right of the alphanumeric section and the editing section and below a part of the function section, see ISO/IEC 9995-1.

6 Division into zones

The numeric section is divided into zones as illustrated in Figure 1.

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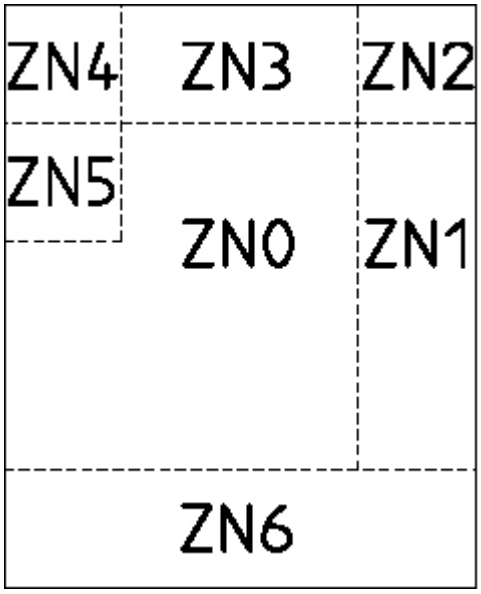


Figure 1 — Division of the numeric section into zones

ZN0 is the numeric zone of the numeric section. The arrangement, the number, and the locations of the keys as well as the allocation of functions to the keys are specified in Clauses 7, 8.

ZN1 to ZN6 are the function zones of the numeric section. The arrangement, the number, and the location of the keys as well as the allocation of functions to the keys are specified in Clause 9.

7 Arrangement, location and functions of the keys in the numeric zone

The keys shall be arranged in the numeric zone ZN0 and be located as illustrated in Figure 2.

The functions to be allocated to the keys of the numeric zone are the digits zero to nine, the decimal separator, and two telematic functions.

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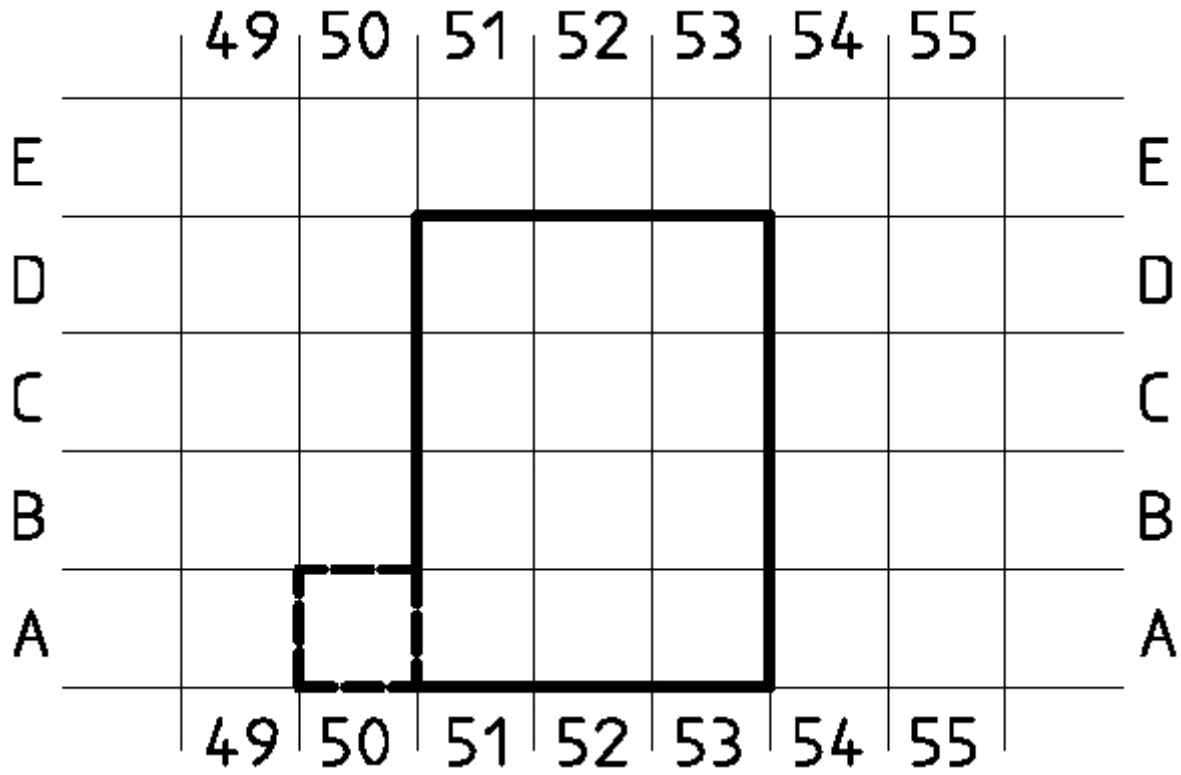


Figure 2 — Arrangement and location of the keys in the numeric zone

8 Allocation of functions to the keys of the numeric zone

The ten digits zero to nine shall be allocated to ten keys of the numeric zone ZN0 in one of two ways: The “1-2-3” layout (see 8.1) or the “7-8-9” layout (see 8.2). The “1-2-3” layout is preferred.

The decimal separator and the telematic functions shall be allocated as defined in 8.1, 8.2.

8.1 The “1-2-3” layout

This layout is primarily intended for general office applications, text and data processing, and other applications such as telematic services, telephony apparatus, home electronic systems, numerical control of machinery and equipment. It is also recommended for combined voice/data terminal equipment. The allocation of the functions of the 1-2-3 layout shall be as indicated in Table 1; see also Figure 3.

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Table 1 — The "1-2-3" layout

Key	Office function	Telematic function	Conventional office symbol	Conventional telematic symbol
A 50				
A 51		Initiator		star
A 52	digit zero	Digit zero	0	0
A 53	decimal separator	Terminator	ISO/IEC 9995-7 symbol 62: 	octothorpe
B 51	digit seven	digit seven	7	7
B 52	digit eight	Digit eight	8	8
B 53	digit nine	Digit nine	9	9
C 51	digit four	Digit four	4	4
C 52	digit five	Digit five	5	5
C 53	digit six	Digit six	6	6
D 51	digit one	Digit one	1	1
D 52	digit two	Digit two	2	2
D 53	digit three	Digit three	3	3

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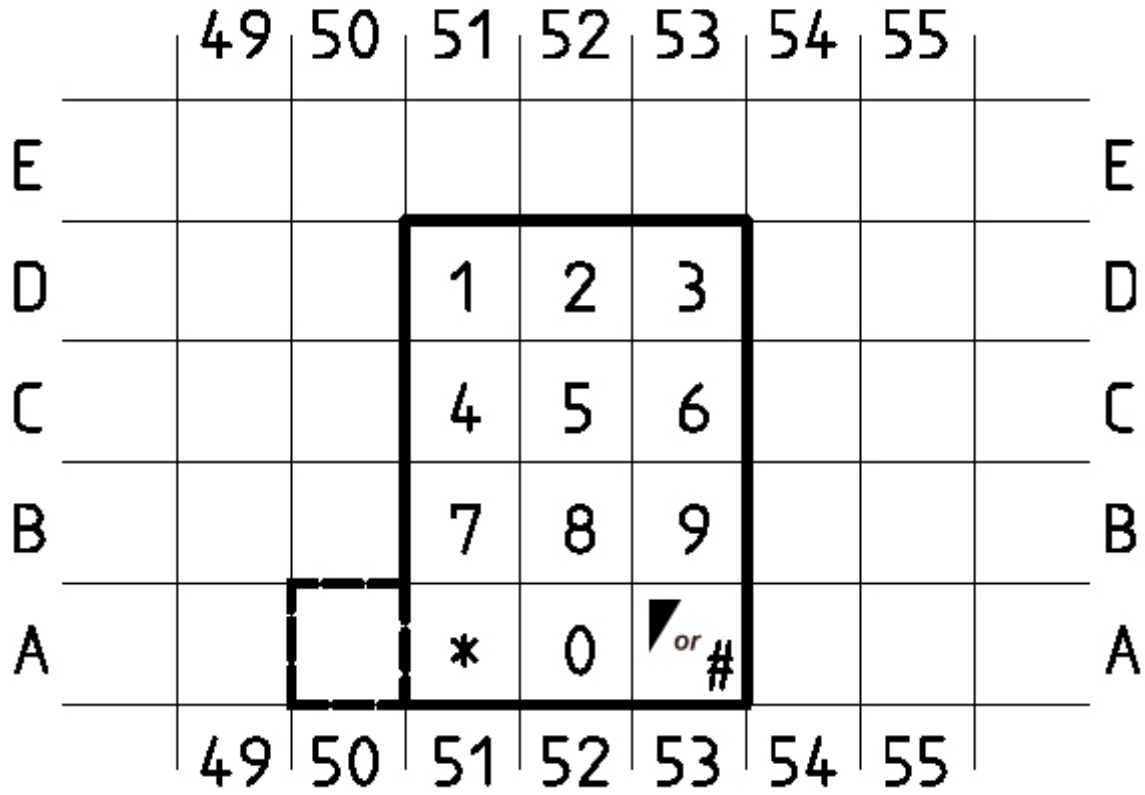


Figure 3 — The "1-2-3" layout

The telematic functions initiator and terminator allocated to the keys in positions A51 and A53 are determined in the relevant ITU-T recommendations and the actual shape of the symbols is specified in CCITT Recommendation E.161.

NOTE The decimal separator key allocated in position A53 is a function key and this key is intended in no way to be an alphanumeric key. Its function is, during input, to indicate that the integer part of a number being entered has ended and that any further series of digits entered immediately after it shall be for the decimal part of the number, without any dependency on the presentation of the decimal separator. It is recommended that the labelling of this function use the function symbol 62 as defined in ISO/IEC 9995-7, or, in countries where no ambiguity exists, any other unique national symbol used to indicate this function (such as comma or full stop).

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No office function is allocated to the key in position A51. Recommended functions are:

— space character, for possible use as triad separator;

— single zero, increasing the area from which the digit zero can be entered;

— double zero.

No function is allocated to the key in position A50. Recommended functions are:

— single zero, increasing the area from which the digit zero can be entered;

— double zero;

— triple zero, in addition to a single zero or in connection with the double zero on the key in position A51.

If required to cater for trained personnel, or to have uniformity of layouts within an installation, the “7-8-9” layout (see 8.2) may also be provided for the applications listed above.

8.2 The “7-8-9” layout

This layout is primarily intended for applications such as data entry, and other general office applications. The allocation of the functions of the “7-8-9” layout shall be as indicated in Table 2; see also Figure 4.

The telematic functions initiator and terminator allocated to the keys in positions A51 and A53 are determined in the relevant ITU-T Recommendations and the actual shape of the symbols is specified in CCITT recommendation E.161.

No office function is allocated to the key in position A51. Recommended functions are:

— space character, for possible use as triad separator;

— single zero, increasing the area from which the digit zero can be entered;

— double zero.

No function is allocated to the key in position A50. Recommended functions are:

— single zero, increasing the area from which the digit zero can be entered;

— double zero;

— triple zero, in addition to a single zero or in connection with the double zero on the key in position A51.

If this layout is not required to cater for trained personnel, or to have uniformity of layouts within an installation, the “1-2-3” layout (see 8.1) is recommended for the applications listed above.

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Table 2 — The “7-8-9” layout

Key	Office function	Telematic function	Conventional office symbol	Conventional telematic symbol
A 50				
A 51		Initiator		star
A 52	digit zero	Digit zero	0	0
A 53	decimal separator	Terminator	ISO/IEC 9995-7 symbol 62: 	octothorpe
B 51	digit one	Digit one	1	1
B 52	digit two	Digit two	2	2
B 53	digit three	Digit three	3	3
C 51	digit four	Digit four	4	4
C 52	digit five	Digit five	5	5
C 53	digit six	Digit six	6	6
D 51	digit seven	Digit seven	7	7
D 52	digit eight	Digit eight	8	8
D 53	digit nine	Digit nine	9	9

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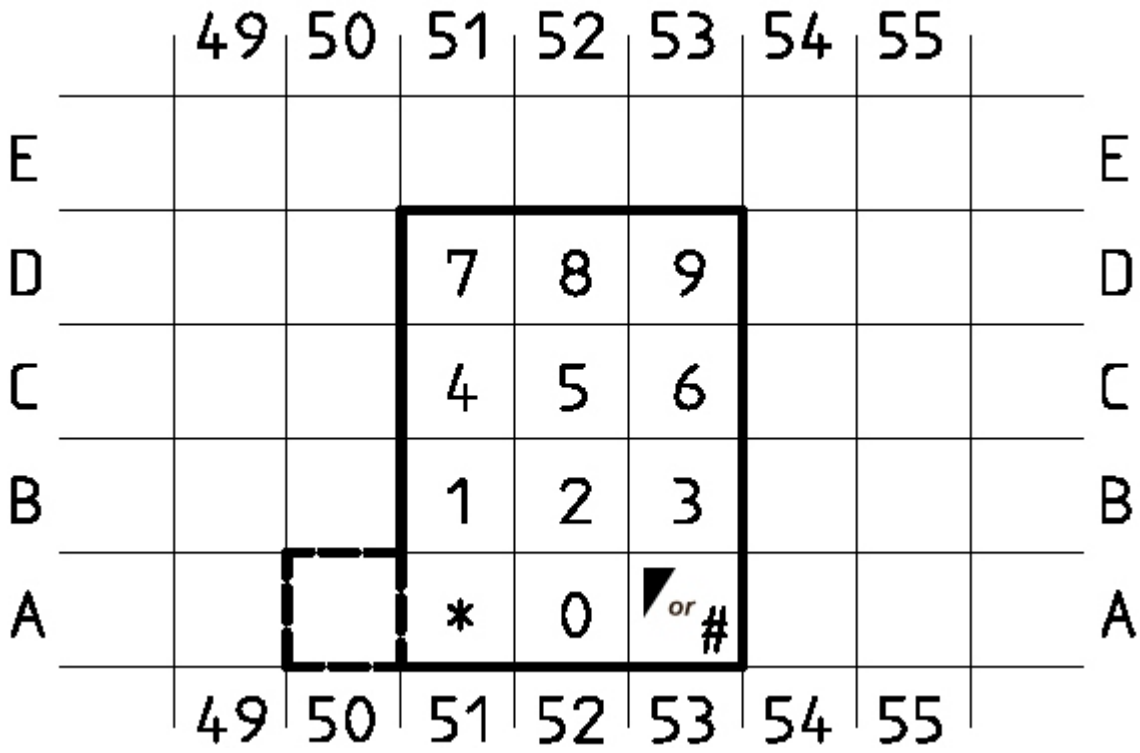


Figure 4 — The "7-8-9" layout

NOTE The decimal separator key allocated in position A53 is a function key and this key is intended in no way to be an alphanumeric key. Its function is, during input, to indicate that the integer part of a number being entered has ended and that any further series of digits entered immediately after it shall be for the decimal part of the number, without any dependency on the presentation of the decimal separator. It is recommended that the labelling of this function on the keyboard use the function symbol 62 as defined in ISO/IEC 9995-7, or, in countries where no ambiguity exists, any other unique national symbol used to indicate this function (such as comma or full stop).

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9 Arrangement, location and functions of the function zones

The keys shall be arranged in the function zones ZN1, ZN2, and ZN3 and be located as specified in Figure 5.

The keys in positions A54 to D54 are in zone ZN1.

The key in position E54 is in zone ZN2.

The keys in positions E51 to E53 are in zone ZN3.

The zones ZN4, ZN5, and ZN6 are not shown in Figure 5 as no keys are specified.

The functions allocated to the keys of the function zones ZN1, ZN2, and ZN3 of the numeric section are:

— add or enter;

— equals (or the equals sign);

— tabulation or alternative decimal separator;

— the four arithmetic operators (or the equivalent graphic characters).

The application will determine whether the functions:

— addition;

— subtraction;

— multiplication;

— division;

— equals

or the equivalent graphic characters:

— plus sign;

— minus sign;

— multiply sign;

— divide sign;

— equals sign;

are generated.

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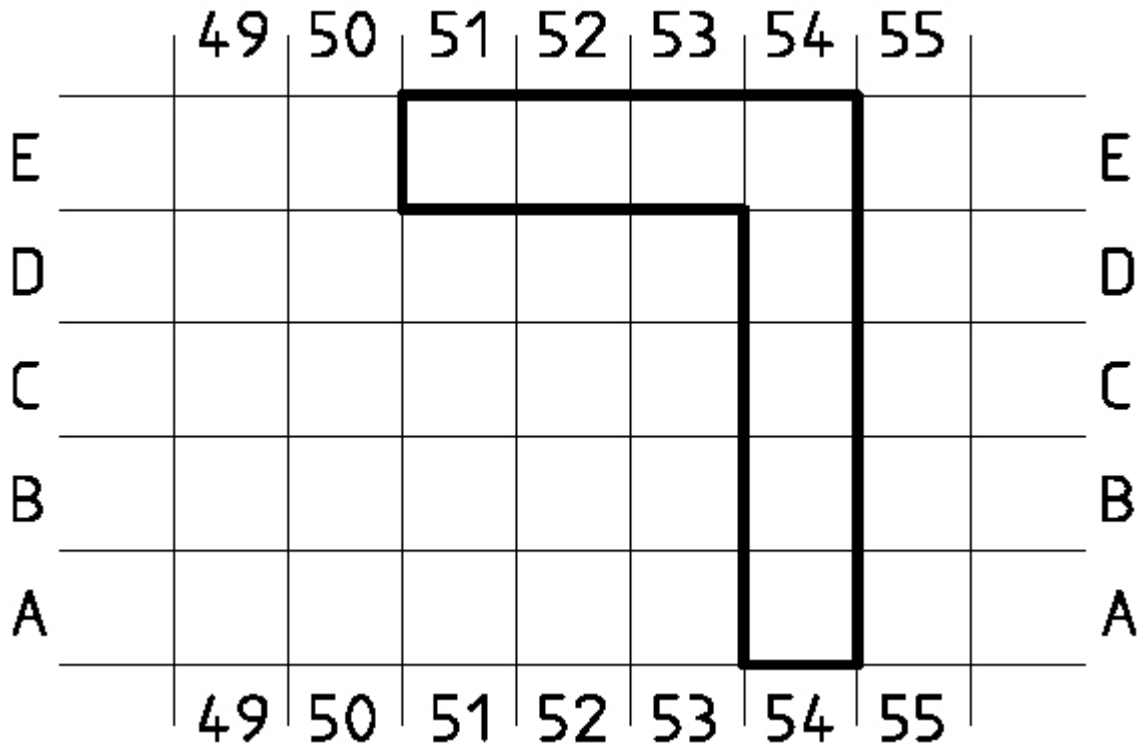


Figure 5 — The arrangement and location of the keys in the function zones ZN1, ZN2, and ZN3

10 Allocation of functions to the keys of the function zones

The allocation of the functions listed in Clause 9 is shown in Table 3 and illustrated in Figure 6.

This allocation shall apply only if the four arithmetic operators (or the equivalent graphic characters) are allocated to the keys in row E.

The key in position A-B54 will have the function addition or the function enter as required by the application.

If a tabulation function or an alternative decimal separator is required, the relevant function shall be allocated to the key in position C54.

NOTE The use of the asterisk and solidus graphic characters to represent the functions multiplication and division is deprecated.

Table 3 — Functions located in the function zones ZN1, ZN2, and ZN3

Key	Function	Conventional symbol
A-B54	addition or enter	country or language dependent
C-D54	equals	=
E 51	addition	+
E 52	subtraction	-
E 53	multiplication	×
E 54	division	÷

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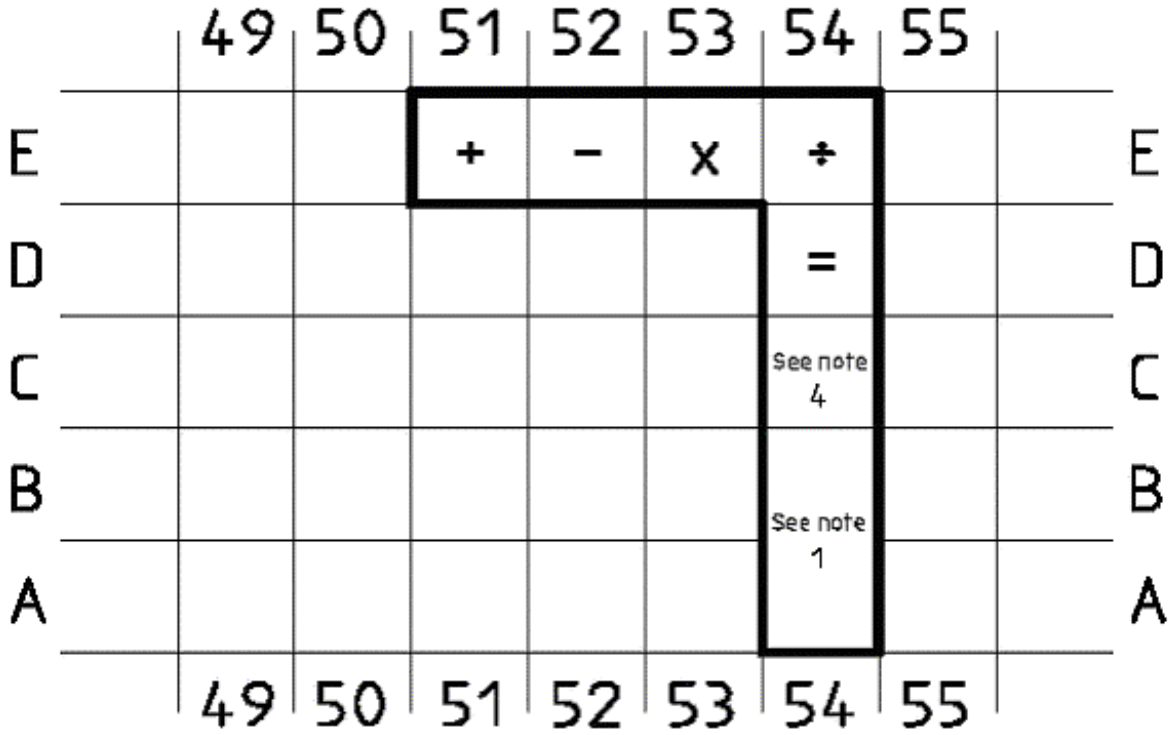


Figure 6 — Allocation of functions to the keys in the function zones ZN1, ZN2, and ZN3

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